

JG Jack Glover

GNTV Summer Intern Training



Welcome to GNTV! In this training course, you will be exposed to the in and outs of everything we do.

☰ GNTV Training Introduction

☰ Cables: The Ins and Outs

☰ Video World

☰ Audio World

☰ Graphics

🔍 Final Knowledge Check

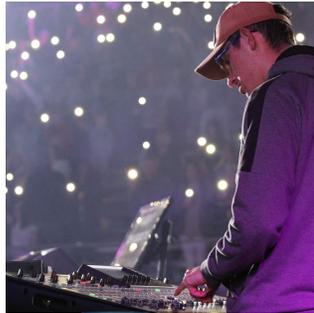
☰ Conclusion

GNTV Training Introduction

JG Jack Glover

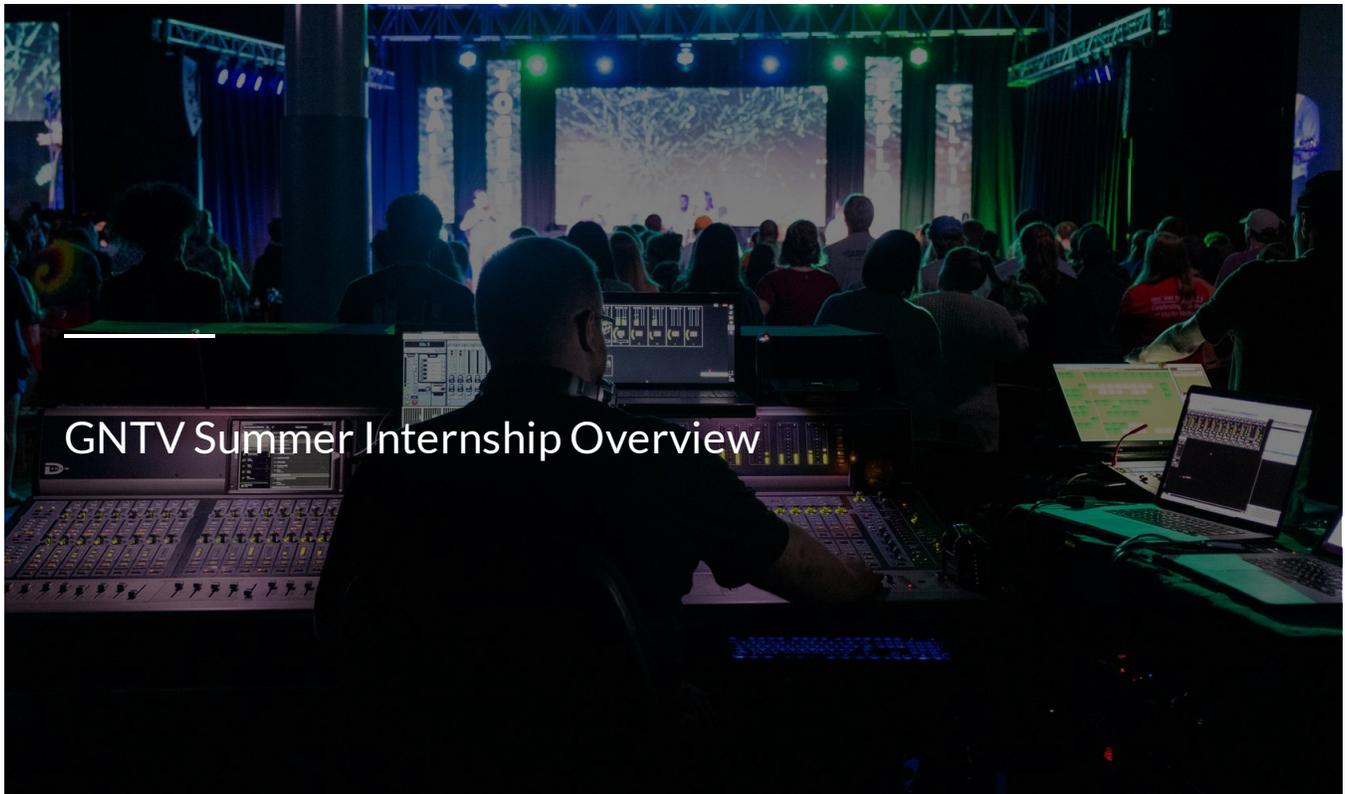
Welcome to GNTV Internship Training

In this course, you will be exposed to the ins and outs of the live event production industry with GNTV through common procedures, specific technology, and other important information that will become very important to understand as you begin working with us.



The training course will focus on 4 categories of information

- 1 Cable Necessities: Cable length, uses, and coiling
- 2 Video Equipment: Camera and related camera equipment, Projectors, Switchers, Display
- 3 Audio Equipment: Speakers and Monitors, microphones, stage boxes

[CONTINUE](#)

Throughout the summer, GNTV hosts several events around the nation during what we call "The Summer Run". It's a busy time for the ministry, and we are thankful to have our intern team for this period. A majority of these events are Annual Conferences for the United Methodist Church. For those unfamiliar, the United Methodist Church is organized into regional groups called "conferences" (for example, the Baltimore-Washington Conference,). Each conference meets once a year for a large organizational meeting, known as the "annual conference" (i.e. BWAC 2022). The conference is a mixture of business meetings and worship services, often with some mission work thrown in.

During your internship, you will be designated a position on a crew for several of the annual conferences that span from May–June. You will have the opportunity to work with different crews consisting of interns and full-timers. Once the annual conference run is over, you will primarily be stationed in the Macon office.

Crew Roles

VIDEO DIRECTOR	AUDIO ENGINEER	GRAPHICS OPERATOR	TECHNICAL DIRECTOR/TD	OPERATOR
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In charge of all the cameras, screens, video streaming, etc.



VIDEO DIRECTOR

AUDIO ENGINEER

GRAPHICS
OPERATOR

TECHNICAL
DIRECTOR/TD

OPERATOR

In charge of all bands, music, speakers, microphones, etc.



VIDEO DIRECTOR

AUDIO ENGINEER

GRAPHICS
OPERATOR

TECHNICAL
DIRECTOR/TD

OPERATOR

Sorts/creates/controls all graphics and videos to be shown on screens



VIDEO DIRECTOR

AUDIO ENGINEER

GRAPHICS
OPERATOR

TECHNICAL
DIRECTOR/TD

OPERATOR

Video assistant, controls video switcher under video director, guides camera shots through communication



