Mini-Mobile Workshop

The Mini-Mobile provides the sophisticated production capabilities of a studio in a system designed to be used on location. A multi-camera remote unit such as the Mini-Mobile allows the producer to videotape an event “on location”, while at the same time giving the viewer a continually changing variety of viewpoints. Therefore, a multi-camera system is ideal for such productions as sporting contests, concerts, theatrical presentations, and lectures.

The “Mini” is one of 2 high-definition mobile systems available at MetroEast:

**The Micro-Mobile** - Small enough to fit the entire system in the back seat of an average car, and simple enough to operate for even a novice crew to set-up and operate quickly.

**The Mini-Mobile** - This system is larger (requires a truck or van to transport), more complex in set-up and operation, but provides higher quality cameras, and additional features that are not available on the Micro.

*Note: This class will not certify you to operate the Micro-Mobile system.*

Reservations and Check-Out:

The Mini-Mobile can be reserved up to approximately three months prior to your production. Because of the high demand on equipment, advance reservations are advised.

The system can be checked-out for a maximum of 72 hours.

Reservations, and equipment pick-up/return may be made only during Equipment Room hours:

- Monday, Thursday, Friday - 2:00 p.m. until 10:00 p.m.
- Saturday and Sunday - 11:00 a.m. until 9:00 p.m.

Call 503-667-8848 extension 307 during these hours to reserve the Mini-Mobile.

The Mini-Mobile equipment package includes:

1) **Base Unit**
   - The “Tricaster 855” unit, which provides a “switcher” for switching between cameras, a hard-drive based recorder, 2 digital playback units for replaying pre-recorded segments such as show opens or roll-ins, and a system for creating program graphics and titles.

2) **4 Video cameras**. Each includes a large viewfinder, remote controls for focus and zoom functions, and a “Camera Control Unit” for remote adjustment of color and brightness.

3) **4 Tripods** in carrying cases.

4) **Camera Cables**
   - 3 - 100 foot, and 3 - 200 foot cables

**Optional Equipment:**
- Microphones, Power cables and power strips, Video and audio cables.

**Crew Requirements:**
During equipment check-out, the producer will be asked to provide MetroEast with the names of crew members operating equipment on the production. MetroEast requires at least one certified operator for each camera, and for the Mini-Mobile switcher/mixer unit.
Planning the Mobile Production

While each mobile production will present its own unique set of challenges, all share similar organizing goals. Here is a checklist to guide you through the pre-production planning.

☐ **Develop a Production Concept.**

Contact the organizer of the event to get permission to shoot. Explain that you’ll need access to the site 2-3 hours before it begins, a separate but close-by room to use as a control room, positions for the 4 cameras, access to AC power, etc.

Don’t wait until the day of the shoot to explain to the event organizers how the production will impact the event for the performers and in-house audience members.

☐ **Reserve Equipment.**

Once you get the OK to tape the event, you’ll need to reserve all needed equipment as far in advance as possible to ensure availability.

**Call the Equipment Room at 667-8848, Extension 307** during these hours:

- **Mon., Thu., Fri. 2:00 - 10:00 pm** or **Sat. - Sun. 11:00 am - 9:00 pm**

Ask the Equipment Room staff to give you a “Program Number” for the production. Then schedule appointments to pick-up and return equipment during these hours.

☐ **Recruit Crew.**

Recruit from 5 to 8 crew members from the Volunteer Directory. Copies are available at the Equipment Room. All crew must have completed the Mini-Mobile or Basic Studio workshop to operate equipment.

Let each crew member know:
1) **“Crew Call” and “Wrap” times.** That is, when to meet at the location, and when they can expect to be done with the shoot. (Usually about 5 to 7 hours)
2) **Appropriate attire** for the type of event, location, and weather conditions.
3) Whether you’ll be providing **food and drinks** (a good idea).
4) **Specific directions** to the location, and parking information.
5) **Crew assignments** (what position they will be expected to fill).

