DOWNLOAD PDF STUDIO AND CAMCORDER TELEVISION PRODUCTION

Chapter 1 : Blackmagic Studio Camera | Blackmagic Design

Studio and Camcorder Television Production is an up-to-the-minute, start-to-finish course in the skills needed to produce today's TV shows-and tomorrow's.

Twitter Studio Camera Operator The production process for many television programs is quite different from film, and the same is true for the work of a camera operator. Duties Studio camera operators control cameras mounted on pedestals that typically remain in fixed positions. These technicians work on sports television, news broadcasts, game shows, and similar programs that are recorded in a television studio. Studio camera operators, in what is called a multi-camera setup, record some sitcoms; this is where three or four stationary cameras are positioned across the front of the set to capture different angles, as well as wide shots and close-ups. Examples of multi-camera sitcoms include Seinfeld and Friends. In the pre-show rehearsal for a broadcast, a studio director and assistant director give instruction to the studio camera operators concerning the shots and angles each technician should capture. In scripted television, like a sitcom, each operator will have an assigned track based on the script and the position of the camera. Live broadcasts, like news programs, talk shows, and game shows, do have a script, but may follow a rougher outline that allows for live switching between camera feeds, depending on the changing circumstances of the program. Studio camera operators are responsible for ensuring that their equipment is in proper working order before a broadcast or taped session and that they are familiar with their show track. At all times, these individuals must be attentive to the cues from the director and to the action on set. In live television production, it is especially important to always be cognizant of what is happening on set, so as to be prepared to immediately respond to pick-up shots as ordered. Though most studio camerapersons will not be required to repair gear, it is useful to be trained in troubleshooting malfunctions to the component level. Specifically, technicians must be experienced in the use of studio cameras and must understand the method of multi-camera recording. Courses and degree programs focused on broadcast television or new programming are also beneficial. All camera operators should be knowledgeable about the use of focal length, lighting for film and video, and the prevailing wisdom on how to properly frame shotsâ€”there are several different standard shots that a cameraperson is expected to master. What to Expect One benefit to operating a stationary camera on a pedestal is that the technician is not burdened by the weight of a handheld camera usually riding on the shoulder , and there is little need for concern about a shaky picture. However, even with weight balancing, tilting, and panning the camera does require strength. After several hours at the controls, muscle fatigue does set it, and operating a studio camera can become very uncomfortable. Like a spotlight, small movements by the operator cause exponentially larger shifts of picture, therefore operators must get used to making minute adjustments, using a light touch. Operating a camera takes practice and finesse. Employment prospects include work with television production companies that produce game shows, talk shows, or sitcoms, as well as local and national broadcast news stations. For programs or series that run on a regular, long-term basis, employment is usually full-time and permanent. Those that run temporarily or on a limited basis tend to hire freelancers on contract for a specified period.

Chapter 2 : StudioBinder | TV Production Software Made Modern.

Studio and Camcorder Television Production is an up-to-the-minute, start-to-finish course in the skills needed to produce today's TV shows-and tomorrow's. A comprehensive, up-to-the-minute course in TV production.

