**BHS Webinar on Drive-In Rehearsals**

<https://www.barbershop.org/the-drive-in-rehearsal-singing-safely-during-the-pandemic>

This is a series of four webinar sessions:

Wed & Thurs., 9/16-17/20, 8:00 pm EDT Introduction to the Drive-In Rehearsal

Wed, 9/23/20, 8:00 pm EDT Technical Session

Thurs., 9/24/20, 8:00 pm EDT Making Music in Sedans and SUVs

Wed., 9/30/20, 8:00 pm EDT Leading the Way in Chorus Safety and Success

Registration is free at:

[Session 1](https://us02web.zoom.us/webinar/register/WN_scnM8PZRRieczla58lupRg)

[Session 2](https://us02web.zoom.us/webinar/register/WN_At_9MunQTDewzrhpADgGpg)

[Session 3](https://us02web.zoom.us/webinar/register/WN_c4Hnh_HJTeSrCW3j2eNKvw)

[Session 4](https://us02web.zoom.us/webinar/register/WN_15pL2DCzRt6xXRrUn0-iVw)

# 9/16/2020 Session 1 Notes

The presenters were Rob France and Christian Hunter. Bryce \_\_\_ was introduced as a technical resource. Rob has been an audio technician for more than 40 years. With his help, Christian implemented drive-in rehearsals with Somerset Hills Harmony and Hunterdon Harmonizers this August. Other panelists are Manny Lopez, Charlie Ross, Matthew Marinelli and Don Staffin.

All BHS webinars are on [www.barbershop.org](http://www.barbershop.org/). Search for "webinar". Session recordings and slides should be available a day after each session.

References include the Somerset Hills "Hot Rods & Harmony" page on Facebook.

Some key takeaways:

* *You can do this!* It's not without challenges, but it works well.
* You'll be surprised to see how much you have missed singing together.
* Hunterdon Harmonizers actually gained members during the Pandemic as they became known as the only chorus in the area that was singing.
* Safety outweighs our desire to sing as usual.
* Alternatives like widely spaced singing without mikes aren't good enough because singers can't hear each other.
* Online alternatives Jamiulus, Jamkazam, JackTrip, etc. are promising but aren't ready yet.

There are numerous equipment options. SHH and HH went with whatever they could find cheaply and were happy with the results. Their basic setup is this:

The director and sound tech stand on a porch of a church, home, etc. with restroom access. Singers gather in cars in the parking lot or a large back yard. They form an arc - perhaps two or more cars deep - facing the director. A "valet" directs each driver where to park. Each singer has a mike with a 25 foot cable, which they will keep until rehearsals return to normal. Cables from the wings are extended as needed. SHH used Shure SM-48 mikes, which they bought at a quantity discount for $36 each. Mikes have cloth-covered foam windscreens. (Search Amazon for "music life".). Rob bought ten 25' mike cords on eBay for about $4.50 each. They paid $125 for a used 16-input snake on Facebook.

The tech plugs up to 16 cables to a "snake" (audio bundler, AKA "stage box") lying on the ground inside a weatherproof plastic box. (Other snakes have 12 or 20 inputs.). If there are 17-32 singers, a second "snake" is used, etc. Cables connect the snakes to the mixer. SHH and HH used a 16-input Mackie 1604-VLZ4 analog mixer they bought used on eBay for $50. With more singers, additional mixers can be slaved in.

To sing from the driver's seat, singers should mount their mikes on or by the steering wheel pointing toward their mouths. Singers can stand at stand mikes outside their cars. Anyone with a window open or standing outside is expected to maintain a 12 foot separation from others for Covid safety.

No one shoud be walking or driving over the cables.

An inexpensive FM transmitter at the sound board is set to a vacant FM frequency. Participants and interested onlookers tune into it. They can use car radios or portable radios. Headsets are optional for singers but pretty well necessary for the director and sound tech.

Wireless mikes are an alternative with some advantages, but they cost more and require selection of a free, legal frequency. Also, they all have switches and batteries; someone will inevitably forget to keep his mike switched on or will have a dead battery.

To find a transmitter, search Amazon for "fm broadcast transmitter". A good mid-range FM transmitter might be the Retekess TR-506, available in both plug-in AC and battery powered versions with a range of up to 1000 feet. Cheaper "plug and play" transmitters such as the Scosche FMT4R may be too short-range.

Mixers can be borrowed from a church, another chorus, etc.

Serious audio enthusiasts unafraid of a $1000+ investment and increased complexity might consider a 32-input digital mixer with its support for recording of individual channels.