VIDEO DIRECTOR

AUDIO ENGINEER

GRAPHICS
OPERATOR

TECHNICAL
DIRECTOR/TD

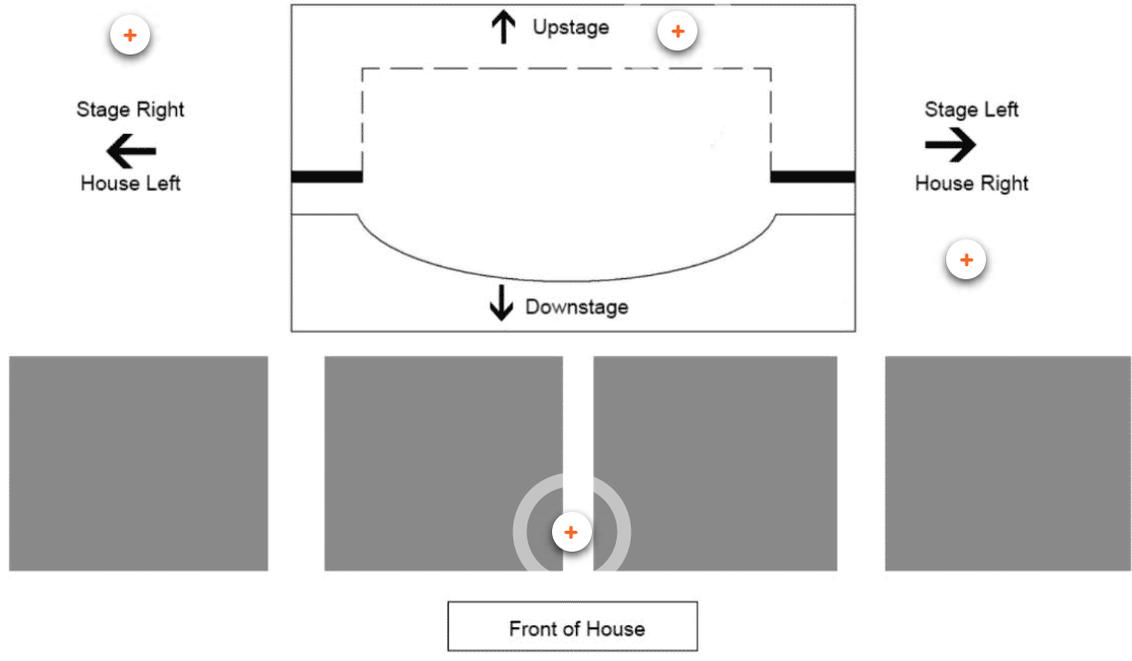
OPERATOR

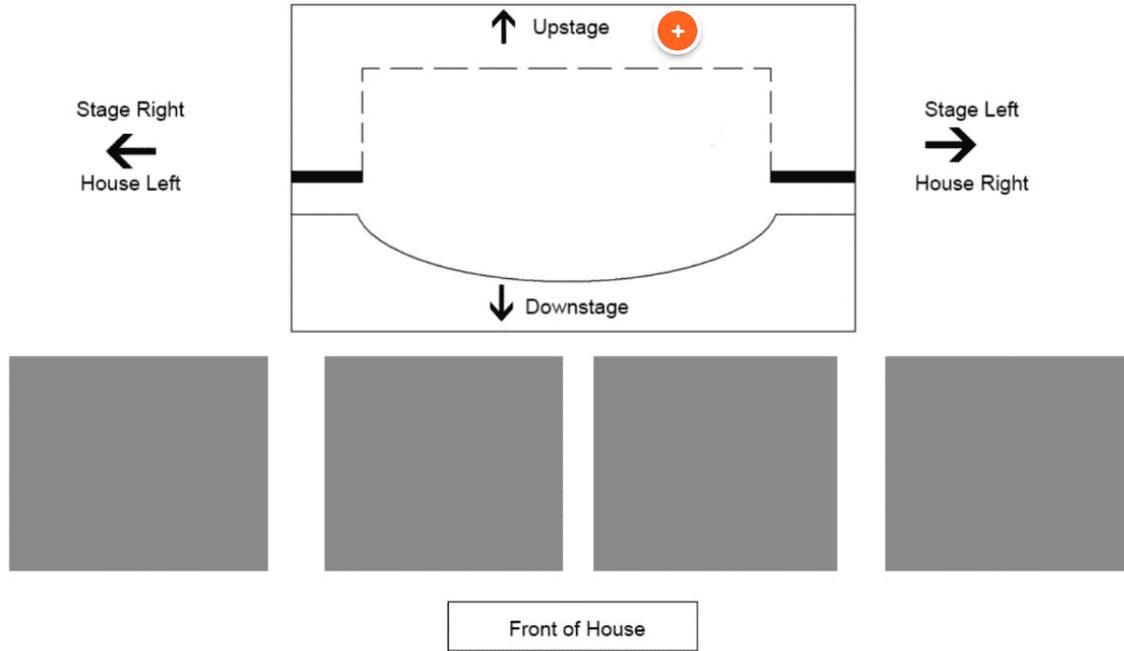
Operates handheld and controlled cameras during live events hosted by GNTV.



Complete the content above before moving on.

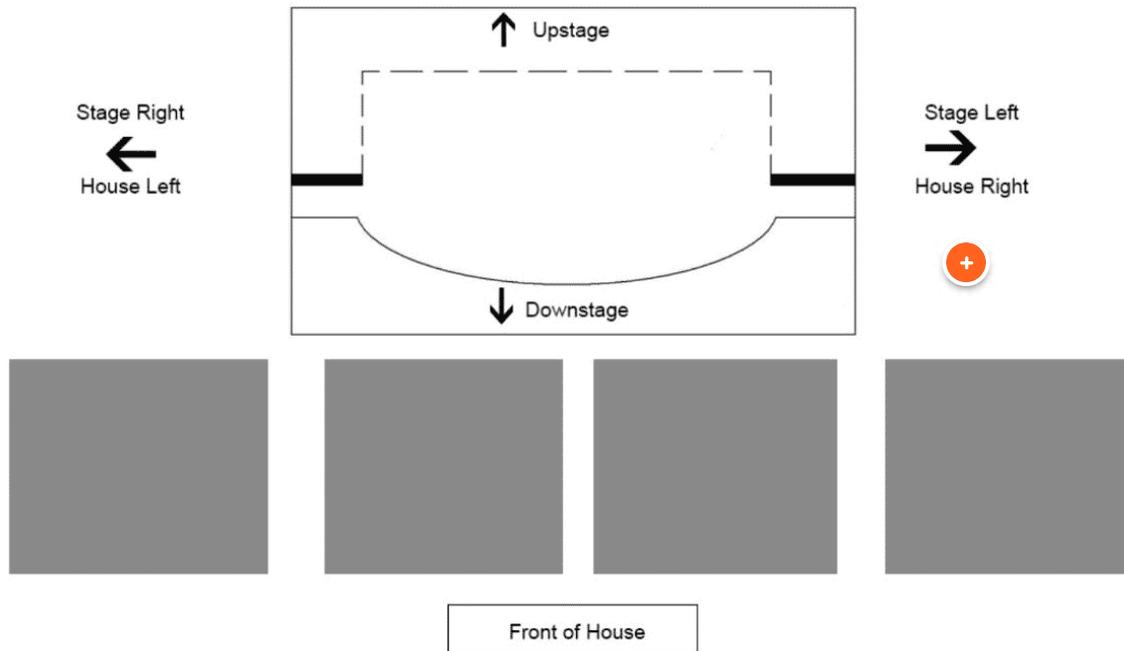
Stage Directions





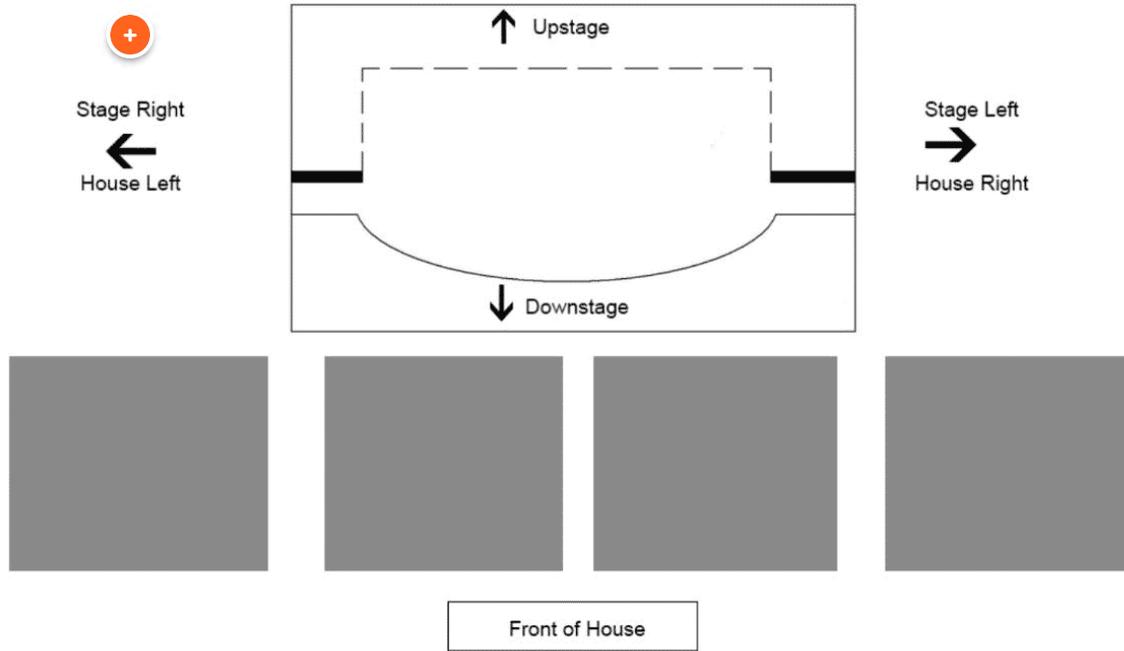
Upstage/Downstage

Upstage refers to the area back toward the drape/wall/back of the stage, **downstage** is forward/toward the audience.