☐ **Perform a Site Check.**

Visit the location to scout out locations for equipment, and potential trouble spots:

1) **Access to the site.** What’s the best way to get the equipment in and out of the location.
2) **Control Room.** Find a room that is close to the event, but quiet enough to communicate.
3) **Power.** The Mini-mobile can plug into any standard AC outlet. It’s best if the outlet is not shared by lighting or kitchen equipment.
4) **Camera Positions.** Choose one position which can provide a wide overall view of the stage or field, and the other three in positions which can provide clear close-up views of all the action. Choose positions which will not block or be blocked by the audience. Also, select positions where the camera won’t be in danger of falling or being knocked over.
5) **Cable Runs.** How will you run the cables from the cameras, lights, audio equipment, etc. while minimizing the chances of tripping people, or damaging the gear? How long will the cables have to be?
6) **Lighting.** Will there be enough light to produce a decent picture? Will they be adding more? Will they allow you to bring in extra lighting equipment?
Site Check

Location: Acme Theater
Date: 8-17-2013

Sound Board.
Need 1/4" Mono Male Plug
100'+50' audio cable to reach to Micro-Mobile

Cam 1
Camera Cable run across floor, tight to front edge of stage

Cam 2
Cable taped down to floor across aisle

Cam 3
Cable "flown" above doorway. Taped in place.

Cam 4
Cables run tight against wall, out stage exit to Control Room

Against edge of bottom stair

Rope-off this seat

Cable taped in place.
The System Layout

Here is a simplified view of the Mini-Mobile system. Each of the 4 cameras (1) is connected by a cable to a Camera Control Unit (2) which provides power and picture adjustment. The CCUs then send the cameras video through smaller cables to the Tricaster Unit (3), that lets you select and switch between cameras and record the switched feed. The Tricaster is connected to monitors to let you see the cameras and switched feed (4), and also to a “control surface” (5) where you can push buttons to do the selecting and switching.

Audio

Connect microphones or other sound sources to an “Audio Mixer” (a) to blend and adjust the volume of several sources. The mixed sound is fed into the Tricaster for recording (b), and then to a speaker and/or headphones (c) for monitoring the quality of the sound.
Setting-Up the Mini: Tripod

Set-Up Tripod:

1) With tripod legs together, lift leg extension levers near the bottoms of each leg, and extend to desired height. Note that there are 3 extension sections on each leg, which give a maximum camera height of 7’2” when all 3 are fully extended.

Also, there are rubber feet at the bottom of each leg. If you turn the feet a few rotations, you’ll reveal a metal spike which can give you a firmer foundation when setting up in grass, but can scratch floors!

2) Lock (push down) leg extension levers firmly. One of the most common causes of camera damage is when the tripod tips over because one of the legs is left unlocked.

3) Spread tripod legs wide for maximum stability. Make sure all 3 legs are pulled out to limit of hinge. If one of the legs is not pulled all the way out, it can fall over, and will likely be off-level.

Level Tripod Head:

4) Locate BUBBLE LEVEL on upper surface of tripod.

5) Twist the shaft below the Tripod Head to loosen.

6) Grab the Tripod Head with both hands and gently rock it left, right, forward, or back until the floating bubble inside the level is almost completely inside the circle printed on the glass.

7) Tighten the leveling shaft enough to prevent the head from slipping out of level when the weight of the camera is added.

Prepare to Attach the Camera:

8) Lock the TILT LOCK and PAN LOCK levers. Turn the levers clockwise until tight. This will prevent the tripod from moving when you’re attaching the camera.

9) Loosen the CAMERA PLATE CINCH lever. If tight, this control would make sliding the camera onto the head difficult. Turn the lever counter-clockwise several turns until loose.
Camera Set-Up

The next step is to (carefully!) attach the camera to the tripod head, attach the viewfinder, and connect the remote controls for the zoom and focus.

Mounting the Camera

The camera will normally have a “tripod mounting plate” attached to the bottom when you remove it from the camera case.

On the underside of this plate is a “wedge” that fits into the groove on the top side of the Tripod Head.

