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Inventor(s)	Pittman; Matthew

Mobile Video Studio

Abstract

A mobile video studio with all the required components to produce high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others), including cameras, lights, tablet computers or displays, microphones, battery packs, dummy batteries, video capture cards, internet connectivity devices, speakers, a tripod, and brackets, heads, support and rigging to support all the above equipment in multiple configurations for multiple types of video output. The mobile video studio may be used remotely, without a local production crew, and in some embodiments, in combination with a floor grid. Remote video conferencing software may be utilized to enable a remote crew or collaborators to assist with production.
The mobile video studio fits in a shipping safe travel case configured specifically to safely fit each piece of equipment within a cushioned compartment. The travel case is safe to be shipped or carried on a commercial flight.

Inventors: **Pittman; Matthew (Missoula, MT)**

Applicant: **Pittman; Matthew** (Missoula, MT)

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Background/Summary

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] There is significant need for production of high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others) for use on the internet and TV, however the cost of the professional production team to make such videos is prohibitively high for many types of projects. The cost for a professional production team includes not only the personnel costs but may also require other significant expenses such as pre-production crew, software, logistics preparation, equipment expense, travel expenses such as transportation and accommodations, and locations. In the alternative, videos made by non-professionals, with single mobile phones or web cameras, without lighting and professional sound, are generally poor quality. There is a need for a mobile video studio that is portable and easy to set up for someone who is not a video production professional. This type of mobile studio should create high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others) and be remotely operable by professionals in another location. This mobile studio should be configurable to allow multiple camera, lighting, microphone and teleprompter setups that allow different types of video content to be captured. This type of mobile video studio should be able to be shipped to a remote location for use by a non-professional to create high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others).

[0002] The present invention relates to a mobile video studio that includes equipment for creating high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others), specifically camera(s), microphone(s), lights(s), tablet computer(s) and tripod/structural equipment to support the various pieces of equipment in various configurations ideal for use by a single person. This mobile studio setup is compact, portable and may be stored in an included case specially designed for the various pieces of equipment. This case may be shipped to remote locations allowing the mobile studio to be portable without a professional crew, lowering production cost significantly.

[0003] The mobile video studio of the present invention includes multiple cameras, lights, light diffusers, tablet computers, microphones and a configurable tripod. The mobile video studio also includes various heads, brackets and rigs that allow the cameras, lighting, microphones and tablet computers to be set in various configurations that allow the creation of various types of video content. Also included are battery packs, WiFi/internet connectivity devices and speakers. The mobile video studio may be controlled locally by the user or through the internet by a remote user. The mobile video studio enables high-quality video production without an expensive on-site crew. Additionally, the mobile video studio also allows for real-time audio and video feedback from remote crew members or participants. The mobile video studio allows remote production team members to attend the remote shoot in real-time without the time and financial cost of travel to the location.

SUMMARY OF THE INVENTION

[0004] The mobile video studio of the present invention includes all the required components to produce high-quality video content in any format, aspect ratio and resolution (Ultra high definition, high definition and others) without a professional crew and, if desired, from a remote location. The mobile video studio may comprise 1) one or more cameras, 2) one or more lights, with or without diffusers, 3) one or more tablet computers or displays, 4) one or more microphones, 5) one or more battery packs, 6) one or more internet connectivity devices, 7) one or more speakers, 8) a tripod, and 9) brackets, heads, support and rigging to support all the above equipment in multiple configurations for multiple types of video output.

[0005] All the equipment listed above fits in a shipping safe travel case configured specifically to safely fit each piece of equipment within a cushioned compartment. This travel case may be shipped through typical shipping carriers such as FedEx™, UPS™, USPS™, DHL™ or may be carried on as luggage on a commercial airline flight. Due to the construction and configuration of the case, the equipment contained within will be safe, even if the travel case is subjected to strong external forces such as being dropped, thrown or jostled.
[0006] The mobile video studio includes one or more tablet computers or other display devices that may be used for remote communication using video conferencing services such as Zoom™, Microsoft Teams™, WebEx™ or Slack™. These tablet computers May also be used as a teleprompter with text to be read by the video subject while on camera. The location and configuration of the tablet computers is optimized such that use as a teleprompter results in the subject facing the camera in a natural manner while still reading from the prompter.
[0007] The mobile video studio also includes one or more cameras and one or more lights that can be utilized in multiple configurations allowing various types of footage to be created. Further, one or more microphones may be used with the setup to capture broadcast-quality professional sound. Lastly, the studio may also include a speaker for sound from remote locations such as through video conferencing applications.
[0008] Lastly, the mobile video studio includes a tripod and multiple tripod heads, brackets and rigs that allow the studio to be used with the various cameras, lights, tablet computers, microphones and speakers included with the setup. The tripods and various supports may be assembled in configurations that support a single camera or multiple cameras, a single tablet or two tablets, or one or more lights.