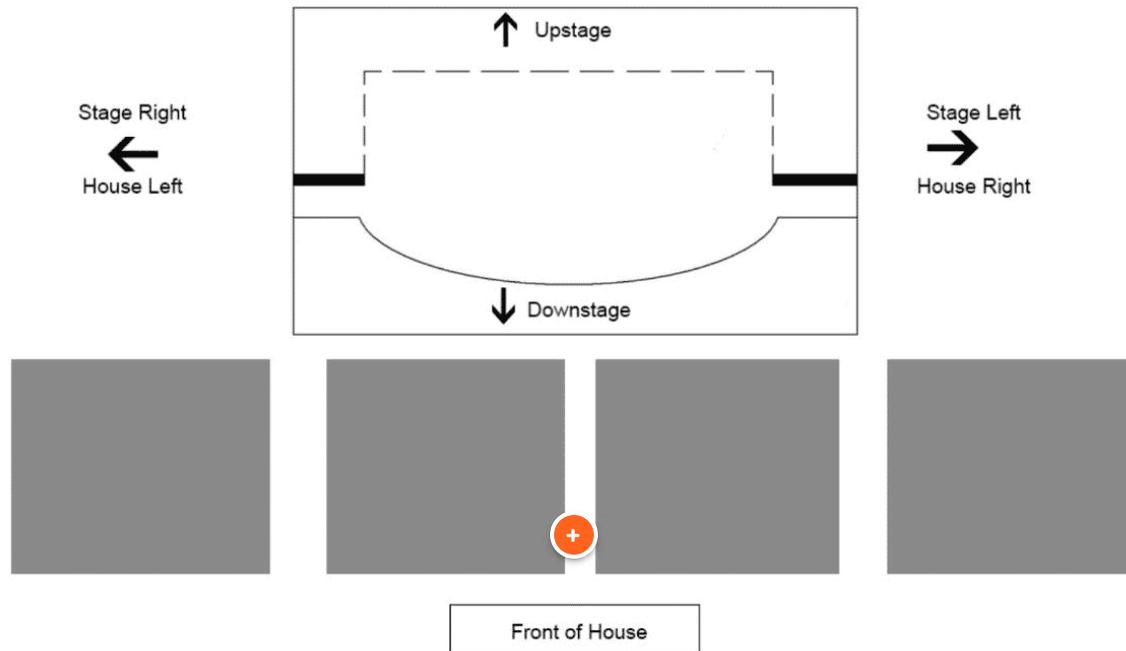
House Directions

Refer to left and right as seen by an audience member/someone in the house.



Stage Directions

Refer to left and right as seen by an actor/presenter on stage



Front of House

Refers to a portion of the event venue that is open to the public, such as in the audience or foyer. In production slang, “front of house” refers to any production area we have that overlaps with “audience space”, instead of being backstage, for example the audio mix or lighting positions.

Finally, rules and expectations for success

- 1 Be careful and attentive when using our gear. A lot of it is more expensive than you think and can break if not used properly.
- 2 Be respectful and courteous to our partners. These are the people that host us during events and provide the financial support to make it all possible. Be respectful of their instruction and property at all times. Finally, we clean up after ourselves.
- 3 Even if you are doing something simple, such as gaffing cables, do it well. You must prove that you can be trusted with little before you will be trusted with much.



4

Be at your post when you are expected to be there, with your headset on, phone put away, and ready to start.



Complete the content above before moving on.

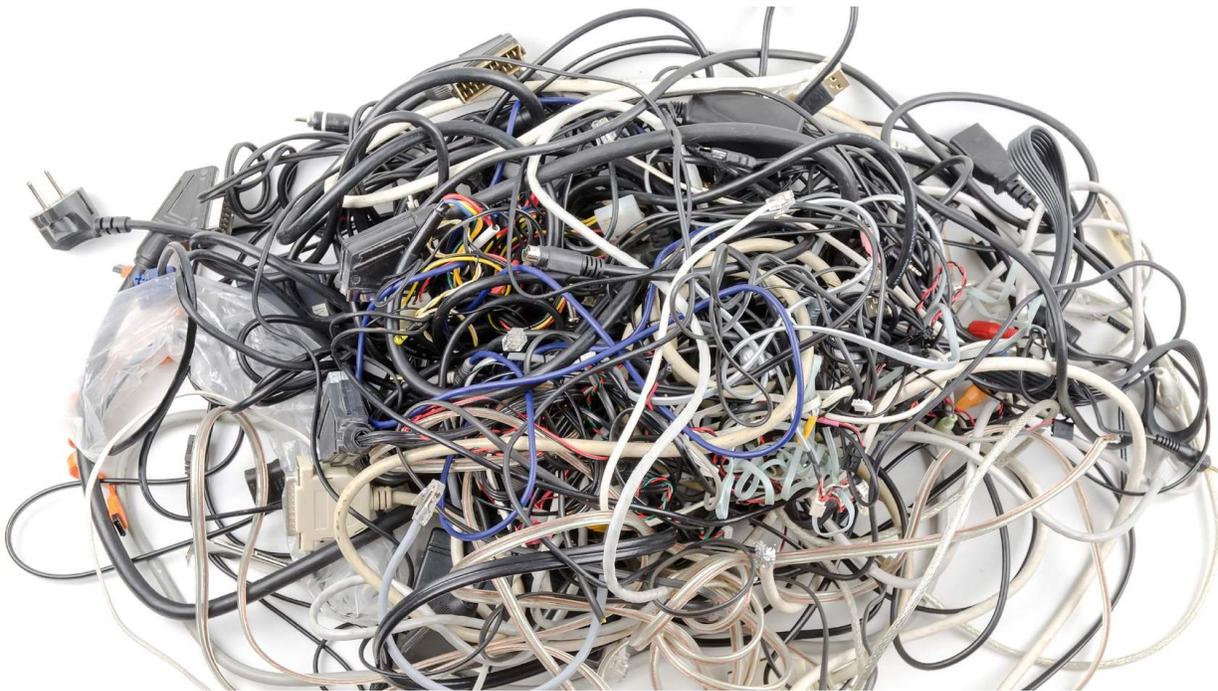
You've become familiar with who GNTV is and some of our standards for success. Let's get started learning equipment by tackling cables. Click the button to proceed