In this article, I hope that I can answer the rest of the question of what it will take for you to build your own TV studio around Blackmagic Design hardware. The costs will vary depending on some of the choices you make, but the price is still incredibly low compared to any other options available. I have put together these Blackmagic-centered studios for several of my clients now, and they are all extremely happy with the results. Blackmagic Design has recently released the less expensive Micro Studio Camera 4K, but this camera requires a viewfinder, and in my opinion, will not readily meet the needs of a company that wants to put together a conventional 3 or 4 camera studio with camera operators at each camera. The other critical item to purchase is a lens for this camera. To be clear, this camera does not ship with a lens, but it accepts any micro four thirds lens. Most people ask the same question. Zuiko Digital ED lenses. These include a tripod, a panhead, and a mounting plate for the camera that goes on the panhead. Blackmagic Design does not make these items, and the options for these from other manufacturers are beyond the scope of my knowledge. Because camera operators need to talk to directors, they need a set of headphones with a built-in microphone. Blackmagic uses aviation-style headsets for their products, which are not readily available from video mail order companies. As you can readily see, if you need 3 or 4 of these studio cameras, then you need 3 or 4 of these headsets, 3 or 4 lenses, and 3 or 4 of tripod systems. So the cost adds up quickly. All the Blackmagic Studio Cameras connect back to the Studio Converter, so that the director can speak to the camera operators. This initially may seem expensive for just an intercom base station, but it does much more than that. If you use fiber optic cables to connect the Studio Cameras to the Studio Converter, you not only have intercom, but the HD-SDI video signal, as well as two channels of analog audio that are given to you standard on each Studio Camera. This means that you do not have to run out separate HD-SDI coax cables, audio snakes, and intercom cables to every camera. Everything travels along one fiber optic cable! If you are worried about the fiber cables getting damaged, you can purchase Tactical Fiber cable from companies like Camplex, or directly from Tactical Fiber Systems. This will not only save you an enormous money on the amount of long cables you have to purchase, but reduce your labor costs on having to run extensive amounts of cable out to each camera when the cameras get set up in your studio. Tally light function is also included in this, and the tally command travels along the same fiber optic cable. And for studios configured as flypacks for deployment in remote locations, having a single cable makes a huge difference not just for set-up, but for packing, unpacking, and operation. We now have to plug them into the video switcher. There are many models of this switcher, and there can be a temptation to rush to specify the inexpensive ATEM Television Studio. The control panel for the switcher is simply software running on a MacBook Pro. All cameras appear instantly on the multiviewer monitor that is connected to the ATEM switcher. You will notice that I have not specified or discussed microphones for your talent. This is beyond the scope of this article. Microphones can range anywhere from 20 dollars apiece to thousands of dollars each. They can be wired, or they can be wireless. There are countless options available to you. You can now use very short XLR cables to go from the Studio Converter to an inexpensive audio mixer like a Mackie or a Behringer to control your audio levels. And when your audio mixer adjusts the levels to their liking, they can send the output of this mixer back into the ATEM Production Studio switcher analog XLR inputs, to embed the analog audio signal back into the video. From my experience, most audio people like having an independent audio mixer to adjust the audio levels, instead of relying on the internal digital mixer of the switcher. I am just trying to specify something inexpensive, readily available, and that I know will work. We need to record our show somehow. Your needs may require you to have iso recordings for every one of your cameras. Shown here, the HyperDeck Studio 12G: Audio adds even more variables to the recording. Some may want to record isolated audio tracks on each recorder. If this is the case, you would choose the more expensive HyperDeck Studio Pro, which offers independent analog XLR audio inputs, giving you more flexibility. You may also have a demand where you want to choose what sources are going to each