Description

BRIEF DESCRIPTION OF THE DRAWINGS
[0009] FIG. **1** is a front view of mobile video studio with horizontal bracket installed and with two cameras, two lights, a tablet and microphones.
[0010] FIG. **2** is a front view of mobile video studio with battery installed.
[0011] FIG. **3** is a side view of mobile video studio with battery installed.
[0012] FIG. **4** is a rear view of mobile video studio with battery installed.
[0013] FIG. **5** is a front view of mobile video studio with one light installed.
[0014] FIG. **6** is a side view of mobile video studio with one light installed.
[0015] FIG. **7** is a front view of mobile video studio with two lights installed.
[0016] FIG. **8** is a side view of mobile video studio with two lights installed.
[0017] FIG. **9** is a front view of mobile video studio with one camera, a tablet, one light, two microphones and a speaker installed.
[0018] FIG. **10** is a side view of mobile video studio with one camera, a tablet, one light, a microphone and a speaker installed.
[0019] FIG. **11** is a rear view of mobile video studio with one camera, a tablet, one light, a microphone and a speaker installed.
[0020] FIG. **12** is a front view of mobile video with one camera in a vertical orientation, a tablet in a vertical orientation, one light, a microphone and a speaker installed.
[0021] FIG. **13** is a perspective view of mobile video studio with one camera, a tablet, one light, a microphone and a speaker installed.
[0022] FIG. **14** is a front view of mobile video studio with horizontal bracket, one camera, two lights, a microphone and a speaker installed.
[0023] FIG. **15** is a rear view of mobile video studio with horizontal bracket, one camera, two lights, a microphone and a speaker installed.

[0024] FIG. **16** is a front view of mobile video studio with horizontal bracket, two cameras, two lights, a microphone and a speaker installed.
[0025] FIG. **17** is a perspective view of a light with a diffuser installed.
[0026] FIG. **18** is a rear perspective view of a light with a network connection device installed.
[0027] FIG. **19** is a perspective view of a camera in a camera cage with a wide angle lens installed.
[0028] FIG. **20** is a perspective view of a camera in a camera cage.
[0029] FIG. **21** is a view of the carrying case for the mobile video studio.
[0030] FIG. **22** is a view of the interior of the carrying case for the mobile video studio.
[0031] FIG. **23** is a top view of the camera cage.
[0032] FIG. **24** is a front perspective view of the camera cage.
[0033] FIG. **25** is a front perspective view of the tripod ball.
[0034] FIG. **26** is a top view of the dual slider plate.
[0035] FIG. **27** is a perspective view of the camera cage with a camera installed.
[0036] FIG. **28** is a front view of the camera cage with a camera installed.
[0037] FIG. **29** is a rear view of the camera cage with a camera installed.
[0038] FIG. **30** is a perspective view of the camera cage with a camera and grip installed.
[0039] FIG. **31** is a front view of the camera cage with a camera and grip installed.
[0040] FIG. **32** is a rear view of the camera cage with a camera and grip installed.
[0041] FIG. **33** is a front view of the camera cage with a camera and grip installed being held by a user.
[0042] FIG. **34** is a front view of the camera cage with a camera, grip and light installed being held by a user.
[0043] FIG. **35** is a top view of the floor grid.
[0044] FIG. **36** is a perspective view of the floor grid with two tripods and a presenter.
[0045] FIG. **37** is a perspective view of the floor grid with two camera setups and a presenter.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0046] The following detailed description refers to the preferred embodiment of the disclosed invention as shown in the attached figures and in the below description. This detailed description is not meant to limit the scope of the invention in any way but is intended to disclose the preferred embodiment/best mode of the invention at the time of filing this application.
[0047] The present invention is a mobile video studio comprising 1) one or more cameras, 2) one or more lights, with or without diffusers, 3) one or more tablet computers or displays, 4) one or more microphones, 5) one or more battery packs, 6) one or more internet connectivity devices, 7) one or more speakers, 8) a tripod, 9) heads/ball mounts, and 10) brackets, support and rigging to support all the above equipment in multiple configurations for multiple types of video output. The mobile video studio may also include a shipping safe travel case that allows the mobile studio equipment to be safely shipped or carried on a commercial airline. The various components and configurations will be described in relation to the figures described below.
[0048] FIG. **1** is a view of a configuration of mobile video studio **100**. This configuration includes a first camera **132** and a second camera **156**. Further, the configuration includes a first light **125** and a second light **127**, coupled to tripod **109** with tripod shoes **106**. Microphone **129** is utilized to capture sound for mobile video studio **100**. Microphone **129** is mounted to the top of second light **127** with microphone shoe **157**. Horizontal bracket **135** is secured to tripod **109** with another tripod shoe **106**. Horizontal bracket **135** includes attachment points for two tripod shoes **106**. Tripod shoe **106** is secured to horizontal bracket **135** enabling mobile video studio to slide left, right, and 360 degrees on horizontal bracket **135**. These tripod shoes **106** couple to camera cages **134**. Camera cages **134** hold and support each camera and are attached to the camera via a screw mount. Camera cages **134** further include a tripod head **158** that allows camera cage **134** to be positioned in various forward, aft and side to side positions.
[0049] Camera cage **134** couples to coupling device, in the preferred embodiment, tripod shoe **106**,