CABLES

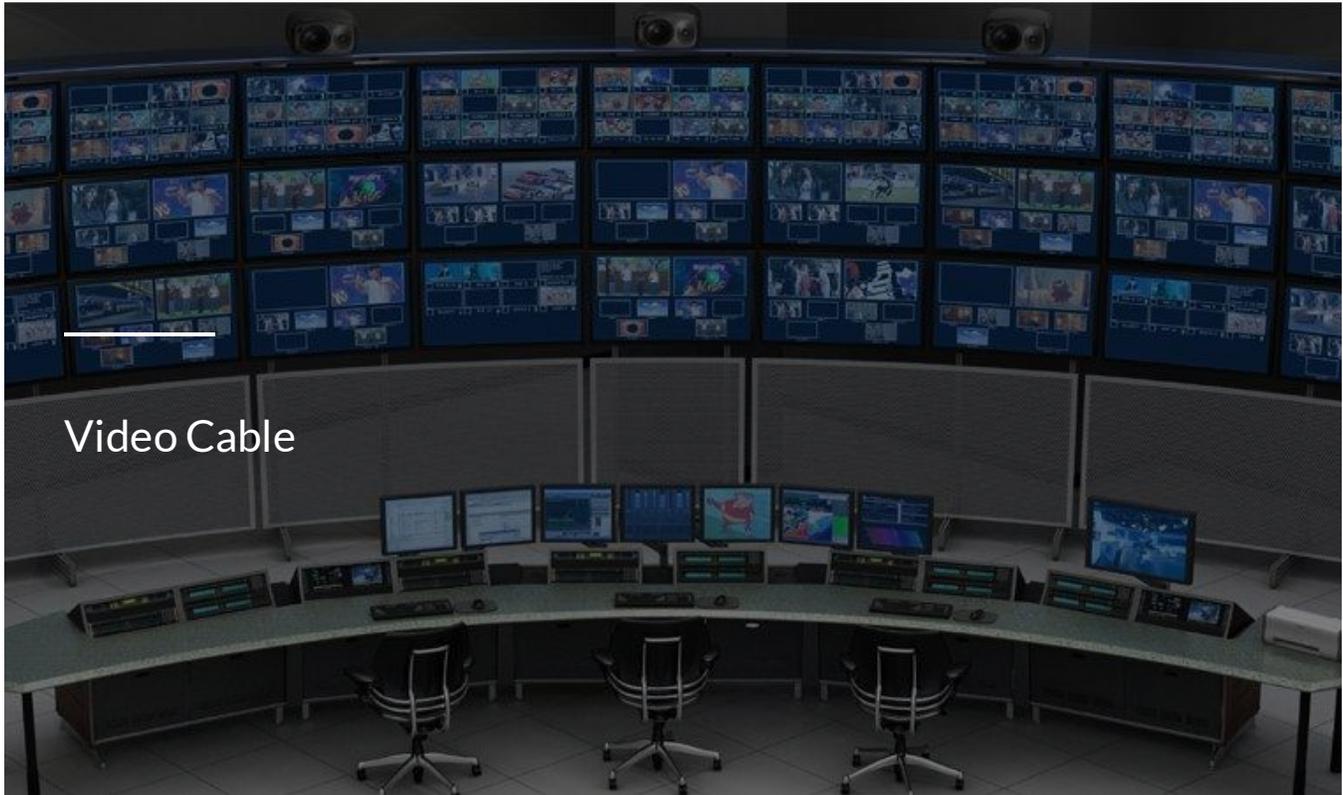
Cables: The Ins and Outs

JG Jack Glover

At GNTV, we do our best to avoid....



Having an immediate understanding our cables will provide a valuable jump-start to your internship experience. At first, the number of cables and their use may be overwhelming, but you will have plenty of time to gain expertise with all of them very soon. Let's take a look at our cables by separating them into categories of video, audio, power, and lighting.



Video Cable

BNC/SDI —

BNC connectors are used on coaxial cables for professional SDI video signals. It often connects cameras and converters to video switchers. Think of it as display creation. It's important to become familiar with the male and female ends of the cables as detailed in the image.



MALE BNC PLUG



FEMALE BNC JACK

HDMI —

More than likely, you've used an HDMI cable in your household. It connects computers, TVs, and other consumer video equipment.

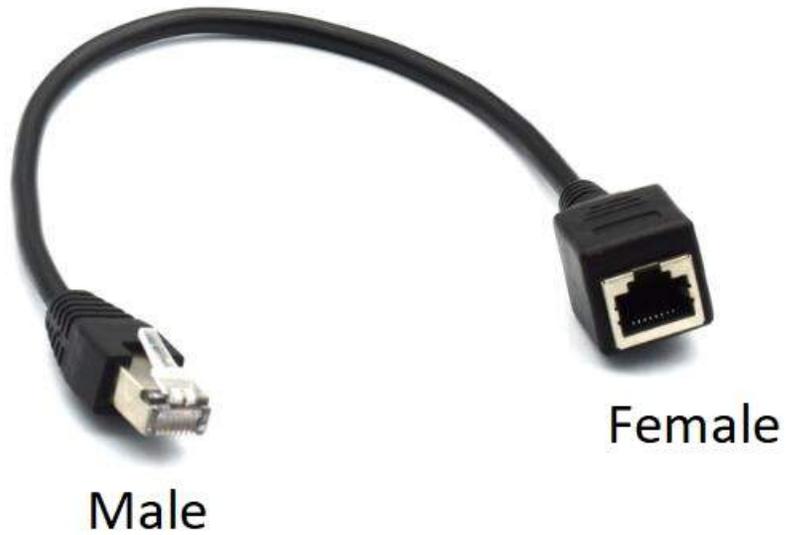


Mini HDMI Female

HDMI male

RJ45 (aka Cat5e, ethernet) —

This network cabling is used for internet connectivity and network-based control over much of our equipment. You may have used these in the past to deliver ethernet signals to a computer or gaming system.



VGA —

VGA is an older analog video connection that is still used for some computers and projectors in our collection of equipment.



Male



Female



Complete the content above before moving on.

Audio Cable

XLR

ETHERCON

1/4" TS

1/4" TRS

N

This cable is used for microphone inputs and outputs to powered speakers.



XLR	ETHERCON	1/4" TS	1/4" TRS	N
-----	-----------------	---------	----------	---

Ethercon is used in conjunction with an RJ45 locking shell. It is used for digital snake connections.



Male



Female

XLR

ETHERCON

1/4" TS

1/4" TRS

N

Also referred to as instrument cables. Can be used for guitars, keyboards, etc. Output unbalanced signal that is fed through an amp or DI box to be amplified.



Male



Female

XLR	ETHERCON	1/4" TS	1/4" TRS	N
-----	----------	---------	----------	---

Balanced connection used for patching between some audio equipment.



Male



Female

XLR	ETHERCON	1/4" TS	1/4" TRS	N
-----	----------	---------	----------	---

Locking cable connector for sending powered signals to passive speakers.



Male

Female



Complete the content above before moving on.

Power Cable

Edison —

Instantly recognizable. There are several of these standard power cables plugged into your outlets at home. They provide power for a wide variety of equipment.



Male



Female

IEC 13-14 —

Powers computers, light fixtures, video switchers, projectors, and more.



Male



Female

Powercon —

A locking cable connector that supports light fixtures, speakers, LED panels, and more. Gray connectors indicate power outlets, and blue connectors indicate power inputs.

Male



Female

Camloc —

Supplies power from a disconnect or breaker panel to our power distros. A full set of camloc comes in red, white, blue, green, and black.

Male



Female



Twist-Lock —



Male



Female

Socapex —



Male



Female



Complete the content above before moving on.

Cable Color Code Guide

At GNTV, we sort our cables using a color system. This helps us quickly recognize length at a glance. PLEASE adhere to this sorting method. If the label for a cable is missing, do your best to place it in the correct spot on the shelves based on a comparison to cables of known length. Cables marked "damaged" or with obvious tears or missing connectors should be put in the library for repair.