recorder, and changing these requirements during the show. There are infinite options available to you. Using the Resolve Live feature, you can grade live from the camera, and your color grader can grade iso shots that they can choose themselves, or the line feed. The grades can be saved and relinked to the camera files for post â€" but the grades can of course be applied to the camera output in real time, which is why including a copy of Resolve with every studio camera makes so much sense. The easiest way to access Resolve Live is to hook up a simple inexpensive Ethernet switch, like a Netgear GS switch. You would connect your ATEM switcher to this switch, as well as all of your computers. Every computer would run the ATEM software. One computer could be used for switching the show, one computer could be used for color grading the cameras, one computer could be used for adjusting audio levels, and one computer could be used for creating graphics and loading the media players of the ATEM. They can use a computer running the ATEM switcher to switch the AUX buss for the monitor feed, so they can see cameras independently of what the person cutting the show is doing. Or if you got one of those small Blackmagic routers, your color grader can switch the cameras using the router to feed the color grading monitor. I have found that the most efficient way to do this is by getting yet another computer like a Mac Mini , and plugging in a Blackmagic UltraStudio product all of them work and running a free copy of LiveStream ProCast, which supports all Blackmagic hardware. Of course, you need to setup a free LiveStream account to accomplish this. You may also want to put your show up on YouTube or Vimeo, and need a quick way to encode your video production to the h. Another Mac Mini and the Blackmagic H. I am building studios exactly this way for many clients, right now. The quality of the Blackmagic hardware is fantastic. The image quality is wonderful. Most jobs are not The Super Bowl. Simple corporate training jobs, You Tube Video shows, streaming for church services, etc. But they really are also ideal for people who could never possibly have afforded to build a truly complete, affordable broadcast facility or flypack, even in 4K. It is not only possible. It is happening with clients like mine, right now. This one from Omni Productions in Orlando is loaded and ready: This is not an unfair question though. No other switcher company allows you to do this. You can get an integrated character generator from "them," or you can bring along your MacBook Pro with Photoshop on it, and simply plug it into the Blackmagic network, and go to work. Is that really a disadvantage? None of the linear video facilities took any of this seriously. This was the beginning of the end for the linear facilities. Blackmagic is unstoppable at this point. There are lots of things to consider, and lots of things to purchase. And I have not even covered all of them in this brief article. In addition to microphones, cables, tripods, panheads, etc. For example â€" everything needs power. Do you have good battery UPS backup systems for all of your equipment? Do you have enough AC power strips to plug everything in? Do you need a desk to hold all of this equipment? What about a wall mount for the multiview monitor? Or perhaps this is a mobile system â€" do you need road cases to rackmount all of this equipment? And do you need cables to hold your fragile cameras and lenses? And when you travel, are you considering a separate case for all of your audio cables, video cables, and fragile fiber optic cables? I can assure you that all of these things add up very quickly. Blackmagic Design has made it possible for most people to finally have their own production facility, with a large gamut of production equipment at very reasonable prices. Omni Productions is a full service digital media production company, also in Orlando.

Chapter 3 : Studio and Camcorder Television Production

For various TV production courses such as Educational TV, Instructional TV, Video Production, Desktop Video Production, Industrial Video Production, Video and Multimedia Production. The "lite" version of Utz's popular Today's Video, 3/E (PH), this hands-on introduction to television production is oriented to the skills required in the real.

Set-up a simple TV-video studio in your house or office and dazzle your fans with videos that show off your products or services. A studio allows you to create lots of videos quickly. Set up your own shopping network. Seriously, you could with a simple, but well organized video production studio. A couple of people sitting on a simple set, holding up products, and chit-chatting non-stop. How easy is that? Actually pretty darn easy. Setting up a studio allows you to crank out lots of videos quickly. Studio production method uses multiple cameras and microphones at once. This saves TONS of time in editing. Post production editing is incredibly time consuming and studio production eliminates it. If you make minor mistakes, you keep going, just like you would if it were live. Live-to-tape is a great method because it is fast and inexpensive. All studio production, even if you do edit it some later, is MUCH faster, and therefore cheaper than standard field production, which is one-camera technique and post-production editing. Today, an entire video studio can be run using one high-powered computer. The process can be referred to as desktop video production and the possibilities are incredible! In the past, studios have had to use multiple computers and people running them in order to produce content of decent quality, not only that but it would have needed to be specialised equipment too! Nowadays people using desktop video production can use home use equipment. However, there is still a need for rugged keyboards and mice in places such as supermarkets or factories. If you are interested, you can look for ruggedised industrial pointing devices today here. Here is a video tutorial demonstrating such a system. This video profiles a small country government TV production department that uses a NewTek VT5 to create finished programs that rival what it used to require a much larger operation to produce. I used to work there! The small crew of high school video production students is able to produce broadcast quality shows using the VT5. Without a system like the VT5, such production would simply be out of reach for this small school system crew. Below the video, there is a long post and many comments about more tradition video studios. These studios require a multitude of components, such as a video switcher, an audio board,and video record devices. Traditional Video Studio Set-up, Equipment and Operation Even though the methods themselves are very different, much of the equipment needed to set up a studio is the exact same needed for field production, you just need more of it. Much can be the same. Think of all the great exercise! Typically, a TV studio has at least three cameras and some way to switch between the cameras live as the show is happening. Editing live is an incredible time-saver. Using multiple cameras and a video switcher or computer software to edit your show on the fly was originally invented in Hollywood when TV came along as a cheaper and faster way to produce shows. Movies had traditionally been made using one-camera technique and still are today. If you are going for meticulous high art, one-camera technique allows you more precise control. Studio technique is primarily done for budgetary reasons. Although many variations are possible, every video studio follows this basic layout. The audio and video switchers, the heart of any video production studio, are both in the control room along with lots of monitors, all the graphics generators and other various pieces of equipment. As computers get faster and more powerful, they are replacing video and audio switchers. If you are a lower budget operation, the biggest concern you should have is locating in a quiet place where you have as much room as possible. You also need to have control over the lighting and sound. Rooms that are built for the purpose of a video studio would be built without windows to maximize lighting control. Usually, a video studio will have lights mounted on a heavy metal ceiling grid. If you do not have a full grid, you can hang lights to some types of ceilings using c-clamp-like mounts. Lights hung from the ceiling give an angle to the light that seems natural. Plus, hanging lights from the ceiling keeps them out of the way. Run your cords along the ceiling and then tack them down the wall. You can use portables. The director or technical director operates the video switcher, going from shot to shot when appropriate. The director also adds graphics when appropriate. All video sources are plugged into the video switcher and are under control of the director. A large operation will

