

Radio Communications & Equipment,

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Communication is important, right? Very few folks will disagree with the concept, but the definitions and methods are always up for discussion! We can use phones, email, texts, or post-it notes – we can even shout across a crowded room - but regardless of the medium, we try to transfer information between people. Were we successful? That depends...was the message received as sent? If action was required, did we do it correctly and on time? The answers to those questions determine whether we actually communicated or not. In this article, I'm going to focus on the "why" of two-way radio communication equipment options and suggest simple procedures. (And no, you don't have to be a "ham".)

In a March 2018 article by the National Organization of Church Security and Safety Management (NOCCSM), the author listed his "objectives of a church security presence" and noted the challenges of developing a *"robust but discreet church security presence."* The proper deployment of two-way radios and accessories can help tremendously. So what defines "proper" for your church? Again quoting our NOCCSM author, *"The key actors in a church security program (pastors, usher/greeters and security personnel) should have real-time communications, preferably radios."* In my church, we have a dedicated multi-channel radio fleet for security during normal service times, and only have pastoral staff on the air for special events. Your church will have to determine how many radios are needed, and by whom, based on different factors such as campus size, construction type, the number of people in the congregation, the number of safety/security folks, your "threat environment," and your budget.

Common terms:

- Base Station – generally a fixed radio connected to a standard electrical power outlet and large antenna to maximize coverage
- Mobile Radio – a unit designed for use in a vehicle which draws power from the battery system and has an antenna mounted to the vehicle
- Handheld Radio – these are commonly referred to as "walkie-talkies" which are battery-powered and have a built-in antenna.
- Simplex Operation – radios transmit and receive on a single frequency or channel
- Duplex Operation – radios transmit on one frequency, but receive on a different one (duplex operations also generally involve the use of a repeater which is "overkill" for most church needs)
- License – depending on the frequency band and power output of the transmitter, radios may need to be licensed through the Federal Communications Commission (FCC)

When a church is first considering a radio system, something simple like Family Radio Service/General Mobile Radio Service (FRS/GMRS) radios are tempting due to their low cost, and ease of operation. However, since they are available nationwide and can be used by anyone, concerns about the short range (don't believe 3-5 miles as advertised), lack of privacy, and the potential for harmful interference need to be considered (because someone you don't know talking on "your" channel will happen)! Prices vary a lot, but can go as low as \$20/pair. Technically, the GMRS radios are supposed to be licensed, in spite of the low power output, but honestly most people don't have a license or FCC-issued call-sign.

We have chosen to use higher-powered 5watt Motorola BPR40 handheld radios in one of the available Ultra High Frequency (UHF) bands, and have a license giving the church a 10-mile radius operating zone. The handhelds cost around \$200 each, but the current prices have come down about 10%. The license application was processed through a commercial “frequency coordinator” and total cost for the processing and channels issued by the FCC was about \$600. The license is good for 10 years, and is just about due for renewal (at a much lower cost). We don’t use base or mobile radios, at least for now.

Between the FRS/GMRS and BPR40 radios, Motorola also makes the CLS-series radios like you’ll see being used by sales and customer service folks in Office Depot, Target, or movie theaters. These radios put out 1 watt (twice the power of FRS/GMRS), and come in single-channel (CLS1110) or four-channel (CLS1410) versions. These are “channelized” so that frequency coordination is simpler than the higher powered radios which are on individualized frequencies, and licenses are still good for 10 years.

Many other US manufacturers such as Kenwood, Vertex, and Uniden have excellent equipment, and can be configured to meet your particular needs. Foreign manufacturers have also come into the market (Baofeng, for example, which now manufactures here in the US) and have lots of great advertised features. However, some early versions didn’t meet FCC technical specifications that are designed to minimize harmful output and cause interference. Just make sure to do your research on more than the price-point.

Accessories: All handhelds are going to come with a battery charger, and you can often buy radios in sets, with a table-mounted charger. I recommend using a headset with any radio to avoid disrupting congregants listening to the pastor’s message and/or alerting a threat to your team’s tactics. These are generally discreet (imagine the Secret Service or FBI agents with clear earpiece and microphone on his/her sleeve *a la* “Designated Survivor”) and can be inexpensive (often under \$10). Like the radios, remember that you’ll get what you pay for! A low-cost headset may need to be replaced earlier than it’s more expensive cousin. Also, from experience, if you opt for the CLS series or FRS/GMRS radios, the antennas can be broken easily.

Regardless of your budget or church location, I firmly believe any church/synagogue or faith facility with more than one person on “security” must have radio communications equipment! We’re available to discuss options and make recommendations.

Finally, when you get your system up and running, I recommend against trying to use codes. “Plain speech” will avoid confusion, especially since you’ll most likely be on the air only a few times a week. It’s also a good practice to check in with the rest of the team on the air during a service so that everyone knows where any particular member is, and if there are other things to be aware of such as moving the offerings to the office during the service, suspicious individuals, or “lost” children.

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