What Engineers Need to Know about Video Streaming w/ Radio

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Top 6 Items to Consider When Starting Video Streaming

1) Computers

2) Production Software

3) Streaming Platforms/Services

4) Equipment/Hardware

5) IT/Internet

6) Preparation/Local Resources

1) Computers

Joel Losego

Lenovo Legion 5 Gaming Laptop

Casey Claxon

MacBook Pro 2019
MacBook Pro 2012

Mark Foerster

MacBook Pro M2 Processor

2) Production Software

Joel Losego

-VMix

-OBS Studio

Casey Claxon

-Wirecast Pro 14
-Wirecast Pro 15

Mark Foerster

-Production Truck (Hudl)

Streaming Video Production Software

Production Software Functions:

1. Encoding

2. Mixing and Production

-recording video

-connecting video & audio

-stream simultaneously to multiple platforms

-Scenes and mixing

-Control/flexibility in the audio, video, encoding and processing

3.Pricing - Free to ??

Streaming Video Production Software

Favorite Production Software Options:

OBS Studio - https://obsproject.com/

Pros:
It's free
OBS is available for Mac, Windows, and Linux.
Easy-to-use for beginners
Frequent updates
Able to function on lower-quality internet
Cons:
Some limitations on features
Room for improvement for plugins

Streamlabs OBS - https://streamlabs.com/
Pros:
Easy for beginners
Tools for designing stream layout
Selective recording
Gaming overlays
Tools for tipping and donations
Cons:
Limitations on graphic overlays
Some features are clunky
Streamlabs OBSp is free to download, but users must pay for "Prime" to fully access all of the features.

VMix - https://www.vmix.com/

Pros:
Plans for every budget
60-day risk-free trial
Users rave about switcher functions
Available in five different versions and your purchase never expires.

Cons:
Only available for Windows PCs.
However, running it on a Mac is possible using it via Boot Camp.

Wirecast - https://www.telestream.net/wirecast/overview.htm
Pros:
Easy-to-use, user-friendly platform
Compatible with most popular operating systems
Fully loaded with valuable features
Green screen, Instant replay

Cons:
High price point, It consumes a lot of computer memory

Many others available to choose from. Your streaming provider may provide proprietary options. (Production Truck from Hudl)

3) Streaming Platforms/Services

Joel Losego

-Youtube

-Facebook

-Meridix Sports Streaming Service

-Re-Stream Multi Stream Service

Casey Claxon

-YouTube
-Facebook
-PrestoSports / Stretch Internet

Mark Foerster

-IHSAATV.org

4) Equipment/Hardware

Joel Losego

Canon XA35	4
BlackMagic Switcher	2
Hollyland Mars 400S Pro	1
SDI Video Transmitter	1
Mini Monitor Display	1
Shure MVI Audio	2
Lenovo Legion 5 Laptop	3
Sennheiser Wireless Mic Sys	2
Manfrotto Tripod	3
Tieline Codec	4
Neewer Mono Shotgun Mic	2
Eartec UL4S Wireless Headsets	2

Casey Claxon

2012/2019 Macbook Pro	6
Comrex Codec	2
Moukey Sub Mixer	4
Yamaha Audio Mixer	1
Behringer Headphone amp	2
BlackMagic Switcher	4
Sony AX33	3
Sony MC88	4

Mark Foerster

Canon HF R800	2
100 ft HDMI	2
Tieline Codec	1
BlackMagic Switcher	1
Manfrotto Tripod	2
HDMI Capture Device	2
Macbook Air M2 2022	1
Hardshell Case	1
PreSonus Audio Box	1
USB-C hub	1
Extention Cord 100 ft	3
Power Strip	2

5) IT/Internet

Joel Losego

-IT at the School/Pressbox (primary)

-Mifi Units for backup (all 4 major carriers)

Casey Claxon

-IT at the School/Pressbox (primary)

-Verizon Mifi Units

-Verizon Hotspot

Mark Foerster

-CradlePoint Multi Signal Internet Box

INTERNET Video Streaming Recommendations

Test Your Connection- Speedtest.Net: https://www.speedtest.net/

Recommended Video Bitrates

Content should be encoded and uploaded in the same frame rate it was recorded.

Common frame rates include: 24, 25, 30, 48, 50, 60 frames per second.

1080p @60 fps= Resolution: 1920x1080 Video Bitrate Range: 4,500-9,000 Kbps

1080p= Resolution: 1920x1080 Video Bitrate Range: 3,000-6,000 Kbps

720p @60 fps= Resolution: 1280x720 Video Bitrate Range: 2,250-6,000 Kbps

720p= Resolution: 1280x720 Video Bitrate Range: 1,500-4,000 Kbps

480p= Resolution: 854x480 Video Bitrate Range: 500-2,000 Kbps

Recommended Audio Bitrates

Mono 128 kbps

Stereo 384 kbps

Minimum Recommended Connection:

10 mbps up

ReStream Multi-Stream Service

https://restream.io/

Internet Access Network Settings

Port 1935 – If you are streaming to Twitch or any private CDNs such as Livestream, UStream, Wowza, DaCast, and others, then you will need Port 1935 to be open.

Port 80 – If you are streaming to YouTube or Facebook, then you will need Port 80 to be open. Port 80 is the same port as is used to surf the web (aka http://).

Port 443 – Another port to be aware of and to check is Port 443. It is used to securely surf the web, do banking (aka https://) as well as to securely transmit other kinds of data, including streaming video and related information.

Online Port Checker: https://portchecker.co/

Google DNS For IPv4: 8.8.8.8 and/or 8.8.4.4

6) Preparation/Local Resources

- Our Story
    - Streaming partner backed out in July 2021
    - Local relationships
    - State relationships
    - National relationships

- School Relationships
- Three meetings with our core 3 schools
- Entered into agreements with each
- Gave them our expectations of them
- Asked what they expected of us

Questions?

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OAB VIDEO STREAMING GROUP
Resource Page:
https://oab.org/video-streaming-resources/
passcode: Stream!