have separate components and operators for graphics, pre-recorded tapes and other sources of video such as satellites. A small operation can get by with one director and all the cameras locked down on tripods. Today, powerful computers can take the place of all the video and audio switchers and graphics components, which makes it even easier to set up a portable studio. You can do it either way. Go for solid colors that blend. Making your videos in a studio will save tons of time. Switching a show live saves hours and hours of editing time. You could have different priority audio going to each camera but it would be easier to mix the priority audio and input into one of the cameras. But you do not have to use that audio in the final mix. Synch up all the video during editing and choose the best shot. You can do this easily by stacking the synched video lines on top of each other. Then just chop out the video shots you do not want, leaving whichever one of the three is best on top. If you want even more detailed information on the equipment you need to set up a functional video studio, see this post. It contains an even greater amount of information specifically about the equipment needed than this post. Thanks for reading Video Production Tips. They carry absolutely everything and have great prices too. Lorraine Grula Internet Video Gal.

Chapter 4 : Professional video camera - Wikipedia

Buy Television Studio & EFP Cameras from top brands like Sony, Hitachi, Blackmagic Design and Panasonic. Go to B&H for amazing prices and service.

The Studio Production - Rehearsals Although there are many well-established methods of preparing and recording television productions, the method that you should choose depends on many factors. Not only on the type of show, but whether it is to be live or recorded, the facilities, and the amount of time and the size of the budget available for the production. There are differences between the way local productions and network productions work in the studio. However, in this article, the information is condensed to provide an overview of the subject. Unrehearsed Formats Every production benefits from a rehearsal before being recorded or going out live. But what do you do when the talent is going to arrive at the last minute, or even while you are live? If it is a live show with long prerecorded and edited packages, such as a magazine program, it may be possible to quickly review what will be happening. Otherwise, you must accept that the action will have to be live or recorded "raw. Consequently, even when it is not possible to rehearse the action beforehand, you can still prepare a setup that will work successfully when the talent does arrive. Interviews, for example, have regular plans so that you can quickly line up the appropriate chair positions and move the cameras into their positions. Crew members can be used as stand-ins while the lighting and sound arrangements are being checked. When the talent appears, you can quickly review the camera shots and adjust voice levels, makeup, and lighting. When the unrehearsed action is less defined-such as a late-arriving band-you have to rely on cameras arranged strategically in front and cross-shooting positions. Instead of cameras grabbing shots of whatever is near them, you can allocate cover shots long shots to one camera, and have another concentrate on close-ups of the instruments, while another shoots close-ups of individuals or small groups. Before the production begins, always explain to the performers the floor area limits within which they must work or their action may uncontrollably spread into areas that cannot be covered by the lighting or cameras. Production treatment is largely a matter of recognizing effective shots as they are offered by the cameras-taking care to dwell on any special features, such as action detail of hands playing a piano or grouping shots of a chorus. It is imperative that you practice as many elements of the production as possible before the actual camera rehearsal. The director and talent can discuss the various production options, making sure that the ideas work. This can be done in any room that has enough space to work through the material. Certainly, when it comes to the complexities of larger productions, preparatory work needs to be completed long before the camera rehearsals. Another rehearsal may even take place hours before the actual shoot time. This practice reduces the cost of the production by avoiding the need for a rental space. The director goes over the script, indicating specific points about style and presentation that will help familiarize the cast with their parts. They read their lines from the script, becoming more accustomed to the dialogue, the other actors, and their characterizations. Doors, windows, stairways, and so on are usually outlined. Stock rehearsal furniture substitutes for the actual studio items, and action props telephone, tableware, etc. Rehearsing in this mockup, actors become accustomed to the scale and features of their surroundings, with vertical poles or chairs marking the main limits of each setting. Rehearsing a scene at a time, the cast is able to learn their lines and practice their performance until it flows naturally and the show runs smoothly, finally ready for the actual camera rehearsal. The durations of segments are checked and adjusted. In calculating the overall timing, allowances are made for the time taken by later inserts such as prerecorded sequences. Studio Rehearsal Before the studio rehearsal, the stage crew, supervised by the set designer, erects and dresses the set. Lamps are rigged and adjusted under the guidance of the lighting director. Camera and sound equipment are then positioned. The performers arrive, seeing the set possibly for the first time. The studio rehearsal is ready to begin. Following are some of the options. The director is usually in the studio. The camera crew usually leaves their cameras alone and just looks at their script. The goal is to make sure that the corrections worked and that the timing is appropriate. Notes about issues are taken and then shared with everyone at the end of the rehearsal. Next month in Part Two:

Chapter 5 : Broadcast, Cinema & Pro Video | Panasonic North America - United States

Note: Citations are based on reference standards. However, formatting rules can vary widely between applications and fields of interest or study. The specific requirements or preferences of your reviewing publisher, classroom teacher, institution or organization should be applied.

Unlike most texts in the field, it includes both professional and consumer equipment production situations. Provides students with a solid foundation in the fundamentals shared by all levels of TV production and an appreciation of the finer points of each type, helping them to become well-rounded TV producers able to perform competently in any style, in any situation. Familiarizes students with the cutting-edge equipment and techniques, preparing them for the ever-faster pace of change in the industry. Helps students build confidence with simple successes before they tackle the complexities and nuances of a subject. Students teach and learn from their classmates after each rotation. Mini in-chapter reviews of key points. Those that are essential to master are marked with an asterisk. Reinforces retention of terminology commonly used in the profession. Provides a quick-reference for looking up the meaning of a word and at the same time locating the discussion topics associated with the term. The Studio Production Team. The Character Generator Operator. Audio, Video, Sync, and RF. Audio Plugs and Adapters. TV Cameras and Lenses. Controls on a Portable Color Camera. Camera Angles and Picture Composition. Dolly, Truck, and Arc. Basic Camera Angles and the Moods they Portray. Camera Placement and Backgrounds. Popular Alternatives to the Simple Shot. Creating Moods and Impressions with the Camera. The Kind of Light the Camera Needs. Existing Indoor Light Only. Lighting Several Areas at Once. Lighting for Chroma Key. Mood Lighting and Special Effects. How a Microphone Works. Balanced and Unbalanced Lines. Microphone Stands and Mounts. Choosing and Using the Proper Microphone for a Recording. One Person, One Microphone. Two People, One Microphone. Several People, Several Microphones. Banishing Unwanted Noise from a Recording. Inputs to the Mixer. Outputs from the Mixer. Stereo and Multichannel Mixers. Professional Audio Control Boards. Music Under, Sound Mix, Voiceover. Cueing a CD Player. Cueing a Reel-to-Reel Tape. Cueing a Phonograph Record. From CDs and Tapes. Recording Audio That is to be Edited. Music and Sound-Effects Libraries. Choosing a Digital Format. Getting the Best Audio. Camera Switching and Special Effects. Soft Key and Soft Wipe. Master Fade to Black. Semiprofessional Switchers and Segs.