CABLE COLOR CODE GUIDE

No Color	UNDER 25 FEET
RED	25 FEET
BLUE	50 FEET
YELLOW	100 FEET
GREEN	150 FEET
WHITE	200 FEET
PURPLE	250 ⁽⁺⁾ FEET
PINK Spike Tape	DMX



CONTINUE

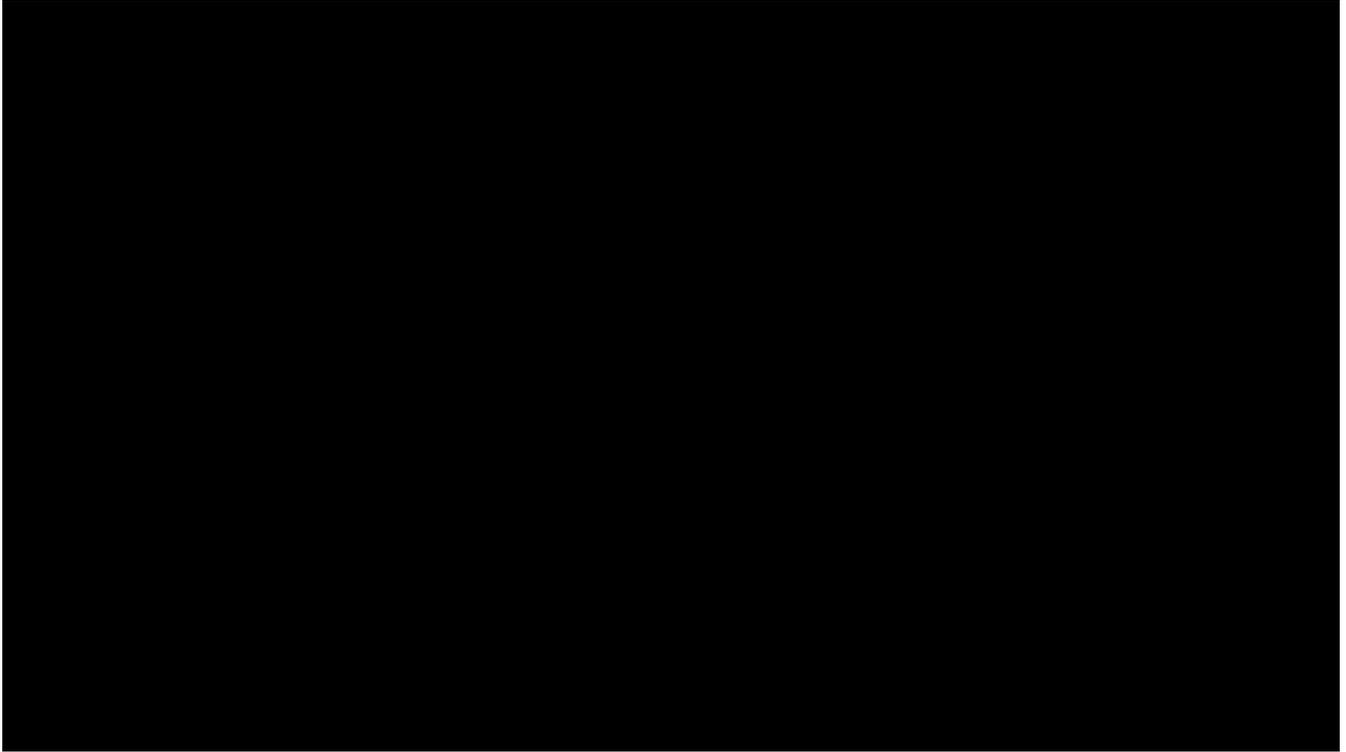
Well... it seems like you have managed to solve the cable mess. Let's now move onto the world of video at GNTV. Click the button to proceed.

VIDEO WORLD

Video World

JG Jack Glover





What to expect

In this module, we will take a deep dive into arguably the most essential GNTV production element at live events. The video includes anything from setting up cameras, live streaming events, recording footage, and sending video signals to monitors or projectors. There is much more than face value when it comes to the equipment and processes involved in the video world. Let's take a look at a brief overview of several components of video including cameras and their features, tripods, projectors, LED wall panels, and video switchers.



Cameras

1

SONY NX5U The NX5U and NX5R are professional camcorders. These cameras are almost always present at live events hosted by GNTV. They have a fixed lens and multiple audio inputs. They feature HDMI and SDI outputs to send a video signal to a switcher, and they can record to a card. These cameras are typically mounted on a tripod with a camera operator to manipulate the camera.

2

SONY SRG300SE PTZ SYSTEM The SRG-300SE is a PTZ camera (pan, tilt, zoom). The Sony PTZ gets an analog control signal via CAT-5e cable from the Sony RM-BR300 controller at the production table. One controller can run several PTZ cameras at once. It features an SDI output and cannot record independently.

3

PTZOptics PTZ SYSTEM The PTZOptics cameras are IP-controlled PTZ cameras, which means they connect to the PTZOptics SuperJoycontroller via a network switch. They can receive power over ethernet (POE), so with the proper equipment, they will receive power and control information over one cable. They also have SDI and HDMI outputs for video signals. It's important to note that the Sony and PTZOptics systems are NOT cross-compatible.

4

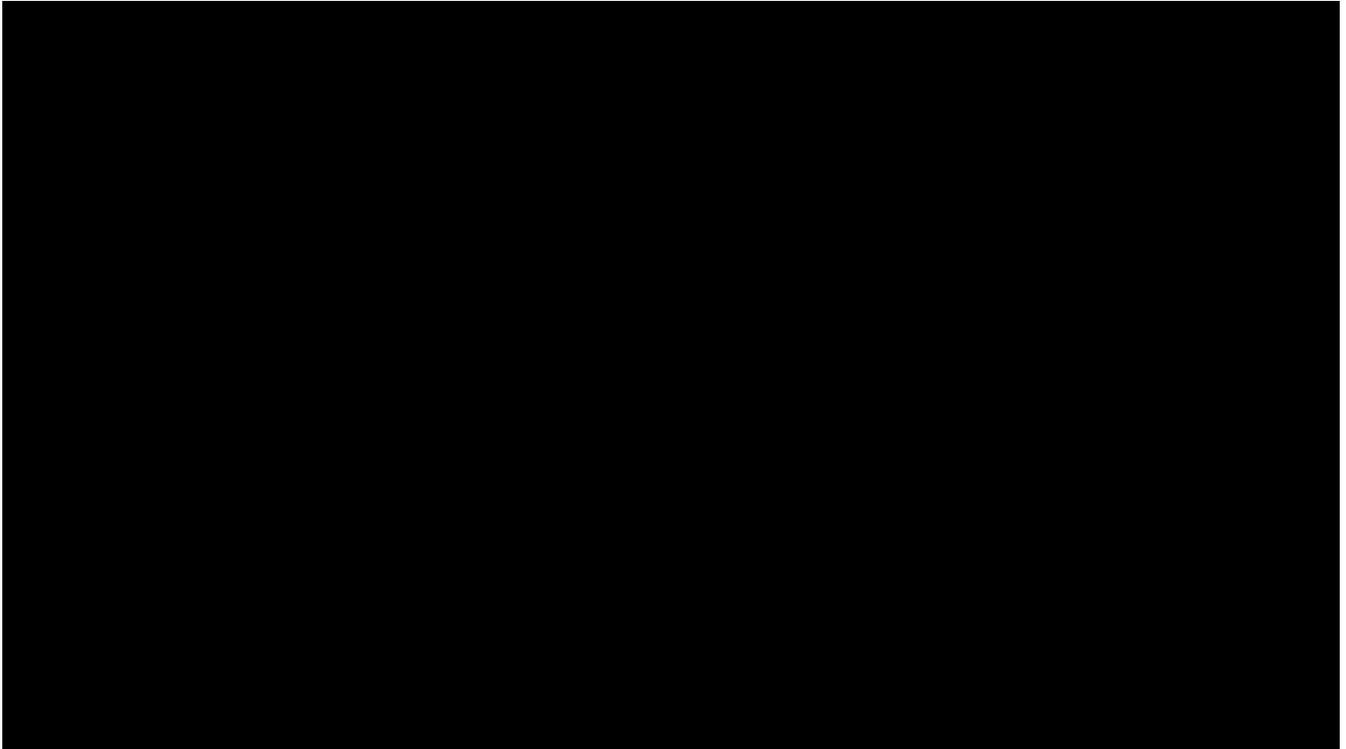
MARSHALL CV-505 POV CAMERA The Marshall CV-505 is a compact camera, about the size of a Go-Pro. It's designed for being inconspicuous and can be set in many places where a camera person with a tripod would be too obtrusive. The Marshall features HDMI and SDI outputs, but cannot record independently.