It's possible to mix two dynamic mikes (not condenser mikes) into one channel, but this prevents the sound tech from balancing the individual voices.

Learning tracks can be mixed in for singers to sing along to.

It's important to test the process on a quartet or VLQ before inviting the entire chorus.

A sample rehearsal schedule:

30 minutes tech and support team setup

30 minutes singers arrive, are directed to parking spaces. Hookup, mike test.

Consider staggered arrival times.

2 hours rehearsal, with a 5 minute break every 30 minutes to "disburse aerosols"

During breaks, drivers may idle their cars (3 minutes max in New Jersey) to recharge car batteries and run heating or cooling.

30 minutes support crew breakdown.

Singers must alcohol **sanitize** mikes and cables.

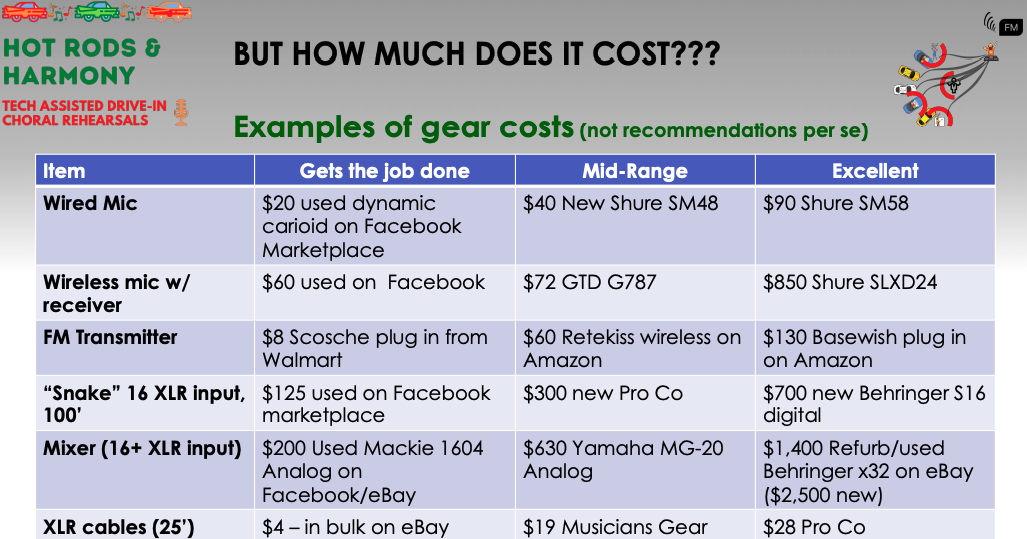
Singers are instructed always to wear masks outside their vehicles. The director can be exempt.

For financing, see if your county has CARES Act funds you can apply for.

Somerset Hills ran a Facebook ad with the title "Local choruses seek used Music Equipment for Drive-In Rehearsals". They used the free tool at <http://www.canva.com/> to create this digital content.

The webinar resource page was:





# 9/23/2020 Session 2 Notes

The presenters were Rob France and Bryce Denney.

## FM Transmitter Options

Cheap: Scosche, ~$10 at Wal-Mart. Very short range, unreliable. *Others that are too short-range: VicTsing*

Better: Wireless rechargeable – such as Retekiss TR506.

Must be FCC Part 15 compliant; some older units may not be due to band allocation changes. Use as little power as possible.

Best: Base unit – wired AC power. The presenters use the Basewish CZE-7C base unit ($99.99; $65 on [banggood.com](https://www.banggood.com/CZERF-CZE-7C-1W-or-7W-Wireless-PLL-Stereo-FM-Transmitter-with-Outdoor-GP1-Antenna-Kits-p-1662247.html?utm_source=googleshopping&utm_medium=cpc_organic&gmcCountry=US&utm_content=minha&utm_campaign=minha-us-pc&currency=USD&createTmp=1&utm_source=googleshopping&utm_medium=cpc_bgs&utm_content=frank&utm_campaign=frank-ssc-us-all-newcustom-ncv90-0623&ad_id=443948744865&gclid=CjwKCAjw_Y_8BRBiEiwA5MCBJhnGZ-Po8N6wNKcCxoZjEgHVruUQrbRZyztKQm_RpAhwrYss0GQ1uxoCWsEQAvD_BwE&ID=514829&cur_warehouse=CN))

Rolls HR70 $199. 40-50 foot range.