Chapter 6 : Television studio - Wikipedia

Discover our new HDC camera range Our new family of live production system cameras, engineered by Sony to enable content creators to capture stunning 4K HDR and HD images. A new benchmark of performance & creativity.

Basic Camera Moves In Module 6, we introduced the basic camera moves. A lateral move rolling the camera to the left or right on the pedestal is trucking, as in "truck left" or "truck right. The photo on the right above shows a typical rocker switch next to a camera lens that controls the direction and speed of a zoom. Studio Camera Mounts In the studio the entire camera assembly is mounted on a pedestal or dolly shown here so that the operator can smoothly roll it around on the floor. The three wheels in the base of the pedestal can be turned using the steering ring. The camera is directly attached to a pan head, which enables the pan and tilt horizontal and vertical camera movements to be adjusted. Controls on the pan head allow the camera either to move freely, to be locked into position, or to offer controlled resistance to facilitate smooth pans and tilts. Although the camera may weigh more than pounds 45kg , internal counterweights allow an operator to easily raise and lower the camera when the telescoping column in the center is unlocked. Many TV production facilities now use robotic cameras that are remotely controlled from the TV control room. A simpler camera support is the collapsible dolly shown on the left. This type of mount is used for remote productions and in some small studios. Unlike the elaborate studio pedestal that can be smoothly rolled across a studio floor even while the camera is on the air , the wheels on small dollies are intended to move the camera from place to place between shots. Robotic Camera Mounts Camera operators have disappeared at many production facilities -- replaced by remotely controlled, robotic camera systems. From the TV control room, technicians can adjust the pan, tilt, zoom and focus, and even remotely dolly and truck these cameras around the studio. Although robotic cameras are not desirable for unpredictable or fast-moving subject matter, for programs such as newscasts and interviews where operating cameras can get pretty boring anyway they significantly reduce production expenses. You frequently see them in action swinging overhead at concerts and major events. The operator and controls for the jib are shown above on the right. Note the two video monitors one for camera output and one for program video and the heavy weights that help balance the weight of the camera and crane. A jib allows sweeping camera movements from ground level to nine meters thirty feet or more in the air. For more mobile camera work outside the studio, handheld camera supports allow significant mobility while still offering fairly steady camera shots. The camera is mounted on a flexible arm that uses a series of spring balances to hold its position. A camera operator can walk and even run and still get a reasonably steady shot. In addition to being costly, these units are heavy and require an experienced operator. With a bit of practice an operator can walk in front of or behind a moving subject without undue camera movement. Walking around with a full cup of coffee in your hand is good practice for using one of these. Camera Tracks For elaborate productions, installing camera tracks allows the camera to more smoothly follow talent and move through a scene. Although a camera operator can ride with the camera as shown below, some cameras are remotely controlled. Once the track is laid down and leveled the result can be smooth dollies and tracking shots. However, because of the set-up time involved, many directors of photography DPs prefer to simply go with hand-held camera shots. Drones, which appeared in different levels of sophistication from different manufacturers, can provide areal views of scenes which are impossible from the ground level. The initial wave of drones were unregulated and sometimes ran afoul of commercial, firefighting, and safety aircraft. This prompted laws backed by stiff penalties that limited when and where they could fly. One of the more popular drone systems shown here is made by Yuneec, which has numerous demonstration videos on their site and on YouTube. Most drones are "piloted" by "ground station remote controls, as shown below. The better drone systems also have object avoidance capabilities which keep them from bumping into things. All drones are battery operated. She was the only one in the group that understood it. She was offered a job right then.

Chapter 7 : Building a Broadcast Studio with Blackmagic Design : Blackmagic Design

The new Z-HD is a full HD progressive scan production and studio camera system. Utilizing HITACHI's new generation 2/3" CMOS image sensors, it easily adapts to a wide range of difficult LED lighting conditions.