5

BLACKMAGIC STUDIO CAMERA 4K PRO The BlackMagic Studio Camera is a camera body that requires additional equipment to be fully functional. It features an interchangeable lens system that allows the user to choose the best lens for the job. It also uses a rail system for attaching accessories, like zoom and focus controllers.

CONTINUE

Sony NX5U Setup and Important Functions



CONTINUE

Sony PTZ Showcase



CONTINUE

Adjusting Camera Light

Click through this selection of steps necessary to adjust light on our wide variety of cameras you will find yourself using this summer. We will close with a brief overview of other additional features.

Step 1

Iris

Iris refers to the size of the hole through which light comes through. Typically, it is the first setting you will adjust when trying to change the brightness of your shot. The "f" number on the LCD screen represents iris. The lower the number, the more light allowed in, the brighter the shot.

Step 2

Gain

An electronic increase or decrease to the light-sensitivity of your camera's sensor by digitally multiplying the given brightness back on itself. Since it's digital, it makes the shot noisy/grainy if you go too bright. Use the gain as a base, then work with iris. The gain is the "db" number on the LCD screen. With gain, the higher the number, the more times the shot's brightness is multiplied, the brighter the shot.

Step 3

Shutter Speed

Refers to the speed at which the shutter moves, thus allowing light into the camera. For most of our video work, the shutter speed should be set at $1/60$, or $1/60$ th of a second. This allows the most light in without creating a noticeable blurring effect or getting a "rolling shutter" effect from LED lights.

Step 4

Neutral Density Filter

Evenly filters all colors of light to reduce the intensity at which it comes through the lens, keeps the camera shot from being too bright when filming in a bright environment. It's like putting sunglasses on your camera lens.

Other Additional Features

Peaking indicates where your focal point is on the camera viewfinder. When peaking is enabled, the outlines of an object in focus will be marked.

Zebra stripes are a brightness indicator to let you know how close you are to pure white exposure, like a warning signal. You set your stripes indicator to a percentage level that refers to your exposure- so zebra level 70 is 70% of total possible exposure, meaning 70% of the way to being pure white

Tripods



Tripod Movement

- 1** **Pan:** Movement left to right, side to side. Resistance is controlled by the pan drag ring or knob, depending on the tripod model.
- 2** **Tilt:** Movement up and down. Resistance is controlled by the tilt drag knob, usually on the right side of the tripod as the operator is facing the tripod.
- 3** **Fluid drag:** “Drag” refers to the resistance the tripod head makes against the movement, created by fluid-filled chambers inside the tripod head. The amount of drag you want to keep your shot steady will change based on preference.
- 4** **Level:** To compensate for unlevel surfaces, the tripod head can be independently leveled. The knob for level release is underneath the tripod head, it’s a vertical handle that can be twisted. You can use the level bubble to line up the bubble in the circle, or eyeball it and level on something in the room.



Complete the content above before moving on.

Projection

BARCO F80-Q9

EPSON POWERLITE PRO G6800

EPSON POWERLITE 965

Our primary large venue projector. For some events, we set up several of these projectors to display on large screens. It is a 9,000-lumen laser projector with many features, including an SDI input and corner correction.

The case must contain a power cable, remote, mounting hardware, and safety cable.



BARCO F80-Q9

EPSON POWERLITE PRO G6800

EPSON POWERLITE 965

These are lamp-based, 7,000-lumen projectors, typically used in medium to large venues. They also feature corner correction, but only have an HDMI input, so converters are frequently required when setting them up. Make sure to retract the feet, center the lens shift, and return the neck collar before putting them back in their cases.

The case must contain a power cable, remote, and safety cable.



BARCO F80-Q9

EPSON POWERLITE PRO G6800

EPSON POWERLITE 965

These diminutive 3,500-lumen projectors are used for smaller rooms such as breakouts and boardrooms. They feature corner correction and have HDMI inputs.



LED Wall Panels

You may find that for some of the summer run, GNTV will use LED wall technology instead of projectors and screens. An LED wall is made up of individual panels that fit together to make a single screen in a customizable size. The panels are very fragile and must be handled with utmost care.

Golden Rules of LED wall panels



Interns should never handle LED panels without close full time staff supervision.

Step 1

Rule 1

Only hold the panels by their handles. Do not grab the sides, and keep your hands off of the front of the panel. HANDLES ONLY.

Step 2

Rule 2

LED panels should only ever sit in their cases or be rigged in a functional wall. Do not set panels on the ground, and do not lay them on a stage and walk away. If we hit a snag while putting up a wall and you get tired of holding a panel, put it back in its case.

Step 3

Rule 3

Always handle the panels like they are delicate and expensive, because they are!

When rigging panels together, line them up carefully. Do not ever force a panel to lock in. If the latch does not lock, the panel is not lined up correctly. Look for the grooves and holes on the edges of the panels, which are designed to help the panels fit together snugly.

When placing panels in their cases, do not bump the panel into the dividers. Pay particular attention to the ethercon release tabs that stick out from the panel's back and the LEDs themselves on the panel's front.

In their cases, the panels should be placed so that the handles fit together in pairs. Secure the panels together by tying the top handles together with a cable tie.

Step 4

Rule 4

MOST IMPORTANTLY: If you have a question about our LED panels, don't hesitate to ask. We would much rather you ask and be sure than risk any damage to the panels or to people.

In Summary

Be extra careful and attentive when working with this delicate equipment.



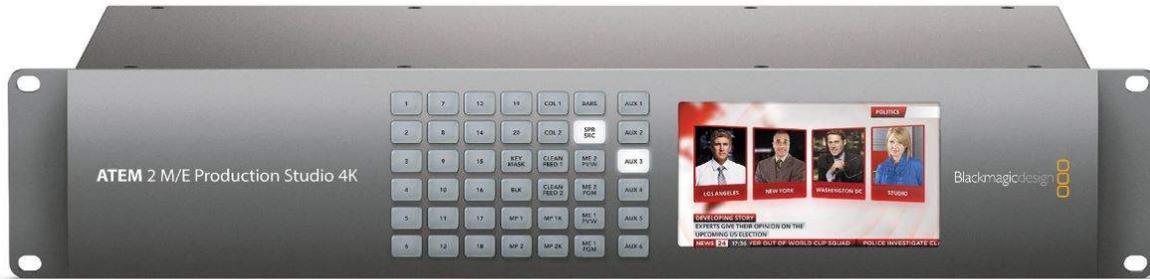
Complete the content above before moving on.

And finally... Video Switchers

How do all the inputs and destinations of video we have previously covered get from point A to point B? The answer is a video switcher. We use a few different models at GNTV, mostly from BlackMagic Design.

ATEM 2ME Production Switcher —

This is the backbone of most of our live event video setups. It has 20 SDI inputs, 6 routable Aux outputs, as well as dedicated outputs for each ME. Can be controlled with a computer over a network, or with a standalone hardware Broadcast Panel.