by use of complementary shaped hardware on each. Coupling device tripod shoe **106** includes an attachment bracket with two vertical sides, each vertical side coupled to the base of the tripod shoe **106** at a base end. The top end of the vertical side includes a horizontal top clip. The two vertical sides are arranged so there is a gap between the two top clips. These vertical sides and top clips form a horizontal channel with a generally rectangular shape. This channel is closed at one end and open at the opposite end. The open end includes a spring loaded locking mechanism, deactivated by pressing a button located on the shoe. When the button is pressed on the shoe, a locking tab is lowered into the shoe, allowing items to be slid in and out of the channel. When the button is not depressed, the locking tab is raised and blocks the open end. By this means, items are securely locked into the channel in both a vertical and horizontal manner. Items designed to be coupled to the coupling device tripod shoe **106** include a coupling end that is generally rectangular, to match the open channel of the tripod shoe **106**. To couple an item to the tripod shoe **106**, the user presses the button, slides the coupling end into the attachment bracket, slides the device to the bracket and allows the locking mechanism to activate by raising the locking tab. Industry standard tripod shoe **106** sizing is utilized in the preferred embodiment, but any sizing may be used in this invention. Camera cage **134** also includes a built in wireless camera cage receiver **162** which receives audio signals from a wireless microphone installed on the participant and can be used in combination with microphone **129**. Signals from cage receiver **162** are fed into the audio port of the camera to be combined with the video signals captured by the camera.

[0050] Also shown in this configuration is tablet **131**. Tablet **131** may be utilized to operate a video conferencing service such as Zoom™, Microsoft Teams™, WebEx™ or Slack™. It may also be utilized as a teleprompter displaying written materials to be read by the subject of the video. The written content may scroll at an appropriate speed such that new content is displayed at the correct speed and cadence for the reader. The scrolling of the teleprompter may be controlled locally or by a remote user. Lastly, speaker **133** is shown hanging from a base support structure, in the preferred embodiment, tripod **109**. Speaker **133** may also be attached in any other way well known in the art, including hook and loop fasteners, tape, or other adhesive means.

[0051] First camera **132** and second camera **156** may be any digital camera well known in the art. In the preferred embodiment the Sony ZV1-E1 is used, but any suitable camera such as the Sony ZV-1 Mark II (or other cameras in the Sony ZV family), Canon EOS R50, Panasonic Lumix GH6, Fujifilm X-S20, Sony A7S Mark III, any compatible mirrorless, digital single lens reflex (DSLR), or other digital camera/video camera known in the art could be used. In the alternative, cameras found on mobile phones or tablet computers could be used, web cameras are also suitable.

[0052] First light **125** and second light **127** may be any light source well known in the art. In the preferred embodiment, a rectangular LED light, with a 10,000 mAh built in battery, 276 LEDs, a light spectrum from 3200-5600 k and a USB-C connector may be used. Any light source known in the art could be used including LED, ring light, fluorescent, incandescent or any other lighting type could be utilized.

[0053] In the preferred embodiment, tablet **131** is a ALLDOCUBE 2-in-1 Tablet PC running Microsoft Windows™ 11. This tablet is 10.5 inches in size and works with Team Viewer, AnyDesk, Chrome Remote desktop or any other remote connectivity software well known in the art. Any suitable tablet computer could be used including those that run Linux™, Apple IOS™ or Google Android™ operating systems.

[0054] Microphone **129** may be any microphone suitable for video production, but in the preferred embodiment is Rode VideoMic GO II. A wireless microphone may also be utilized with the mobile studio such as Rode Wireless GO II. This configuration includes an audio LAV receiver attached to the mobile video studio. The audio LAV receiver is wirelessly connected to a wireless microphone transceiver attached to the participant (person who is on-camera). The audio LAV may be connected to the camera via an AUX (auxiliary) cable or any other suitable connection method. Any suitable microphone known in the art may also be used with the invention.