1) On the Tripod Head, locate the attachment points for the “Panhandles” you'll attach in a few minutes. These points should be at the back of the camera.

2) Position the camera just behind the tripod head, line up the wedge on the camera plate with the groove on the Tripod Head, and slide the camera forward into the groove.

3) When you’ve pushed it far enough into the groove, you should hear a “click” as it passes a safety lock. This will now prevent the camera from sliding back out of the groove.

4) Slide the camera forward so that the back of the camera is about even with the back of the Tripod Head. This will help keep the camera well balanced.

Lock the Camera in Place:

Even though the camera is now securely locked into the tripod head groove, it can still slide forward or backward several inches. To prevent this movement:

5) Locate the “Tripod Plate Cinch Knob” on the opposite side of the tripod head, and turn it several clockwise turns until tight.
Camera Set-Up

The “Viewfinder” lets the camera operator comfortably see what the camera sees. It is mounted on the top of the camera, with its screen facing toward the back of the camera.

Attach the Viewfinder to the camera:

1) Locate the viewfinder's mounting bracket on the top of the camera body, just behind the handle.

2) Position the Viewfinder so that its mounting connection is just above and slightly toward the back of the camera.

3) Gently lower the viewfinder onto the camera bracket and slide forward until the viewfinder clicks into place. Give the viewfinder a gentle tug to make sure it is solidly attached.

Plug it In:

4) The cable hanging from the viewfinder should attach to the body of the camera. The connection is “keyed” so that the plug can only attach one way.

Adjust the Viewfinder:

5) You can tilt and swivel the viewfinder to accommodate your height and the height of the camera.

Grab the shaft sticking out below the screen, and turn it counter-clockwise to loosen. Re-tighten after you have it adjusted to your liking.

6) There are also knobs below the screen to let you adjust the brightness and contrast of the display. These do not adjust the picture seen by the viewer.

Turn the knob marked “AFT” to enhance the “edges” of objects in the picture to make focusing easier.

Turn off the switch marked “FRONT TALLY” to disable the red light on top of the viewfinder if it is distracting to performers in front of the cameras.
Camera Set-Up

The final steps in preparing the camera for use are attaching the Panhandles (with zoom and focus controls), and plugging-in the camera cable.

**Attach the Panhandles:**
The two long handles in the camera case attach to the Tripod Head at the back of the camera.
1) Thread the bolts on the ends of the handles into the toothed recepticals on the Tripod Head. The Zoom control should be on the operators right hand.
2) Adjust the handles to a comfortable angle and then tighten the levers.

**Attach the Focus Cables:**
3) Slide the “blade” on the end of the heavy focus cable into the slot on the top of the focus adjust control on the left panhandle. Carefully screw-on the cap to hold the cable in place.
4) Slide the blade on the other end of the cable into the opening on the “Focus Block” attached to the lens. When the blade is in place, you should be able to turn the control on the handle, and see the focus ring on the lens turn.

**Connect the Zoom Cable:**
5) Slide the connection on the end of the cable attached to the Zoom Control to the connection on the underside of the lens. The connection is keyed so that it can only plug-in in one direction.
Screw-on the tightening ring to hold the connection in place.

**Check the Power Switch:**
6) Make sure the cameras main Power Switch is set to the position marked “CCU”.

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*Image of camera with labels:*
- Label 1: Attach the Panhandles
- Label 2: Attach the Focus Cables
- Label 3: Connect the Zoom Cable
- Label 4: Check the Power Switch
Camera Set-Up

About the Camera Cables:
The Mini-Mobile includes 3- 100’ and 3-200’ camera cables. The cables are delicate and expensive, and should be positioned so that they are damaged by doors, heavy equipment and foot or vehicle traffic.

If your shoot requires very long cables, you can connect 2 camera cables together for runs of up to 400’ (2 x 200’).

1) Choose a cable length, and the locate which end goes at the camera. The camera end has a narrower plug than the end which connects at the Control Room equipment.