History[edit] The earliest video cameras were mechanical flying-spot scanners which were in use in the s and s during the period of mechanical television. Improvements in video camera tubes in the s ushered in the era of electronic television. Earlier, cameras were very large devices, almost always in two sections. The camera section held the lens and tube pre-amplifiers and other necessary electronics, and was connected to a large diameter multicore cable to the remainder of the camera electronics, usually mounted in a separate room in the studio, or a remote truck. The camera head could not generate a video picture signal on its own. The video signal was output to the studio for switching and transmission. By the fifties, electronic miniaturization had progressed to the point where some monochrome cameras could operate stand alone and even be handheld. But the studio configuration remained, with the large cable bundle transmitting the signals back to the camera control unit CCU. Handheld color cameras did not come into general use until the early s - the first generation of cameras were split into a camera head unit the body of the camera, containing the lens and pickup tubes, and held on the shoulder or a body brace in front of the operator connected via a cable bundle to a backpack CCU. Typically, the two camera units would be carried by the camera operator, while a tape operator would carry the portable recorder. With the introduction of the RCA TK76 in , camera operators were finally able to carry on their shoulders a one piece camera containing all the electronics to output a broadcast quality composite video signal. A separate videotape recording unit was still required. Electronic news-gathering ENG cameras replaced the 16mm film cameras for TV news production from the s onwards because the cost of shooting on film was significantly more than shooting on a reusable tape. Portable video tape production also enabled much faster turnaround time for the quick completion of news stories, compared to the need to chemically process film before it could be shown or edited. However some news feature stories for weekly news magazine shows continued to use 16mm film cameras until the s. At first all these cameras used tube-based sensors, but charge-coupled device CCD imagers came on the scene in the mids, bringing numerous benefits. Early CCD cameras could not match the colour or resolution of their tube counterparts, but the benefits of CCD technology, such as introducing smaller and lightweight cameras, a better and more stable image that was not prone to image burn in or lag and no need for calibration meant development on CCD imagers quickly took off and, once rivaling and offering a superior image to a tube sensor, began displacing tube-based cameras - the latter of which were all but disused by the early s. Eventually, cameras with the recorder permanently mated to the camera head became the norm for ENG. In studio cameras, the camera electronics shrank, and CCD imagers replaced the pickup tubes. The thick multi-core cables connecting the camera head to the CCU were replaced in the late seventies with triax connections, a slender video cable that carried multiple video signals, intercom audio, and control circuits, and could be run for a mile or more. As the camera innards shrunk, the electronics no longer dictated the size of the enclosure, however the box shape remained, as it is necessary to hold the large studio lenses, teleprompters , electronic viewfinder EVF , and other paraphernalia needed for studio and sports production. Electronic Field Production cameras were often mounted in studio configurations inside a mounting cage. This cage supported the additional studio accessories. Though they delivered much better image quality, their overall operation was identical to their standard definition predecessors. New methods of recording for cameras were introduced to supplant video tape , tapeless cameras. Ikegami and Avid introduced EditCam in , based on interchangeable hard drives. Panasonic introduced P2 cameras. These recorded a DVCPro signal on interchangeable flash memory media. Eventually flash storage largely supplanted other forms of recording media. In s, major manufacturers like Sony, Philips introduced the digital professional video cameras. These cameras used CCD sensors and recorded video digitally on flash storage. These were followed by digital HDTV cameras. As digital technology improved and also due to digital television transition , digital professional video cameras have become dominant in television studios, ENG, EFP and even in other areas since s. A TK is simply a TK with a