*I found:*

Lewong 5W/15W PLL Stereo FM transmitter for $168.00 at [wish.com](https://www.wish.com/product/585f8fcaf4021c4f51e7dbba?hide_login_modal=true&from_ad=goog_shopping&_display_country_code=US&_force_currency_code=USD&pid=googleadwords_int&c=%7BcampaignId%7D&ad_cid=585f8fcaf4021c4f51e7dbba&ad_cc=US&ad_lang=EN&ad_curr=USD&ad_price=168.00&campaign_id=8701430383&retargeting=true&gclid=CjwKCAjw_Y_8BRBiEiwA5MCBJmacph7x90P65cRS7hpdovlyFA5xYgUqRqzXUyBALFXQL6MOM6cSRRoCfhwQAvD_BwE&share=web)

Whole House FM Transmitter 3.0 ($124.99), 150 foot range "guaranteed. Currently unavailable on Amazon.

Top 10 guide: [msn.com](https://www.msn.com/en-us/Lifestyle/rf-buying-guides/best-fm-radio-transmitters-reviews)

LCD PLL 0.5W <https://www.ebay.com/itm/133542826928> claims a 1000 foot range.

FS-CZH 05B: $184.99 on [amazon](https://www.amazon.com/0-5-Fail-Safe-Long-Range-Transmitter/dp/B003FO4UHW/ref=asc_df_B003FO4UHW/?tag=hyprod-20&linkCode=df0&hvadid=312150546687&hvpos=&hvnetw=g&hvrand=18108760041801149665&hvpone=&hvptwo=&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9003813&hvtargid=pla-526520234118&psc=1&tag=&ref=&adgrpid=70581793188&hvpone=&hvptwo=&hvadid=312150546687&hvpos=&hvnetw=g&hvrand=18108760041801149665&hvqmt=&hvdev=c&hvdvcmdl=&hvlocint=&hvlocphy=9003813&hvtargid=pla-526520234118). Claims a 100 yard range (H mode, built-in antenna).

Before selecting an FM frequency, listen on a few receivers to ensure the channel is open at your location.

## FM Receiver Options

Use of ear buds or headphones eliminates the risk of feedback.

Car radio: Can drain the car battery. Let drivers idle for 5 minutes every half hour to recharge. Some Subarus and Lexuses have noticeable latency; others don't. To reduce the likelihood of feedback, play through the rear speakers.

Mobile phone with an FM chip enabled. (Most have it disabled; download an app that unlocks it.). Test for latency. Use ear buds.

Portable radio: Some can record (e.g., Prunus, $16 on Amazon).

Other handheld radio with earbuds.

Headset radio. $12 - $14. Sound is mediocre.

## Mixer

Mackie ProFX 12. $240-$340 refurbished: 6 mike inputs

Mackie 1604: Around 30 years old. Might find one used on Facebook Marketplace, etc. Has an Assign to Main Mix function to assign singers to groups (tenor, lead, bari, bass) with separate faders and outputs.

Digital:

Behringer x32: 32 channels. New $2500, refurbished $1400. Might be able to rent or borrow.

Soundcraft Ui16: "headless", meaning controlled via laptop or phone. Stage box / snake can be near the cars.

Ganging mixers: Use balanced cables. Primary and secondary mixers should have the same channel groupings.

All mixers they've looked at must have line power. An alternative is a battery pack, such as the 300W Enginstar ($250). (The term "powered mixer" means a mixer with an audio amplifier to power speakers.)

## Mikes

Listen before you buy!

For a comparison, search YouTube for "Sound Guy Hang out".

Dynamic: Behringer BA85a $24, Shure SM48 $40

SM58 $99 is Rob's favorite.

Condenser: better for soloists; more expensive; more sensitive, so more background noise. Require phantom power.

Cardioid: This refers to the sensitivity geometry being somewhat heart-shaped. Avoid omnidirectional mikes.

Avoid switches if possible. People leave them off by mistake.

### Bryce on wireless mikes:

Fixed or programmable frequencies.

It's no longer legal to use mikes in the 600 MHz range, so beware of used wireless mikes. Legal ranges are 200, 500 and 900 MHz. It's best not to get a lot of mikes in the same range, especially in the 200 MHz VHF range, because the spectrum gets crowded.

The free app Shure Wireless Workbench can recommend frequencies.

A wired mike will sound better than a wireless mike at the same price.

## Tips, Tricks and Traps

Know the mixer signal path: preamp (has gain control) --> channel (has fader) --> main mix (fader), FM Tx gain.

Which to adjust when? During setup, play some music through the system. Adjust preamp gain with faders on 0 dB (i.e., unity gain). Leave some headroom on the VU meter. Set FM gain just high enough. Then tweak the channels.

Draw a system diagram and use it as your packing list.

If there is a problem, the first suspects should be cables and switches.