2) Remove the cap by pulling back on the knurled ring on the cable. Keep the caps on when the cable is not plugged into the camera to avoid dirt and moisture.

Attach the Camera Cables:

3) Locate the Camera Cable connection on the back of the camera. Note that it also has a rubber plug to keep the end of the connections dry and clean.

4) Line-up the red dot on the end of the cable with the red dot on the connection on the camera. Push the cable end firmly into the jack until the red line around the plug is no longer showing.

Check the Filter Wheel:

5) The camera has a set of filters on a wheel at the back of the lens. Turn the wheel to rotate a filter in position to accommodate various lighting conditions:

   (1) Clear - Use for most indoor shoots.
   (2) Cross - Creates “star” effect around bright points of light.
   (3) 1/8 ND - Use for moderately bright when shooting outdoors.
   (4) 1/64 ND - Use for shooting in very bright, direct sunlight.

All the cameras should be set to the same filter setting. Ask your Producer.
Control Room Set-Up: Physical Layout

The “control room” (switcher, audio mixer, video recorder) should be placed in a separate room from the event being recorded to improve crew communication, and to avoid creating a distraction for the audience watching the event.

The room used for the control room should:
1) Close enough to the area where the cameras are placed to be reached by the available cables (3 x 100’ and 3 x 200’).
2) Contain a power outlet (standard household outlets), not shared by other equipment such as ovens, refrigerators, air conditioners, lighting consoles, etc.
3) Be fairly quiet, separated from the sound of the event.
4) Allow running cables to cameras that avoid high traffic areas.

Unpack the Pieces:
To create a comfortable working environment, you'll want to set up some of the gear on a table. The table should be sturdy, to avoid damage to Mini-Mobile components.
1) Remove the front and back covers of the CCU case, and Tricaster unit. These units should sit on the floor, not the table.
2) Unpack the “Test Monitor” and place it on top of the CCU case.
3) Unpack the Control Surface, keyboard, mouse, audio mixer, and 2 computer monitors and place them on the table.

One option for setting-up the equipment is shown in the drawing below.
Control Room Set-Up: The Wiring

One the Control Room equipment is unpacked, you can begin connecting all the cables between the various components. It makes sense to do all of a particular step (eg - connecting the power cables) so that you don't overlook anything.

**Plug-in All the Power:**
Connect the power cables for the Tricaster Unit and CCU case (one power cable for each box), the 2 computer monitors (Interface and Multi-view), Test Monitor, and Audio Mixer. You will need to check-out a “Power Strip” for this purpose.

**Connect the Cameras:**
All 4 of the camera cables you connected earlier need to be connected to the “Camera Control Units” (CCU) in the large rolling case. Remember, each camera and each CCU is numbered, and you should plug Camera 1 into CCU 1, Camera 2 into CCU 2, etc.

1) Line-up the red dot on the camera cable with the red dot on the CCU connector, and then gently but firmly push the camera cable onto the connector.

At this end of the camera cable, the connector on the cable is larger than the connector on the CCU, and slips over it. Repeat for each of the 4 camera cables.

**Please DO NOT disconnect any of the other cables on the backs of the CCUs!**

2) To DISCONNECT a camera cable, simultaneously push-in on the ring on the CCU connector, and pull out on the camera cable. Pull on the metal connector, not on the cable.
Control Room Set-Up: The Wiring

Next, you’ll need to connect several cables between the Tricaster Unit and the CCU Case. These wires will carry the cameras video from the CCUs to the Switcher and Recorder in the Tricaster Unit. The 5 cables are joined together in a bundle.

**Connect the Cameras to the Switcher:**

1) Locate the cable marked “CAMERA 1” and connect it to the connector marked “CAM 1” on the back of the CCU Case. Repeat for each of the other 3 cameras.

2) Connect the larger 5-pin connector marked “TALLY” to the connector on the CCU case.

3) Now, connect the other end of those 5 cables to the similarly labeled connections on the lower part of the back of the Tricaster Unit.

