Airport - Ground Support Communications (GSC) - Problems/Solutions

Airports present many unique communications challenges. GSC requires ground personnel to stay in constant radio contact with several groups of control stations. This involves a wide range of skill sets and areas of responsibilities. From a manager's perspective, the issue is "span of control". Technical capabilities for users to operate communications equipment also vary widely among managers, supervisors and workers. Everyone agrees that when communications improve, everyone wins.

Some small scale solutions are:

1.) **Use vehicle mounted multi-channel VHF radios**: Ok for hearing tower and aircraft, not for B2B voice like dispatchers, no data.
2.) ***Use handheld radios***: Short distance, less effective in buildings. Extends range using repeaters. Expensive solution requiring coverage "use" analysis, system engineering, licensing LMR radios and repeaters, and programming. Difficult to grow. No contact with tower. Hitting repeaters inside buildings problematic.
3.) ***Cell phones***. Coverage throughout airfield issue. Not good for high noise area. No contact with tower/aircraft. May not have dedicated channel for direct contact. Hands free operation?
4.) ***Use both a vehicle mounted VHF radio to stay in contact with tower and a second radio for business communications***: Downside is dealing with 2 mics and 2 speakers. When both radios have signals difficulty in listening to two conversations at once. Usually requires setting one volume down on other radio then back up when important conversation is completed.
5.) ***Primary issues revolve around two problems:***
    a. Needing two radio sources is problematic for most single radio sources.
    b. Difficulty in maintaining communications everywhere or away from a vehicle.

Benefits of using wireless headsets with M2115 Mobiles and M2115 Base Stations

Mentor Radio designed the M2115 as a scalable solution to work with the M2115B in order to provide better communications continuity across the most difficult areas on an airfield to maintain communications, namely, Ground Support Communications (GSC).

To meet business communications requirements, in lieu of installing a large LMR network to use handheld radios, Mentor Radio recommends using vehicle mounted LMR radios configured for simplex mode (low cost, easy installation, less licensing requirements) and allow the mobile mounted M2115 radio to act as a repeater for "out of vehicle" Bluetooth headset operation.

Vehicles operating with two radios can become problematic. Picking up the correct microphone before transmitting becomes an issue. Also, separating the speakers when both radios receive signals at the same time can result in communications problems. Which radio is heard is many times related to where the listener is relative to the speaker. The M2115 was designed to help solve these problems. Mentor Radio uses the approach of first come, first served. This would cut out the second signal until the first signal is completed. In the event that the second signal is more important than the first, Mentor Radio uses a priority channel configuration setting to identify a channel with "break-in" or override capability.

If there were a way to determine dynamically which message is the most important, that would be ideal. However, determining which of two messages is the most important is usually determined by the user after receipt of both messages. The primary identification of importance is determining intended destination. With VHF voice channels; there is no direct way to automate this process short of voice recognition pre-squelch processing. That is problematic in regard to identifying all possible combinations for user call sign patterns.

The next best method of determining priority of message is by setting a break in for monitoring of a priority channel that must always be monitored. This is why Mentor Radio uses the priority software configuration to enable break-in for configured high priority channels. This way if there is a message on the monitor channel, users can receive this channel even during the time a user switches over to communicate with a dispatcher on the LMR radio.