Mark any bad cable with red tape.

Carry a repair kit.

Equipment sources: Amazon Smile, eBay, Facebook Marketplace, Zounds.

<http://thedenneys.org/pub/music/driveway-choir/>

# Bill Stearns's Driveway Choir Shopping List:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| URL for the original is: |  | <https://docs.google.com/spreadsheets/d/1quSNAMkmMMxrgORnqdCtMRcXCjIZ0kG52AVlA0vwlAU/edit#gid=0> |  |  |  |  |
| For questions, contact William Stearns (william.l.stearns@gmail.com) |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Category | Item | Requested # | # to order | Cost/item | Total | URL |
|  |  | Edit the yellow | override if |  |  |  |
|  |  | boxes | needed |  |  |  |
|  |  |  |  |  |  |  |
| WIred mic |  | 0 |  |  |  |  |
|  | AmazonBasics Cardioid microphone |  | 0 | $21.67 | $0.00 | <https://www.amazon.com/gp/product/B07L6C5VRW/> |
|  | 25' XLR cables |  | 0 | $12.32 | $0.00 | <https://www.amazon.com/gp/product/B01JNLUMMW/> |
|  | Extra 25' XLR cables | 0 | 0 | $12.32 | $0.00 | <https://www.amazon.com/gp/product/B01JNLUMMW/> |
|  |  |  |  |  |  |  |
| Wireless mic |  | 0 |  |  |  |  |
|  | GTD-787H Kit |  | 0 | $299.00 | $0.00 | <https://www.amazon.com/gp/product/B07KRMX7VH/> |
|  | 4 channel XLR snake |  | 0 | $19.99 | $0.00 | <https://www.amazon.com/gp/product/B006HR1H1Q/> |
|  | On-Stage RS7030 Rack |  | 0 | $36.95 | $0.00 | <https://www.amazon.com/gp/product/B000CD1R84/> |
|  |  |  |  |  |  |  |
| Mixers |  |  |  |  |  |  |
|  | XTUGA CT-120S |  | 0 | $125.99 | $0.00 | <https://www.amazon.com/gp/product/B07QNWP6WQ/> |
|  | XLR patch cable |  | 0 | $8.21 | $0.00 | <https://www.amazon.com/gp/product/B01JNLTTKS/> |
|  |  |  |  |  |  |  |
| FM transmitter |  |  |  |  |  |  |
|  | Rolls HR70 FM transmitter | 1 | 1 | $199.99 | $199.99 | <https://www.sweetwater.com/store/detail/HR70--rolls-hr70-fm-broadcast-transmitter> |
|  |  |  |  |  |  |  |
| FM Headsets |  |  |  |  |  |  |
|  | Zeadio FM headset |  | 0 | $15.99 | $0.00 | <https://www.amazon.com/gp/product/B0839BXH89/> |
|  |  |  |  |  |  |  |
| Power |  |  |  |  |  |  |
|  | Jackery 240Wh | 0 | 0 | $249.99 | $0.00 | <https://www.amazon.com/gp/product/B07D29QNMJ/> |
|  | 50' 120V extension cable | 1 | 1 | $19.89 | $19.89 | <https://www.amazon.com/gp/product/B0775VBBR1/> |
|  |  |  |  |  |  |  |
| Additional |  |  |  |  |  |  |
|  | AA batteries (24 pack) |  | 0 | $56.75 | $0.00 | <https://www.amazon.com/gp/product/B07CWK26LG/> |
|  | Battery case |  | 0 | $15.99 | $0.00 | <https://www.amazon.com/gp/product/B086BVXL66/> |
|  | Discharged battery case | 1 | 1 | $10.99 | $10.99 | <https://www.amazon.com/gp/product/B085WJH935/> |
|  | Battery chargers | 1 | 1 | $39.49 | $39.49 | <https://www.amazon.com/gp/product/B07GGSPXDY/> |
|  | Mic windscreen 10 pack |  | 0 | $14.99 | $0.00 | <https://www.amazon.com/gp/product/B01CVMSFFQ/> |
|  | Jackyled power tower |  | 1 | $38.99 | $38.99 | <https://www.amazon.com/gp/product/B0753LL2R6/> |
|  | USB light | 0 | 0 | $10.99 | $0.00 | <https://www.amazon.com/gp/product/B06XH9XR12/> |
|  | Headphone amp | 1 | 1 | $29.42 | $29.42 | <https://www.amazon.com/gp/product/B003M8NVFS/> |
|  | Cable organizers | 0 | 0 | $7.99 | $0.00 | <https://www.amazon.com/gp/product/B0154MS9Q0/> |