**Please DO NOT Disconnect any of the cables on the back of the Tricaster Unit!**
Control Room Set-Up: More Wiring

The final few connections before powering-up the system involve connecting the 2 computer monitors (Interface and Multiview), the “Control Surface” (switcher) and attaching the keyboard and mouse.

Connect the Interface and Multiview Monitors:

1) Connect the DVI cables to the backs of the 2 computer monitors.

2) Connect one of the two cables to the connection on the back of the Tricaster labeled “MULTIVIEW”. Connect the second DVI cable to the connection labeled “INTERFACE”. Make sure the cable is seated firmly in the connection.

3) Connect the USB cable from the Control Surface, Mouse, and Keyboard to any of the 4 USB ports.
Control Room Set-Up: Starting the System

Now, you’re ready to power-up the system. Besides the Tricaster Unit and CCU Case, you’ll also need to turn on the power switches on the 2 computer monitors, the Test Monitor, and the Audio Mixer. The Tricaster is powered via an Uninterruptible Power Supply (UPS), that protects the device from surges or disruptions in power.

**Power On the Cameras:**

1) Switch on the Main Power Switch on each of the 4 CCUs. The controller units at the top should light in a few moments.

2) Push and hold the ON TEST button on the UPS. The unit should beep and the ONLINE light will flash for a few seconds, then light steadily.

3) Turn the latch to open the front door of the Tricaster. Push and hold the main POWER button for a few moments. The lights below the switch will flash as the system “boots”.

4) Power on the Test Monitor Router (more on this later).
Control Room Operation: Starting a “Session”

The Tricaster saves all of the aspects of a production as a “Session”. The session remembers any configuration of cameras you’ve done, graphics you’ve created, pre-recorded videos you use as a show open or roll-in, and any customized effects you use. That way, if you do similar shows on different days, you don’t have to reset each element each time.

**Creating a Session:**

1) **Choose NEW.** When you first power up the Tricaster, you’ll see the “HOME” screen. Here you can create a new session, or open one you’ve created previously. If you’re just getting started with the system, or shooting a show you haven’t done before, click on the NEW button.

2) **Give it a Name.** If you’re creating a new session, use the mouse to click into the “Enter Session Name” box, and then type what you’d like to call your show. Make it distinctive to you (not “My Show”).

3) **Select Where to Save.** Under the “Volume” heading, click the arrow button to select the option of which drive (D, E, F, G) to use to save your session. Drive D is the default.

4) **Choose Your Format.** Under “Video Standard” always check the NTSC option, and for the “Resolution” options, select 1080i for most applications.

5) **Let’s Go!** Click the START SESSION button to begin setting up your program.
The Tricaster: A Quick Tour of the Interface

The Tricaster combines several production tools into one package:

Switcher. The most obvious function of the system lets you see, select, and switch between each of the 4 cameras (as well as other sources you may add).

Video Recorder. The Tricaster records your HD video to removable hard drives, and can even record several feeds at once. For example, you can record the switched program, and also simultaneously record 1 or 2 of your cameras for editing “fixes” later.

Character Generator. The Tricaster includes tools for creating title pages, credit rolls and crawls. You can also import custom logos and other images for display in your programs.

Video Player. You can import video clips for playback during your program. The “DDRs” can play pre-produced video clips for show opens or break segments.

1) Source Monitors. These small screens display all of the cameras, DDR video players, Network sources, and currently selected Still or Title clips available to show the viewer.

2) Program and Preview. These larger screens show the source currently selected to be recorded (Program), and the source “cued-up” to switch to next (Preview).

3) Switcher. Each button on the long rows represents one of the sources displayed in the Source Monitor section. One row selects the PROGRAM and another selects PREVIEW. Controls in the middle create transitions between sources, and controls on the right side let you superimpose titles over video.

This is a “virtual” representation of the CONTROL SURFACE we’ll use instead.

4) Element Bins. Store and access items like graphics and pre-produced video clips that you can display in your program.
A Closer Look at the Interface: Sources

The “Source Monitors” that fill the upper left part of the screen can be configured in several different ways to meet the needs of your production.