[0055] Two video capture cards **177** are shown in this view. Video capture card **177** is fitted between first camera **132** and tablet **131** also between second camera **156** and tablet **131**. Video capture card **177** inputs a video signal from first camera **132** or second camera **156** and converts it to a video signal that may be processed by tablet **131**. Specifically, video capture card **177** converts analog video signals output from the camera into a digital format for processing, live-streaming, recording and storing of the video and audio signals. The capture card used in this version of the invention connects to the tablet computer via USB/USB-C, while others may use PCI Express slots on the motherboard.
[0056] Video capture card **177** is coupled to a cable connected to the camera at one end via a male micro-HDMI cable which couples with a female micro-HDMI connector on the camera. At the second end, the cable includes a male HDMI output which connects to a female HDMI connector on video capture card **177**. The video capture card **177** includes a male USB or USB-C connector that couples to a female USB-C connector on tablet **131**. This configuration allows the user to select the camera as a USB or external camera in Zoom/Teams. While these cable configurations are discussed related to the preferred embodiment, any configuration known in the art of audio-video cables and input/output types may be used.
[0057] Video capture card **177** used in the preferred embodiment is 4K 60 Hz Guermok USB 3.0 HDMI to USB C Audio Capture Card. Any suitable video capture card known in the art may also be used with the invention. It is important to note that the camera can be accessed, controlled and streamed by means of a direct USB-C cable connection between the camera and the tablet computer without the use of the video capture card. The video capture card provides additional broadcasting and video recording capabilities that extend the opportunities for remote collaborators to participate in the video shoot.
[0058] The various components of the mobile video studio are connected by industry standard wiring that include interfaces such as USB-A, USB-B, USB-C, Lighting, Firewire, HDMI, Thunderbolt, SATA, 3.5 mm Audio Jack, Micro HDMI, Micro USB.
[0059] FIG. **2** is a front view of mobile video studio **100** with the top of base support structure, in the preferred embodiment, tripod **109** visible and without camera, tablet or lights attached. Tripod **109** includes first segment **115** and second segment **117**. Each segment may be extended with an additional internal segment that is controlled by locking collar **111**. Locking collar **111** has two positions: 1) locked and 2) unlocked. In the locked position, lock screw **112** is tightened such pressure is applied to locking collar **111** and the extension of tripod segment **115** (or segment **117**) is locked in place.
[0060] In the unlocked position, lock screw is loosened and collar **111** no longer applies enough pressure to prevent movement of the extension of the tripod segment. In the unlocked position, the user may extend each tripod segment to increase or decrease the height of the tripod. Once a suitable position is achieved, the user may lock collar with lock screw **112** to fix the tripod height in one position.
[0061] Accessory bracket **105** is shown secured to tripod top **108** with coupling devices tripod shoes **106**. Accessory bracket **105** includes upper bracket jaw **102** and lower bracket jaw **107** and may be used for securing a variety of accessories to the tripod including tablets, cameras, lights, batteries, Wifi devices and microphones. Battery **104** is secured to the rear of accessory bracket **105**. Accessory bracket **105** includes a tripod shoe **106** above the upper bracket jaw **102** for attachment of various items such as lights, microphones, cameras or any other suitable item.
[0062] In the preferred embodiment, battery **104** is the evatronic Portable Charger 20000 mAh **60**W USB C fast charging. This particular battery **104** has the capability of charging tablet **131**. While this battery is used in the preferred embodiment, any suitable rechargeable battery may be used including those of lithium ion, nickel metal hydride and nickel cadmium varieties. In combination with various batteries, dummy battery May be utilized. A dummy battery is a battery with a power adapter that fits into a battery slot located on the camera. A dummy battery is the

same shape as a regular battery as it is designed to fit in the battery slot to replicate an actual battery. The dummy battery has a cable located at the end closest to the battery door of the camera. The dummy battery cable may be plugged into any power source including a wall plug, a USB outlet, or other power providing connection known in the art. In the preferred embodiment, the dummy battery fitted inside the camera body plugs into the USB outlet slot on the battery pack. In this configuration, the camera may remain powered for many hours without risk of overheating.
[0063] Also in the preferred embodiment, tripod **109** is the Manfrotto Nano Plus which can extend up to 6.5′ (feet) but any suitable support structure and/or tripod may be utilized.
[0064] FIG. **3** shows a side view of tripod **109**. In this view, tripod shoe **106** is shown at the base of accessory bracket **105**. This tripod shoe **106** is suitable for attachment of a camera or other accessory device. Also seen in this view is battery bracket **118** comprising upper battery bracket arm **121** and lower battery bracket arm **122**. Bracket adjustment screw **120** is also shown at the top of accessory bracket **105**. When bracket adjustment screw **120** is in the unlocked position, the jaws of accessory bracket **105** may be adjusted in position. In the locked position, bracket adjustment screw **120** secures upper bracket jaw **102** and lower bracket jaw **107** in a fixed position, thus providing secure attachment of the accessory.
[0065] FIG. **4** shows a rear view of tripod **109** without tablet, camera or lights installed. In this view, battery **104** is shown secured by upper battery bracket jaw **121** and lower battery bracket jaw **122**.
[0066] FIG. **5** shows a front view of mobile video studio **100** with light **125** installed in tripod shoe **106**. Also shown in this view is diffuser **126** secured to light **125**. Diffuser **126** is a frosted transparent panel that softens the harshness of the direct light of light **125**.
[0067] FIG. **6** shows a side view of mobile video studio **100** with light **125** installed in tripod shoe **106**. Battery **104** is also seen attached to the rear of accessory bracket **105**. No accessory is installed in accessory bracket **105** in this view.
[0068] FIG. **7** shows a front view of mobile video studio **100** with first light **125** and second light **127** installed. Both lights have diffuser **126** installed on the front of them. First light **125** is installed on tripod shoe **106**. Second light **127** is installed on a second tripod shoe **106** that is fixed to the top of accessory bracket **105**.
[0069] FIG. **8** shows a side view of mobile video studio **100** with first light **125** and second light **127** installed. Again, both lights have diffuser **126** affixed to the front of the light to provide softer lighting for less shadows and harshness. Battery **104** is affixed to the rear of accessory bracket **105**. Accessory bracket **105** is secured to tripod top **108** with tripod shoe **106**. First light **125** is affixed to accessory bracket **105** with another tripod shoe **106**. Lastly, second light **127** is affixed to the top of accessory bracket **105** by a third tripod shoe **106**.
[0070] FIG. **9** shows a front view of mobile video studio **100** with first camera **132**, first light **125**, tablet **131**, microphone **129**, camera cage receiver **162**, video capture card **177**, and speaker **133** affixed.
[0071] FIG. **10** is a side view of mobile video studio **100** with first camera **132**, first light **125**, microphone **129**, camera cage receiver **162**, battery **104** and speaker **133** attached. In this view, accessory bracket **105** is empty. Microphone **129** is affixed to the top of first light **125** with microphone shoe **157**. First light **125** is attached to accessory bracket **105** with a first tripod shoe **106**. Battery **104** is attached to the rear of accessory bracket **105** with battery bracket **118**. First camera **132** is supported by camera cage **134**, which is supported by a second tripod shoe **106**. Camera cage **134** also includes a built in wireless camera cage receiver **162**. Accessory bracket **105** is attached to tripod top **108** by a third tripod shoe **106**. Lastly, speaker **133** is hung on one of the lock screws **112** on tripod **109**.
[0072] FIG. **11** is a rear view of mobile video studio **100** in a configuration including tablet **131**, first light **125** and microphone **129**. Tablet **131** is installed in accessory bracket **105** and battery **104** is affixed to the rear of accessory bracket **105** in battery bracket **118**. Accessory bracket **105** is

