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TEN BASIC STEPS FOR ESTABLISHING LOW POWERED BROADCASTING STATIONS

PRELIMINARY QUESTIONS

1. Is Low Powered Broadcasting permissible in this country?
2. Has the government issued a broadcasting license and is there an assigned broadcasting frequency?
3. Which type of radio transmission is preferred (AM, FM, or SW)?
4. Is the chosen site suitable for the desired type of broadcasting?
5. What types of radio receivers are already present in the area? (i.e., AM, FM, or SW)
6. Is electricity and/or batteries readily available? Is the supply of electricity intermittent or does the power fluctuate? Would solar power or a solid-state transmitter be most effective?

1. RADIO LICENSE & FREQUENCY SETTING

Most countries require a radio broadcasting license before setting up a low powered broadcasting station. Some governments seem reluctant to grant a license for religious purposes, so it may be wise to have a person experienced in the business world submit the application. Some countries may allow you to choose your own broadcasting frequency and equipment but licensing is almost always required. **This first step is essential because the license must be granted and the broadcasting frequency must be determined before a transmitter can be designed and built.**

2. EFFECTIVE RADIATED POWER (WATTAGE)

When applying for a license, the government and technicians will want to know the Effective Radiated Power (ERP). This is the wattage that the transmitter will actually radiate. The ERP not only varies with the wattage of the transmitter, it can also be impacted by the antenna design. There needs to be consideration of what is wanted and what is permitted in the area. Galcom can assist in making these calculations if necessary.

3. TYPE OF SIGNAL TRANSMISSION

AM signals generally work best if transmitting over bodies of water or in locations that typically experience high humidity. FM signals work best when transmitted from an elevated site. SW is similar to AM but is capable of covering greater distances.

If help is required in determining the best type of signal transmission, provide Galcom the following:

a) A video or film of the intended broadcasting site with a view of all directions (360 degrees).
b) A topographical map of the area.
c) A site plan of the broadcasting facilities.
d) A regular map with an outline of the area you plan to reach with your broadcasting signal.

With these, Galcom representatives can usually determine what is required without the additional expense of flying an engineer to the site.

4. TRANSMITTERS, ANTENNAS AND ACCESSORIES

a) Low powered AM and FM transmitters are portable units that can be provided to work on 220 VAC, 110 VAC or 12 VDC. They can also be designed to work on solar power if necessary.
b) Galcom can provide a special antenna which, when mounted 100 meters above the average terrain, will multiply the wattage by a factor of 10 (i.e., FM 10 Watt transmitters and 25 Watt transmitters will now radiate 100 and 250 Watts respectively). The advantage is a stronger FM signal that can broadcast over greater distances and penetrate buildings more effectively.
c) Antennas typically need to be mounted on a tower or on the top of a tall building.
d) Low power transmitters will typically broadcast over a radius of 10 to 40 miles, depending on the terrain and the antenna height.
e) Special grounding and lightening protection is required for antennas and transmitters.
f) Accessories required will include cables, brackets, insulators, connectors and wiring.

5. INSTALLATION

a) Once again, before installation can begin, it is essential that a radio broadcasting license has been issued and a broadcasting frequency has been assigned.
b) Documents tabulating the costs and a description of all equipment such as transmitter, antennae, cables, connectors, etc. are usually required for inspection by customs officials.
c) A small, dry, well ventilated, building is required for a radio station. (Screened windows may be required in warm climate areas)
d) Installation of equipment usually requires the expertise of an electronic technician. Often, a local electronics technician is available for installation. If necessary, Galcom can provide a technician but this would result in additional costs for airfare, accommodation and meals for three to seven days.
e) It is usually helpful if a number of local people are available to assist with building construction, set-up and installation of the tower, antenna and other equipment. Typically, within 3 to 7 days a radio station is ready to begin broadcasting.

6. PERSONNEL

Trained staff are required to operate the studio equipment, plan and prepare programs and oversee the ministry goals.

7. RADIO STUDIO

A basic radio studio includes the following:

- One mixer/amplifier
- Two microphones: one unidirectional (announcer) and one omni-directional (group)
- Two microphone stands: table style (announcer) and floor model (group)
- Dual audio cassette deck; DVD/CD/MP3 player and professional headphones
- Power cords and at least one multiply outlet power bar

This all fits into one large suitcase for air travel
Tables, chairs, program tapes and discs, etc. will be extra.

8. SOLAR FIX-TUNED RADIOS

Galcom can provide small, pocket-sized radio receivers that are designed for rugged conditions and ideally suited for use where people do not have or cannot afford a radio. They are available in AM, FM and SW with a single band which is locked into a fixed frequency. One switch operates on/off, low, medium and high volume. Standard models operate on solar power with rechargeable batteries. Special models are available with 110 VAC or 220VAC adaptors.

9. FUNDING

Funding must be provided before a radio station project can proceed. Often, churches and other organizations are interested in joint funding such projects providing that all preliminary criteria and conditions are met.

10. SHIPPING & CUSTOMS

Shipping to most countries from Galcom's headquarters in Canada is usually not a problem. However, in some countries it is strongly recommended that the equipment be hand-carried through customs.
It is strongly advisable to determine in advance government regulations related to customs clearance, applicable taxes and import duties on radio equipment. You will be responsible for all shipping charges, taxes and duties as well as storage charges if there is a delay in clearing.

ADDITIONAL COMMENTS

1. All application papers to the government should be professional in content and appearance.
2. In addition to the cost of equipment, additional costs must be considered for programming, power consumption (about the same as a 200 Watt light bulb) and maintenance (minimal with our transmitters).
3. Follow-up to responses to your radio programming is important to your ministry. Likewise, feedback from you on the effectiveness of our equipment is equally important to Galcom.
4. Determine if there is a need to provide fix-tuned radios in your area of ministry. If so, the number required and their cost must be considered as well as a plan of how radios can be distributed to those who need them most?
5. Many poor areas (refugee camps, prisons, etc.) are excellent opportunities for low powered broadcasting and the distribution of fix-tuned radios.
6. Consistent and persistent prayer support for low powered broadcasting will make your ministry effective. Be prepared to build up a large prayer support base.