1) **Display Tabs.** The tabs at the top of the section let you select which of the source monitors are shown. Use the mouse to click one of the four tabs:

   - **ALL MONITORS** - Displays up to 8 cameras, 2 “network connections” (computer displays), 2 DDR video players, and items selected in the “Still” and “Title” bins.
   - **EXTERNAL MONITORS** - Displays only externally connected sources, like cameras.
   - **INTERNAL MONITORS** - Shows everything but cameras, including DDRs, networked computers, Stills and Titles.
   - **SCOPES** - Displays signal test equipment call Waveform and Vectorscope.

2) **Camera Monitors.** Each of the 4 cameras you connected previously should show up on their respectively numbered screens. The Tricaster can take up to 8 cameras.

3) **Source Name Bars.** The colored bar just above each monitor image will change colors as you perform various actions. Any source which is currently selected as PROGRAM will display the bar in RED, while any source on PREVIEW will show as GREEN.

4) **Source Adjustment Controls.** The right side of the bar provides access to controls for making adjustments to the “look” of the video, including position, color, cropping, resizing, and “green screen” effects. Click the mouse on a control to access.

5) **Player Controls.** The “Internal Sources” such as DDRs, Stills, and Titles will also display buttons to let you “Play” the video to preview it before using.

You’ll see the 🔄 button in many places on the INTERFACE screen. It means that you can mouse click to access a control panel to adjust that particular function.
The Interface: Program/Preview and Bins

The larger monitors in the upper right part of the screen let you see your primary recording (PROGRAM), and what is cued-up to switch to next.

1) **Program.** Whatever you see here is the source being sent to the primary recording. As you switch from camera to camera, you'll see the source change accordingly. Note that the Bar at the top of the window is RED; the corresponding source monitor will be red while it is selected as Program.

2) **Preview.** Displays what will become PROGRAM if you execute a transition; Program and Preview sources will swap places when you make a switch. The bar above PREVIEW is GREEN; the corresponding source monitor will be green while it is selected as Preview.

3) **Function Controls.** Note that these two screens also have the controls at the upper right of each screen. These adjust various aspects of how the image is displayed.

4) **Element Bins.** The two boxes that fill the lower third of the screen (below) give access to titles, logos, still images, and video clips that you can display in your program. Mouse click on any of the TABS at the top of the Bins to select different tools:

   - **DDR 1 and 2** - Can hold video clips you import to the Tricaster.
   - **TITLE** - Can hold Title graphics created in the Tricasters graphics program (“Live Text”), as well as graphics imported from other programs, and still images.
   - **STILL** - Can hold all of the same elements as the TITLE bin.
   - **EXTERNAL/INTERNAL AUDIO & SOUND** - Provides access to controls to adjust volume and other aspects of DDR clips, as well as Microphones plugged-in to the Tricaster.
Tricaster Operation: The Switcher

The Mini-Mobile essentially comes with 2 switchers; the “virtual” one that appears on the Interface screen and can be used with just the mouse, and the physical “Control Surface” that has actual buttons and knobs. You’ll do most of your switching using the Control Surface, using the Interface screen mainly for seeing details like which DDR clip is selected to use, which title is cued to display, and what kind of transition is selected for the next camera-to-camera switch.

A Quick Look at the Control Surface (“Switcher”):
The layout of the switcher can be a little overwhelming at first. It’s a little easier to understand if you divide the controls into sections that perform related kinds of functions:

1) **Program**. One of the two long rows of buttons at the bottom of the switcher, PROGRAM lets you select which of the video “sources” (cameras, DDRs, Stills, Titles) you want to record on your primary recording. Each button is labeled to indicate what source is connected to it. When you push any button, it will light, and that source becomes Program.

2) **Preview**. This row is laid-out just like the Program row. Any button you push here will light and become selected as the PREVIEW source.