ATEM Constellation 8K

The Constellation has 40 SDI inputs and 24 routable Aux outputs, along with 4 Multiview outs. GNTV has 2 Constellations, one for the virtual event Master Control rig in our office, and one that travels in the Voodoo rig.



ATEM Mini Switchers

GNTV uses several models of the ATEM Mini line of switchers. These switchers all have HDMI only for inputs and outputs and have between four and eight inputs depending on the model. They are very useful for smaller events and have specialized features that make them great for live streaming events.



Complete the content above before moving on.

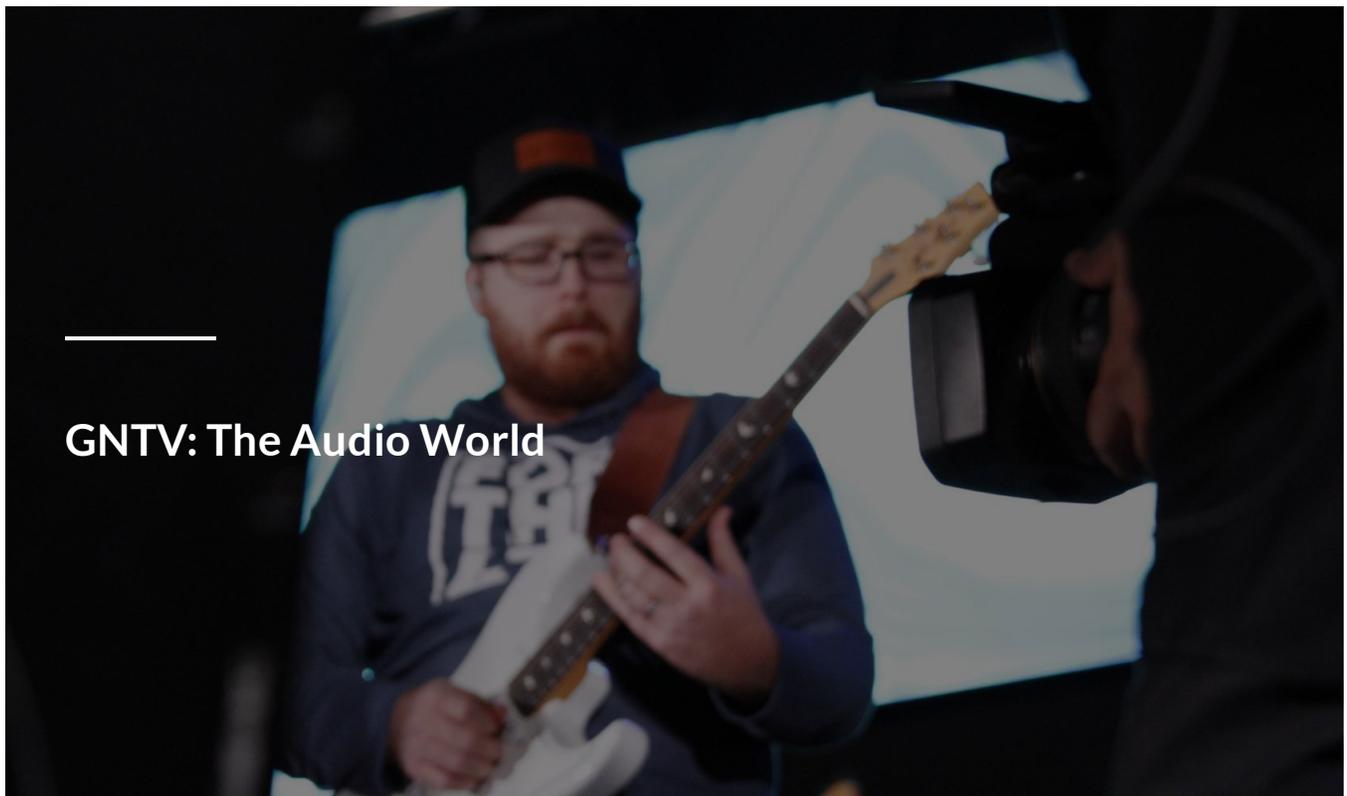
Now, it's time to take a deep dive into the world of audio at GNTV! Click the button to proceed.

AUDIO WORLD

Lesson 4 of 7

Audio World

JG Jack Glover



GNTV: The Audio World

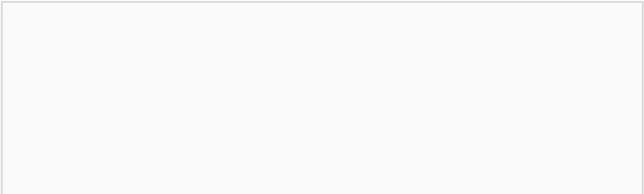
**A Brief Introduction and Overview of Consoles, Speakers,
and Stage Boxes**



CONTINUE

Speakers and Subs

GNTV owns many types of speakers and subwoofers. Speakers can be used as main PA, front fills, side fills, and monitor wedges. Subs are used to provide low end support. Take some time to go through the selection of flashcards below to put names and images together for several of our speakers and subwoofers.





KLA 12

1 of 5



KLA 181 Sub

2 of 5



Behringer 208D



3 of 5



JBL Eon 10 "Gerbil"

4 of 5



Mackie SRM-450

The QSC KLA speakers can be used as single speakers on sticks or can be combined into flown line arrays, which means they travel in bags with a set of cables for power and signal. The rest of the speakers come with an IEC universal power cable. If there isn't one in the speaker's bag, there should be extras in the power tub.

Microphones

GNTV owns a number of different microphones, including wireless headsets and lapels, wireless handheld microphones, podium mics, and specialty instrument mics. Microphone choice and placement vary by intended use and available equipment, all at the discretion of the Audio Director. Interns will often help patch a band or set up choir mics.

In terms of wireless mics, GNTV employs several kits, including Shure ULX-D and BLX-R systems. When packing up a kit at an event or putting away a kit at the office, make sure you account for all of the components as listed in Current, including transmitters (both belt pack and handheld), mic clips, lapel mics (the kind you pin to your shirt), headset mics (the kind that fit over your ear), antennas, rechargeable batteries, etc.

Microphone Stands

BOOM MIC STAND

STRAIGHT MIC STAND

SHORT BOOM MIC
STAND

DESKTOP MIC STAND

A boom stand has a tripod base and an adjustable arm, allowing you to position it more freely to man an instrument or voice.



BOOM MIC STAND

STRAIGHT MIC STAND

SHORT BOOM MIC
STAND

DESKTOP MIC STAND

A straight stand has a metal base and a non-adjustable arm. During annual conferences, these are predominantly used for floor mics in the audience.



BOOM MIC STAND

STRAIGHT MIC STAND

SHORT BOOM MIC
STAND

DESKTOP MIC STAND

A short boom stand is similar to a regular boom stand but smaller. These are most often used for instruments low to the ground such as kick drums and guitar amps.



BOOM MIC STAND

STRAIGHT MIC STAND

SHORT BOOM MIC
STAND

DESKTOP MIC STAND

A desktop stand is similar to a straight stand, but it's small enough to sit on a table in front of a presenter. We also use these for many of our wireless antennas.