secured to tripod top **108** by a first tripod shoe **106**, first light is attached to the top of accessory bracket **105** with a second tripod shoe **106** and microphone **129** is affixed to the top of first light **125** with microphone shoe **157**. Light shoe **136** is visible in this view, which may be utilized to attach further accessories to first light **125** or attach first light **125** to tripod head **106** in a vertical position. Speaker **133** is hanging from lock screw **112** on tripod **109**. Network connection **138** is affixed to the rear of first light **125** with a magnet in this embodiment, but any other suitable means to affix the network connection **138** well known in the art may be utilized. Network connection **138** provides an internet connection through WiFi, cellular, mobile or other networks. In the preferred embodiment, it provides a fast fifth generation ("5G") digital connection to the internet but any suitable internet connection means may be used.

[0073] FIG. **12** is an alternate configuration of mobile video studio **100** with first camera **132** and tablet **131** both in vertical orientations. The flexible configuration options of mobile video studio **100** allow the various accessories to be installed in different locations on the device and in different orientations. The flexible configuration options of mobile video studio **100** also allow the screen of tablet **131** to be less inhibited by camera **132**. In this configuration, tablet **131** is installed in accessory bracket **105** in a vertical orientation. Accessory bracket is secured to tripod top **108** on a first tripod head **106**. First camera **132** is secured in camera cage **134** and oriented in a vertical position. Camera cage **134** is attached to accessory bracket **105** by a second tripod head **106**. First light **125** is affixed to the top of accessory bracket **105** with a third tripod shoe **106**. Video capture card **177** is routed between first camera **132** and tablet **131**. Lastly, microphone **129** is attached to the top of first light **125** with microphone shoe **157**.

[0074] FIG. **13** is a configuration similar to that shown in FIG. **12** with the difference that first camera **132** and tablet **131** are both installed in horizontal orientations. Each accessory in this view is secured in the same method discussed in relation to FIG. **12**.

[0075] FIG. **14** shows an alternate configuration of the mobile video studio **100** with horizontal bracket **135** installed. In this configuration, horizontal bracket **135** has two ends, each with a tripod shoe **106**. On the first side (in this view, left side), a first accessory bracket **105** is installed in the first tripod shoe **106**. Tablet **131** is installed in this accessory bracket **105** in a horizontal configuration. At the top of the first accessory bracket, first light **125** is installed in a tripod shoe fixed to the top of the accessory bracket **105**. Microphone **129** is installed in microphone shoe **157** affixed to the top of first light **125**.

[0076] On the second side (in this view, right side), a second accessory bracket **105** is installed in a second tripod shoe **106**. First camera **132** is secured within camera cage **134**, which is affixed to a third tripod shoe **106**. Nothing is installed in the second accessory bracket **105**, but at the top a fourth tripod shoe **106** secures a second light **128**.

[0077] FIG. **15** shows a rear view of the configuration shown in FIG. **14**. Here, the first accessory bracket **105** is shown with first battery **104** installed in first battery bracket **108**. Second accessory bracket **105** is shown with second battery **104** installed in second battery bracket **118**. Tablet **131** is shown installed in first accessory bracket **105** with first light **125** at the top of the accessory bracket. Microphone **129** is installed at the top of first light **125** in microphone shoe **157**.

[0078] Second accessory bracket **105** is empty but first camera **134** installed at its base. Second light **127** is installed at the top of second accessory bracket **105** and fixed in place with tripod shoe **106**. Network connection **138** is affixed to the rear of second light **127**. Network connection **138** provides an internet connection through WiFi, cellular, mobile or other networks. In the preferred embodiment, it provides a fast fifth generation ("5G") digital connection to the internet but any suitable internet connection means may be used.