3) **Transition Controls**. This section lets you create transitions between the sources selected as PROGRAM and PREVIEW. Here you can pick the type of transition that will occur (an instant CUT, a gradual FADE, or more elaborate transitions), and how fast the transition will happen. The section also includes controls to let you superimpose titles or logos over cameras, DDR clips, or still images.

4) **Utility**. Selects what source will be “superimposed” when using the DSK buttons in the Transition Control section.

Advanced Controls Sections:

5) **DDR Player Controls**. This section lets you select and play DDR clips, as well as select which clip to play, and whether it will play once or repeat over and over.

6) **Positioner**. The “joystick” buttons here allow you to resize, crop, and move any source.

7) **Mix/Effects Controls**. This “swicher-within-a-switcher” lets you create advanced effects such as “green screens”, split-screen displays, and even “virtual sets”.
The basic operation of the switcher mainly uses the controls on the lower third of the unit. Below is a simple step-by-step guide to doing basic switching operations. You’ll also want to look at the switcher part of the Interface Monitor to select from available options.

1) **Select a Program Source.** Push the button marked “1” on the Program Row. You should see the button light, and the picture from Camera 1 should appear on the Program Monitor. The corresponding button on the virtual switcher will also light.

2) **Select a Preview Source.** Select the “2” button on the Preview Row. The button will light, and Camera 2 will appear on the Preview Monitor screen.

3) **Make a “Cut”**. The most basic kind of transition, the CUT instantly swaps the Program and Preview sources. To execute it, push the TAKE button, in the TRANSITION area.

4) **Make a “Dissolve”**. Press the FADE button in the TRANSITION. Then, push the AUTO button to actually make the transition. Note that the 2 cameras blend together for a moment as the transition happens.

5) **Adjust the Speed**. Turn the knob labeled “RATE” in the Transition section. As you turn the knob, look at the lower right side of the Interface screen. You’ll see the number changing. This is the speed of the transition when you push the AUTO button, in “frames” (30 frames per sec).

6) **Even Fancier Transitions**. The third way or making a transition actually has dozens of options. Select the button labeled “TRANS”. Push the AUTO button, and watch the transition on the Program screen. Don’t like that one? Turn the “SELECT” knob, to move the highlight box from icon to icon. Each is a different type of transition, and each can be changed to a different option if you wish.

7) **Manual Transitions**. Any transitions you make with the AUTO button can also be made by moving the “T-Bar” at whatever speed you desire.
**Tricaster Operation: Adding Graphics**

One advantage of a mobile system is that you can minimize the need for doing additional work on the video you shoot afterwards. If you plan carefully, you can create a program on-site that needs almost no additional work. For example, you can add titles and “roll-in” video clips as you shoot, rather than needing to add them later in editing.

1) **Select a Program Source.** This will be the source which appears “behind” the superimposed title.

2) **Choose a Graphic.** Mouse click the “Title Tab” in the Bin Area, and click any “thumbnail” in the bin.

3) **Set-Up a DSK.** The DSK controls create a “key” effect, in which part of one image (a title) is superimposed over another (a camera). First, push the button labeled DSK 2 in the “Utility Bus Delegate” section just above the Program row.

4) **Assign TITLE to the DSK.** Push the button labeled “TITLE” on the “UTILITY” row, directly above the Program row. This tells the switcher that when you activate a DSK 2 effect, it should use the title clip currently selected in the TITLE bin to display.

5) **Display the Graphic.** Push the “DSK TAKE” button in the Transition section (near the T-Bar). The graphic will CUT onto the Program Monitor. Push again to make it disappear.

6) **Fade in the Graphic.** You can also fade the title on screen. First, push the DSK 2 button in the Transition section. Then, push the FADE button just below it. To display the title push the DSK 2 AUTO button.

7) **Adjust the Speed.** With DSK 2 still selected, turn the RATE knob in the Transition section. Now, it is assigned to adjust the rate of the DSK 2 fade. Look at the DSK 2 area on the Interface screen to see the time (in frames again. 30 = 1 second)

After you set-up the DSK, be sure to re-select the BKGD button in the Transition DELEGATE area. The switcher will remember the DSK settings and rate that you assigned.
Camera Operation: Composition

Composition and Framing
While the terminology may change a bit from Director to Director, here are some common names for shots, and tips to help you compose a pleasing picture.