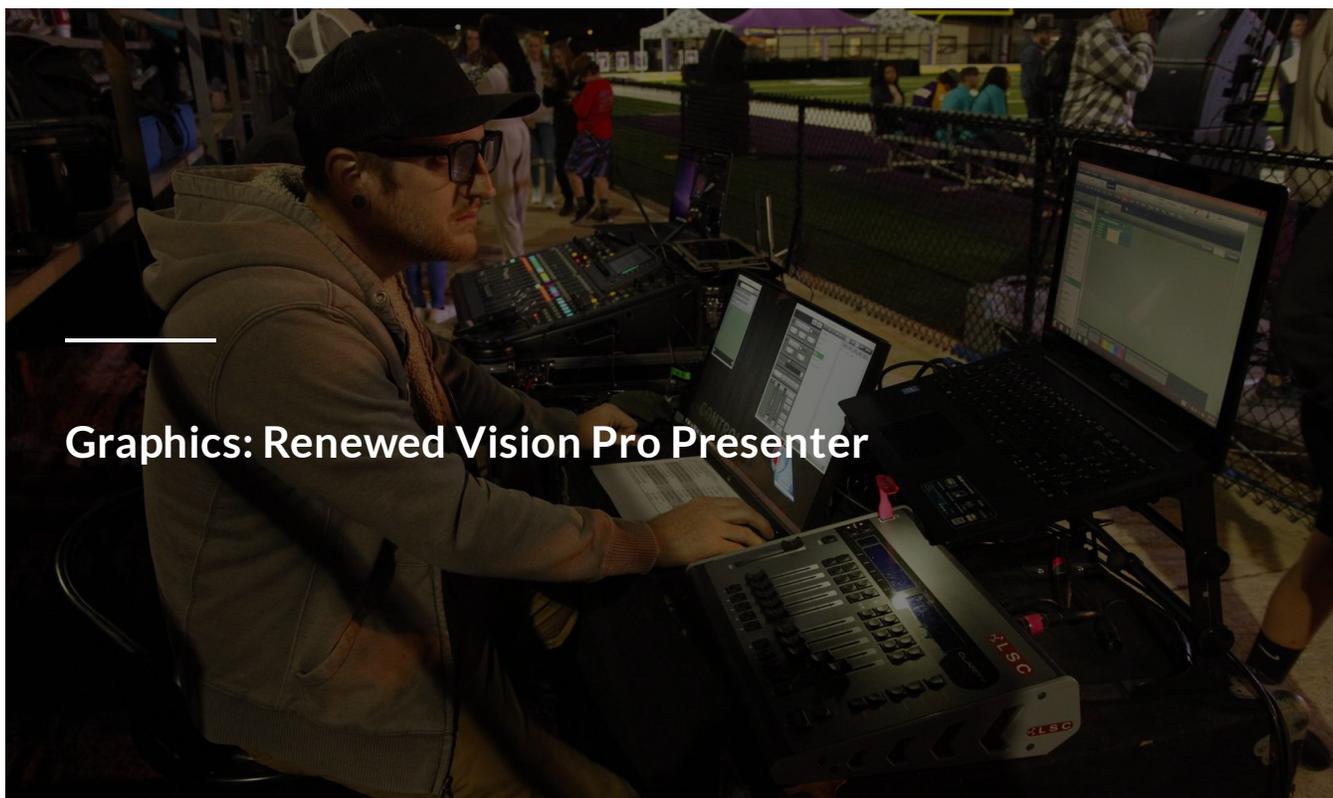
Complete the content above before moving on.

You have now completed the GNTV audio training. Let's take a look at our graphics program. Click the button to proceed.

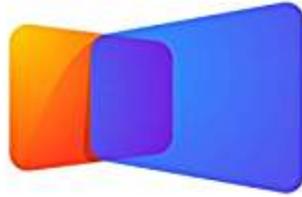
[GRAPHICS](#)

Graphics

JG Jack Glover



Graphics: Renewed Vision Pro Presenter



ProPresenter®

Renewed Vision Pro Presenter

At GNTV, we use ProPresenter to produce presentation graphics, lyrics, and multimedia for live events. It makes the stress of high-quality live production manageable and is quite a simple program to understand.

To best develop a quick understanding of the program, our team has developed an introduction video to the program's functions and shortcuts. Please take the time to carefully watch the video to prepare yourself for GNTV graphics in a live event setting, both virtual and in-person.

CONTINUE



If you are interested in getting some immediate hands-on experience, Pro Presenter 7 is available to download for free in a demo mode. Feel free to explore by clicking the link below.

<https://renewedvision.com/propresenter/>

CONTINUE

You have now successfully completed all of the modules in the GNTV Summer Training Program. To ensure you are prepared for what's to come, click the button to complete a knowledge check.

KNOWLEDGE CHECK

Lesson 6 of 7

Final Knowledge Check



This quiz includes content from the modules previously completed in this training program.

Question

01/06

Which of the options does this picture represent?



-
- Short Boom Mic Stand
 - Straight Mic Stand
 - Boom Mic Stand
 - Tabletop Mic stand

Question

02/06

Edison, Camloc, and Sacopec are directly involved with which category of cables

Audio

Power

Lighting

Video

Question

03/06

Manual user adjustments that are controllable on the Sony NX5U include iris, focus, and ...

Type your answer here

Question

04/06

What piece of gear is responsible for collecting video inputs and distributing video outputs?

- Stagebox
- Projector
- Switcher
- Extender

Question

05/06

T/F - Interns should never handle LED panels without close full time staff supervision.

True

False

Question

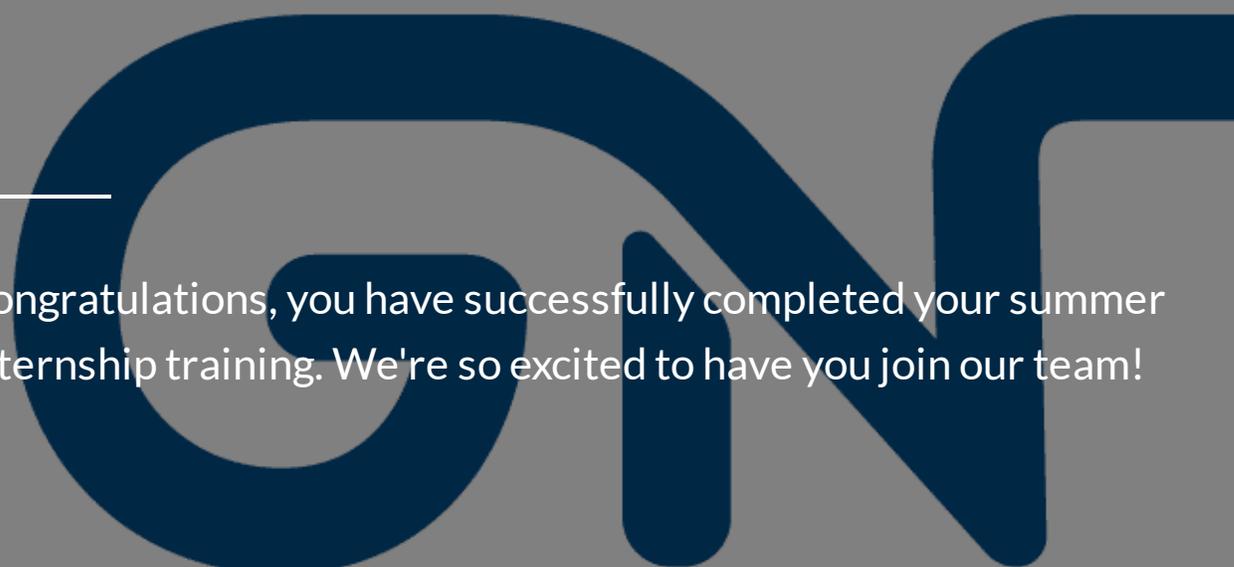
06/06

_____ your camera takes into account the "color temperature" of a light source and removes unrealistic color casts so that objects which appear white in personal look right on video.

- Gain adjustment
- Brightness preset
- Shutter speed
- White balance

Conclusion

JG Jack Glover

A large, dark blue, stylized letter 'G' logo is centered on a gray background. The 'G' has a thick, rounded stroke and a small gap at the top. To the left of the 'G', there is a small, brown, teardrop-shaped graphic element. A thin white horizontal line is positioned above the 'G' logo, extending from the left edge of the text area.

Congratulations, you have successfully completed your summer internship training. We're so excited to have you join our team!

CONTINUE