



Civil Air Patrol, Delaware Wing Training Document TD-004: 800 MHz Radios



Overview

The State of Delaware utilizes a statewide trunked 800 MHz radio system for public safety operations. Several other agencies that are not necessarily considered “emergency” in nature, but still affiliated with public safety and/or government operations are also allowed to use the state system. Delaware Wing, Civil Air Patrol is one such agency.

DEWg uses this system primarily to conduct operations with DeL DOT in support of traffic observation flights. However, as CAP’s role in Delaware expands, we find ourselves tasked with needing to communicate with other state agencies on an infrequent, but necessary, basis. One such example is a REDCAP that involves the support of other state agencies, such as fire, police, or EMS. Having the ability to communicate directly with other agencies is vital to the success of a mission in a timely and efficient manner.

To support that, there are a number of radios issued to resources of DEWg that will allow members to communicate with other state agencies. It is important to remember several key items about these radios:

- 1) CAP is an invited guest on this system. Our invitation can be revoked by the State of Delaware at any time, for any reason. We must be professional in our communications and not abuse this privilege.
- 2) As with communications on our normally assigned CAP VHF frequencies, our communications on the state system is not encrypted. This means that anyone with a scanner and a knowledge of the state’s radio system can monitor our communications.
- 3) We **absolutely cannot** use the state system to support a mission. This is a CAP regulation. The only way we can utilize the state’s 800 MHz system while performing a CAP mission is:
 - a. We are working with other state agencies and we need to communicate directly with them; or
 - b. It is an emergency situation **and** there is absolutely no other means of communicating with our resources.
- 4) We are permitted to use our CAP talkgroup for functional tests (“nets”) to ensure assets are operating properly.

Technology and Operations

The state uses a “trunked” radio system. This means that instead of “channels” or “frequencies” that are used in a conventional system (such as our CAP VHF system), the state system uses “talkgroups” to organize communications.

All programming for the state system is performed by a state radio shop. CAP has no ability to modify any programming on an 800 MHz radio. The state uses a common means of identifying a talkgroup (“TG”) on their radios. Prefix codes determine the geographic area of the TG, and almost always follow this format:

- SW – This means it is a “statewide” TG, and covers the entire state.
- N or NCC – This means it is a New Castle County TG, to be used for incidents in New Castle County.
- K or KNT – This means it is a Kent County TG, to be used for incidents in Kent County.
- S or SSX – This means it is a Sussex County TG, to be used for incidents in Sussex County.

The suffix of a TG determines the use of the TG. Typically, these are the TG suffixes found on a radio used by CAP:

- CAP – This is our own TG. This is the only TG that we are authorized to use amongst ourselves in CAP, without an invitation from other agencies.
- TMC – This is the DeIDOT TMC TG, used by CAP aircraft to communicate directly with TMC.
- DEMA – These are DEMA TGs, used to communicate directly with DEMA.
- MA – These are “Mutual Aid” TGs, used to provide communications between different agencies.
- IOPS – These are “Inter Ops” TGs, also used to provide communications between different agencies.
- EMPRE – These are “Emergency Preparedness” TGs, and can be used to facilitate the planning and/or coordination of emergency activities.

Once you know the naming scheme as shown above, you can determine what any particular TG is used for. However, there are only a few things to keep in mind for CAP members:

- 1) We are permitted to use only one TG on the state system without pre-authorization: **SW-CAP**.
- 2) We are permitted to use **SW-TMC** whenever we fly a DeIDOT mission to communicate directly with TMC.
- 3) On DeIDOT’s request, we may use any of their other TGs to support their mission.
- 4) We must be invited or assigned to use any other TG on the system by a county EOC or the state EOC.
- 5) A CAP IC that is operating a mission with other state agencies can request or suggest that an MA or IOPS TG be used for communications. However, it is still completely at the discretion of an EOC whether or not to do so.

On SW-CAP, members will use their assigned Diamond Flight numbers. While not strictly enforced, it is highly recommend that all other CAP regulations and operating instructions be followed, such as:

- Using proper prowords and terminology
- Not using a member’s proper name

- Using proper pronunciation of numbers and letters if passing traffic

Resource Assignment

- Mobile 800 MHz radios are installed in two CAP aircraft: N358CP (CAP 758) and N742CP (CAP 742).
- Single band portable 800 MHz handheld radios are provided to support DelDOT operations in aircraft without a mobile radio. These handheld radios are located, one each, at:
 - KILG
 - KDOV
 - KGED
- Two dual-band portable handheld radios, providing the ability to operate on both CAP VHF frequencies and the state 800 MHz system, are assigned to:
 - A3 / DCS, Operations (DF-7)
 - A6 / DCS, Communications (DF-4)
- The following personnel will also have 800 MHz handheld capability:
 - DEWg CC (DF-1)
 - DEWg CS (DF-3)
 - DEWg A3E / DOS (DF-15)
 - DEWg A6A / New Castle County (DF-8)
 - DEWg A6A / Kent (DF-42)
 - DEWg A6A / Sussex (DF-43)
 - DEWg IC-3 (DF-36)

The radio assignment also allows operational, ES, and IC leadership to have direct communications with supported agencies and each other as necessary. If a CAP resource with state radio capabilities is required at New Castle, Kent, or Sussex EOC, there is enough coverage among the radios issued that this requirement can be fulfilled.