**Extreme Close-Up**
A shot which is so “tight” that you can’t fit the entire head into the frame. Adjust zoom and tilt so that the top of the frame cuts across at mid-forehead, and the bottom is a few inches below the chin.

This shot is used when the Director wants the viewer to be able to experience the emotions of the subject along with him.

The shot is not very flattering, and not used often.

**Close-Up**
A well-framed Close-Up leaves a small amount of space between the top of the subject’s head and the top of the screen. This space is called **Headroom**.

The bottom of the picture should be a few inches below the tops of the subject’s shoulders. Avoid cutting-off the subject right at the base of the neck.

Also, **center** subjects from left-to-right on the screen.

**Medium Close-Up**
A little wider than the Close-Up, this shot is used frequently. Because it’s wider, it is easier to keep the subject “in frame” when he leans or moves, and focus is less critical on a wider shot.

The shot should have **headroom** at the top of frame.

The bottom of the frame cuts the subject somewhere between the chest and belly button.

**Lead Room / Nose Room**
When shooting a subject from the side, whether he is completely or only partially in profile, don’t center the head between the left and right edges of the frame.

Instead, leave a little more space between the subject’s nose and the side of the frame than behind the subject’s head.

This space, called “Lead Room” or “Nose Room” will usually place the subject’s nose at about the center of the screen, from the left to right sides.
Camera Operation: An Introduction

The Mini-mobile is equipped with 4 cameras, which will be placed to provide one good overall view of the scene, and angles for close-up views of the action. Each camera is equipped with an intercom headphone/microphone so that the crew members may communicate.

Operating a mobile system camera is very different than shooting with a single camcorder:

1) **Teamwork.** Each of the 4 camera operators must work as part of a team. Instead of trying to cover all of the action, each camera will be assigned to cover a specific part of the scene.

2) **Remote Controls.** The camera operator need only worry about pleasing composition of shots, sharp focus on subjects, and the cameras “Zoom” settings. Most of the other settings on the camera are remotely adjusted from the Control Room.

3) **“Hot” or not.** Only 1 of the 3 cameras is being seen at any given moment. This allows cameras which are not currently “hot” to move to different subjects, or to change the composition of a shot to provide the viewer with more variety.

Some Basic Terminology:

1) **Tilt.** Up or down movement of the lens. Tilting the lens up moves the image on-screen lower in the frame. Directors may ask a camera operator to “tilt up” or “tilt down” to adjust their framing of the subject.

2) **Pan.** Left or right lens movement. As with tilt, Directors may ask a camera operator to “pan left” or “pan right” to adjust composition of a shot, or to follow movement by a subject.

3) **Zoom.** Simulates movement toward or away from a subject by magnifying the image. A Director may ask you to “zoom -in” if she wants a closer view of the subject, or “zoom out” to see a wider view of the scene.

4) **Focus.** A control of the lens which sharpens the image. Focus changes as the distance from the camera to the subject changes. If you move your camera, or move to a different subject, you may need to re-focus the camera.

5) **Pre-Focus.** A technique for achieving sharp focus. The camera operator first zooms -in as close as possible to the subject, then turns the focus control until the image is clear. Once focused, the operator may zoom-out to the desired framing of the subject.

6) **Dolly.** Cameras may be fitted with “Dolly wheels” to allow the camera to be moved easily. The term “Dolly” is used to describe movement of the entire camera toward the subject or away from the subject. The Director may ask the camera operator to “dolly in” or “dolly back”.

7) **Truck.** Movement of the entire camera to the left or right. For example, if your shot is blocked by an object, or your shot is at an odd angle, the Director may ask you to “truck right” or “truck left” to improve the shot. The direction is left or right from the position of the camera operator, not the talent.