[0079] FIG. **16** shows a two camera configuration of mobile video studio **100**. In this view, first camera **132** is installed in first tripod shoe **106** (on the left side, in this figure). Second camera **156** is installed in second tripod shoe **106** (on the right side, in this figure). First accessory bracket **105** secures tablet **131** and first light **125** above tablet. A first video capture card **177** is connected

between first camera **132** and a second video capture card **177** is connected between second camera **156** and tablet **131**. Second accessory bracket **105** is empty but second light **127** and microphone **129** are installed above the bracket. The accessories are secured to tripod **109** and horizontal bracket **135** as discussed in relation to prior figures.

[0080] FIG. **17** shows a detailed view of first light **125**. In this view, diffuser **126** is installed on the front of first light **125**. Also visible is first light connector **137** which is coupled with tripod shoe **106** to secure the light to the mobile video studio. When this shoe connector **137** is in use, the light is oriented in a vertical fashion, Light shoe **136** allows attachment of various accessories to first light **125** and operates similarly to tripod shoe **106**.

[0081] FIG. **18** shows a rear view of first light **125** with network connection **138** affixed to the rear of the light. First light connector **137** is shown as is second light connector **139**. First light connector **137** allows mount of first light in a vertical orientation. Second light connector **139** enables mounting of the light in a horizontal orientation.

[0082] FIG. **19** is a detailed view of first camera **132** installed in camera cage **134**. Also seen here is cage release **140**. When depressed, cage release **140** allows removal of the camera from camera cage **134**. In this configuration, wide angle lens **142** is installed on camera lens **131**. Wide angle lens **142** allows a larger field of view and thus capture of larger vertical and horizontal space within the camera frame at the same camera distance from the subject as with camera lens **131**. Wide angle lens **142** is one example of the hundreds of interchangeable lenses available in the industry. Any suitable lens or combination of lens mount well known in the art may be utilized. Camera cage **134** also includes a built-in wireless camera cage receiver **162**. Camera cage **134** further includes level **178**. Level **178** is a one-axis circular spirit level that assists the user in measuring whether the camera is installed in a manner level to the ground. A circular spirit level is comprised of a vial of liquid, generally oil, alcohol or other spirit. The vial is not completely filled with liquid leaving an air bubble in the vial. In a circular spirit level, there is a circular window in the vial with a round target. When the air bubble is oriented within the bubble, the spirit level is level with the ground. In this manner, the circular spirit level provides level measurement in a single axis (the horizontal axis). Spirit levels are also referred to as bubble levels or just levels.

[0083] It is also anticipated that a two-axis level comprising two tubular levels, one measuring the horizontal axis, and one measuring the vertical axis, may be used. A tubular level is formed of a tube-shaped vial, partially filled with liquid, with the void forming an air bubble. The tubular vial also includes central measurement marks. When the air bubble is between the central measurement marks, the tubular level is considered level. A two-axis level has a tubular level in the vertical orientation and one in the horizontal orientation. This two-axis level may be installed in one of the various light shoes **136**. It is also anticipated that a three-axis level may be utilized, with two tubular levels installed horizontally, perpendicular to each other, and a third tubular level installed vertically. While these configurations are disclosed as part of the preferred embodiment, any suitable level or combination of levels well known in the art may be utilized.

[0084] FIG. **20** is a second detailed view of first camera **132**. In this view, no wide angle lens **142** is installed and only camera lens **132** is in use.

[0085] FIG. **21** shows an exterior view of carrying case **143**. Carrying case **143** is sized and shaped to safely secure and contain all the elements of mobile video studio **100**. Carrying case **143** has a hard plastic exterior with a foam rubber interior insert. The foam rubber interior insert has cut-outs shaped to fit the various elements and accessories of mobile video studio **100**. Carrying case **143** is suitable for shipping via postal services. FedEx™, UPS™, DHL™ and other shipping services. Carrying case **143** is also durable enough to be suitable for checking or carrying on as baggage on commercial airline flights. In the preferred embodiment, the carrying case **143** is made of hard plastic with a foam rubber insert, but any suitable durable material and shock resistance interior material may be used. Exterior materials may include aluminum, stainless steel, wood, and various plastics. Interior materials may include other foam materials, Styrofoam or other suitable materials