portable camera control unit. In the arrival of the Vidicon camera tube made smaller cameras possible. Image Orthicon tubes were still used till the arrival of the Plumbicon. Ikegami introduced the first truly portable hand-held TV camera in Philips invented the Plumbicon pick up video camera tube in , that gave tube cameras a cleaner picture. This was the first major high-definition analog wideband videotape-to-film post production using a film recorder for film out. In the s, major manufacturers like Sony, Philips introduced the flash storage based digital television cameras. Since the s, these digital cameras have become most widely used of all other systems. Usage types[edit] Most professional cameras utilize an optical prism block directly behind the lens. This prism block a trichroic assembly comprising two dichroic prisms separates the image into the three primary colors , red, green, and blue, directing each color into a separate charge-coupled device CCD or Active pixel sensor CMOS image sensor mounted to the face of each prism. Some high-end consumer cameras also do this, producing a higher-resolution image, with better color fidelity than is normally possible with just a single video pickup. In both single sensor and triple sensor designs, the weak signal created by the sensors is amplified before being encoded into analog signals for use by the viewfinder and also encoded into digital signals for transmission and recording. The analog outputs were normally in the form of either a composite video signal, which combined the color and luminance information to a single output; or an R-Y B-Y Y component video output through three separate connectors. Studio cameras[edit] Studio camera with teleprompter Most television studio cameras stand on the floor , usually with pneumatic or hydraulic mechanisms called pedestals to adjust the height , and are usually on wheels. Any video camera when used along with other video cameras in a multiple-camera setup is controlled by a device known as CCU camera control unit , to which they are connected via a triax , fibre optic or the almost obsolete multicore cable. The CCU along with genlock and other equipment is installed in the production control room PCR often known as the gallery of the television studio. When used outside a formal television studio in outside broadcasting OB , they are often on tripods that may or may not have wheels depending on the model of the tripod. Initial models used analog technology, but are now obsolete, supplanted by digital models. Cameras can also be mounted on a tripod , a dolly or a crane , thus making the cameras much more versatile than previous generations of studio cameras. ENG cameras[edit] Sony camera head with Betacam SP dock recorder ENG electronic news gathering video cameras were originally designed for use by news camera operators. While they have some similarities to the smaller consumer camcorder , they differ in several regards: The camera mounts on tripods with Fluid heads and other supports with a quick release plate. They have interchangeable lenses. The lens is focused manually and directly, without intermediate servo controls. However the lens zoom and focus can be operated with remote controls with a television studio configuration operated by a camera control unit CCU. A rotating behind-the-lens filter wheel, for selecting an 85A and neutral density filters. All settings, white balance , focus , and iris can be manually adjusted, and automatics can be completely disabled. Professional BNC connectors for video out and genlock in. At least two XLR input connectors for audio are included. Direct slot-in for portable wireless microphones. Audio is adjusted manually, with easily accessed physical knobs. A complete time code section is available, allowing time presets; multiple-camera setups can be time code-synchronized or jam synced to a master clock. EFP cameras[edit] EFP camera operator at a baseball game Electronic field production cameras are similar to studio cameras in that they are used primarily in multiple camera switched configurations, but outside the studio environment, for concerts, sports and live news coverage of special events. These versatile cameras can be carried on the shoulder, or mounted on camera pedestals and cranes, with the large, very long focal length zoom lenses made for studio camera mounting. These cameras have no recording ability on their own, and transmit their signals back to the broadcast truck through a fiber optic, triax , radio frequency or the virtually obsolete multicore cable. Others[edit] A remote-controlled camera mounted on a miniature cable car for mobility Remote cameras are typically very small camera heads designed to be operated by remote control. Block cameras are so called because the camera head is a small block, often smaller than the lens itself. Some block cameras are completely self-contained, while others only contain the sensor block and its pre-amps, thus requiring connection to a separate camera control unit in order to operate. All the functions of the camera can be controlled from a distance, and often there is a facility for controlling the lens focus and zoom as well. These cameras are

mounted on pan and tilt heads, and may be placed in a stationary position, such as atop a pole or tower, in a corner of a broadcast booth, or behind a basketball hoop. They can also be placed on robotic dollies, at the end of camera booms and cranes, or "flown" in a cable supported harness, as shown in the illustration. Lipstick cameras are so called because the lens and sensor block combined are similar in size and appearance to a lipstick container. These are either hard mounted in a small location, such as a race car, or on the end of a boom pole. The sensor block and lens are separated from the rest of the camera electronics by a long thin multi conductor cable. The camera settings are manipulated from this box, while the lens settings are normally set when the camera is mounted in place.

Chapter 8 : Studio B Camera Rentals | SF Bay Area Video Cameras and Crews

A television studio, also called a television production studio, is an installation room in which video productions take place, either for the recording of live television to video tape, or for the acquisition of raw footage for post-production.

Chapter 9 : Television Studio & EFP Cameras | B&H Photo Video

Studio Production A s a first step in seeing how studio productions are done we need to take a closer look at the role and responsibilities of the key person in this process -- the director.