well known in the art.
[0086] FIG. **22** is a view of carrying case **143** open with its interior visible. The various components of the mobile video studio **100** are cushioned by cushion material **144** and dividers **146**. These items are formed of foam rubber and sized to secure the accessories from movement and damaging collision with each other while carrying case **143** is in transit. In this view, first camera **132**, second camera **156**, tablet **131**, microphone **129**, first light **125** and tripod **109** are shown secured in their respective storage locations. This view shows just one configuration but other configurations are anticipated under the claims of this invention. Interior materials may include foam rubber, other foam materials, Styrofoam or other suitable materials well known in the art.
[0087] FIG. **23** is a top view of camera cage **134**. Camera cage **134** is secured to the exterior of first camera **132** or second camera **156** and assists in attaching the camera to mobile video studio **100**. Screw post **148** is a threaded post that couples with a similar sized and opposite threaded hole in the base of the camera. This screw post **148** couples with this opening and when secured by tightening, holds the camera within camera cage **134**. Camera lens **132** fits through lens opening **151**. First cage connector **150** is sized to couple with tripod shoe **106** and enables vertical orientation of the camera. Second cage connector **149** is also sized to couple with tripod shoe **106** and enables horizontal orientation of the camera.
[0088] Camera cage **134** is manufactured out of aluminum in the preferred embodiment, but any suitable strong and lightweight metal may be used such as stainless steel, titanium or various alloys well known in the art.
[0089] FIG. **24** shoes a front perspective view of camera cage **134**. First cage connector **150** and second cage connector **149** are visible, as is lens opening **151**. First cage shoe allows additional items to be attached to the camera connector using a shoe connector as detailed throughout this document.
[0090] FIG. **25** shows ball tripod head **152** which allows any item attached to ball connector **153** to be rotated 360 degrees. This ball connector **153** combined with the adjustments on the tripods and sliders allow the cameras to be configured in any possible direction. Locking and unlocking of rotation occurs with lock knob **154**. In the unlocked position, the ball tripod head **152** may rotate around its vertical axis. In the locked position, the ball tripod head **152** is locked in position. Connector plate **148** couples with tripod shoe **106** for easy attachment at multiple locations in the mobile video studio **100**.
[0091] FIG. **26** shows a dual slider plate **161**. Dual slider plate is comprised of two tripod shoes **106**, each with release button **155**. The release button **155**, when depressed, releases the item coupled in the tripod shoe **106**. The dual slider plate may be used for attaching a ball tripod head **152** with a camera **132** and a tablet **131** or light **125** at the same time.
[0092] FIG. **27** is a view of camera **132** installed in camera cage **134**. Here camera lens is positioned through lens opening **151**. Screw post **148** is coupled with the similarly sized and opposite threaded hole in the base of the camera. This screw post **148** couples with this opening and is secured by tightening, holds the camera within camera cage **134**. Screw post **148** is located at the top of ball tripod head **152**. Ball tripod head is secured in tripod shoe **106**. First cage shoe **160** is visible and the location of cage receiver **162** is seen though it is not visible in this view. Level **178** is also visible in this view.
[0093] FIG. **28** is a front view of camera **132** installed in camera cage **134**. In addition to the features shown in previous figures, second cage shoe **173** is shown. This second cage shoe may be used to couple various items to the camera cage **134**, including cage receiver **162**. Level **178** is also visible in this view.
[0094] FIG. **29** is a rear view of camera **132** installed in camera cage **134**. In this view, first cage shoe **160** is visible, as are ball tripod head **152** and tripod shoe **106**.
[0095] FIG. **30** is a perspective view of camera **132** installed in camera cage **134** with the optional

grip **174** installed. Grip **174** is coupled to camera cage **134** via grip coupling **175**, in this preferred embodiment a screw mount where a threaded screw is coupled with a similarly sized but opposite threaded hole on camera cage **134**. Grip **174** allows for easier handling of the camera **132** when mounted to tripod or when used without a tripod, i.e. hand-held. Also seen in this view are lens opening **151**, screw post **148**, ball tripod head **152** secured in tripod shoe **106**, and first cage shoe **160**. In the preferred embodiment, grip **174** is formed of plastic with rubber pad located on the portions that a user would grip with their hand, but any suitable material well known in the art may be utilized.

[0096] FIG. **31** is a front view of camera **132** installed in camera cage **134** with the optional grip **174** installed. A side view of grip coupling **175** is visible and couples grip **174** to camera cage **134**. Second cage show 173 is visible in this view as well. The remainder of the features shown in this view are as described in relation to prior figures.

[0097] FIG. **32** is a rear view of camera **132** installed in camera cage **134** with the optional grip **174** installed. A side, rear view of grip coupling **175** is also shown in this view.

[0098] FIG. **33** is a front view of camera **132** installed in camera cage **134** with user hand **176** holding the combination with grip **174**. Also visible in this view is cage receiver **162**.

[0099] FIG. **34** is a front view of camera **132** installed in camera cage **134** with user hand **176** holding the combination with grip **174**. Also visible in this view is light **125**.

[0100] FIG. **35** shows floor grid **163** of mobile video studio **100**. Floor grid **163** functions as a map of the various components of the mobile video studio **100** that is placed on the floor by the receiver of the studio. The floor grid has arrows printed on it, depicting where to place the camera kits, lights, and where the participant should stand. In this embodiment, floor grid **163** includes first position **164**, second position **165**, third position **166** and fourth position **167**. Each of first position **164**, second position **165**, third position **166** and fourth position **167** may be utilized as a location for a camera kit, a light and/or the participant/presenter. Positions **164-167** can be adjusted to suit the desired camera setup of the participant. The equipment to be located at each position will be outlined to the presenter/participant/user of the mobile video studio **100** to provide them with a map that allows simpler setup of the various components. In this embodiment, there are four positions and the floor grid has dimensions 73″ (186 cm)×60″ (153 cm) but custom floor grids may be created. Custom floor grids may be designed, printed, and tested for various equipment setups and camera “points of view” before being shipped with the mobile video studio **100**. This enables consistent parameters and specifications that can then be easily replicated by the remote user. The specifications and parameters relate primarily to physical distance between the camera kits and participants/presenters being recorded, but any specification or parameter that relates to the equipment, participant, presenter, and/or user of the mobile video studio **100** may be used.

[0101] FIG. **36** is a view of mobile video studio **100** with floor grid **163** in place. In this view, a first tripod **169** is in place in first position **164**, a second tripod **170** is in place in third position **166** and a presenter **168** is in fourth position **167**. This is just one example configuration and equipment for mobile studio **100** and participants is possible within the claims of the invention.

[0102] FIG. **37** is a view of mobile video studio **100** with floor grid **163** in place. In this view, a first camera setup **171** is in place in first position **164**, a second camera setup **172** is in place in third position **166** and a presenter **168** is in fourth position **167**. This is just one example configuration and equipment for mobile studio **100** and participants is possible within the claims of the invention.

[0103] Although the present invention has been described in relation to the above disclosed preferred embodiment, many modifications in design, implementation, systems and execution are possible while still maintaining the novel features and advantages of the invention. The preferred embodiment is not meant to limit the scope of the patent in any way, and it should be given the broadest possible interpretation consistent with the language of the disclosure on the whole.

Claims

1. A mobile video studio comprising: an extendable base support structure; an accessory bracket coupled to the base support structure; a mobile computing device secured within the accessory bracket; one or more cameras coupled to the mobile video studio; a network connection device coupled to the mobile video studio; one or more light modules coupled to the mobile video studio; one or more batteries coupled to the mobile video studio; and one or more microphones coupled to the mobile video studio.
2. The mobile video studio of claim 1 where the mobile computing device is selected from the group comprising computer, notebook computer, tablet and mobile phone.
3. The mobile video studio of claim 1 further comprising a speaker.
4. The mobile video studio of claim 1 where the one or more cameras, the one or more light modules and the one or more microphones are coupled to the mobile video studio with one or more coupling devices.
5. The mobile video studio of claim 4 where the one or more coupling devices are coupled to the accessory bracket.
6. The mobile video studio of claim 4 where the one or more coupling devices are quick release shoe type devices.
7. The mobile video studio of claim 1 where the base support structure is a tripod.
8. The mobile video studio of claim 1 where the one or more cameras are secured within a camera cage.
9. The mobile video studio of claim 1 where the one or more lighting devices include a diffuser.
10. The mobile video studio of claim 1 where the one or more batteries are coupled to the mobile video studio with a battery bracket.
11. The mobile video studio of claim 1 where the one or more cameras are installed on heads wherein the head rotates.
12. The mobile video studio of claim 1 that further comprises a carrying case for the mobile video studio.
13. The mobile video studio of claim 1 that further comprises a floor grid.
14. The mobile video studio of claim 1 where the one or more batteries is a dummy battery.
15. The mobile video studio of claim 1 where the one or more cameras comprises an output and the output is routed to the mobile computing device.
16. The mobile video studio of claim 1 where the one or more cameras comprises an output and the output is routed to a video capture card.
17. The mobile video studio of claim 7 where the camera cage further comprises a grip.
18. A mobile video studio comprising; an extendable base support structure; a horizontal support structure coupled to the base support structure with a first end and a second end; a first accessory bracket coupled to the first end of the horizontal support structure, the first accessory bracket further comprising one or more coupling locations for one or more light modules and one or more cameras; a second accessory bracket coupled to the second end of the horizontal support structure, the second accessory bracket further comprising one or more coupling locations for one or more light modules and one or more cameras; a network connection device coupled to the mobile video studio; one or more batteries coupled to the mobile video studio; and one or more microphones coupled to the mobile video studio.
19. The mobile video studio of claim 18 further comprising a speaker.
20. The mobile video studio of claim 18 where the one or more cameras, the one or more light modules and the one or more microphones are coupled to the mobile video studio with one or more coupling devices.
21. The mobile video studio of claim 20 where the one or more coupling devices are quick release

shoe type devices.
22. The mobile video studio of claim 18 where the base support structure is a tripod.
23. The mobile video studio of claim 18 where the one or more cameras are secured within a camera cage.
24. The mobile video studio of claim 18 where the one or more lighting devices include a diffuser.
25. The mobile video studio of claim 18 where the one or more batteries are coupled to the mobile video studio with a battery bracket.
26. The mobile video studio of claim 18 where the one or more cameras are installed on heads wherein the head rotates.
27. The mobile video studio of claim 18 that further comprises a carrying case for the mobile video studio.
28. The mobile video studio of claim 18 that further comprises a floor grid.
29. The mobile video studio of claim 23 where the camera cage further comprises a grip.
30. The mobile video studio of claim 18 where the one or more batteries is a dummy battery.
31. The mobile video studio of claim 18 where the one or more cameras comprises an output and the output is routed to the mobile computing device.
32. The mobile video studio of claim 18 where the one or more cameras comprises an output and the output is routed to a video capture card.