

Civil Air Patrol National Communications Plan

27 July 2008

In accordance with CAPR 100-1, para. 2-2, this national communications plan is prepared annually after review of the wing and region plans submitted earlier in the year. It should be the basis for the 2009 cycle of wing and region communications plans.

This plan addresses the overall structure of the CAP Communications Network, duties and expectations of operators, and national alerting and operational requirements.

Situation Analysis

The Civil Air Patrol national communications network is in a period of rebuilding.

The 1998 CAP Communications Strategic Plan began a process of moving CAP toward full compliance with NTIA rules (47 CFR 300). The process was reaffirmed by the CAP National Executive Committee in 2002. The transition had the effect of removing large numbers of HF and VHF radios from the CAP Communications network because they were not compliant with NTIA rules. CAP further made a strategic decision to first seek funding to rebuild the VHF components of the network, including replacing all repeaters. Most funding for the VHF rebuilding has been secured. We are awaiting coordination of frequency requests with Canada before a massive project to replace all CAP VHF repeaters in the country. While awaiting approval from Canada, the emphasis of funding requests and operational rebuilding has moved to the HF components of the network.

One main focus of the overall CAP Communications system is tactical communications, defined as Mission Critical assets. Another focus is command, control, and communications (C3), defined as Mission Essential assets. In both the VHF and HF categories of equipment, Mission Critical (tactical) needs must be met before Mission Essential (C3) needs may be addressed, according to the way the Table of Allowances is structured. Flexibility exists, however, so that equipment legitimately serving tactical needs may also be used for C3 functions.

An important lesson of recent major missions, including Hurricane Katrina, is that CAP needs mission radio communications in and out of disaster areas when commercial infrastructure is inoperable, a function often best provided by HF radio. Historically HF radio has provided this capability to provide tasking across wing and region boundaries and its revitalization is a high priority for Operations and Communications staff at National HQ.

Role of the Network

In the radio communications environment of 2008, CAP rarely passes strictly administrative traffic. Rather, the purposes of the overall CAP Communications Network is to support operational missions, including fulfilling customer requirements, and to conduct training and "confidence checks" in order to be ready to fulfill these missions.

The practical operational structure of the network, therefore, changes in accordance with the purpose. For training and confidence checking, the network is hierarchical, with multiple tiers. For operational missions, the structure is adaptive, functioning in a peer-to-peer mode in which the stations best able to pass the traffic take the primary roles.

Confidence Checks

The term "confidence checks" as used in this plan refers to the requirements of the CAP Alerting System Communications Actions guide (<https://ntc.cap.af.mil/comm/getfile.cfm?DID=39>), intended to provide Command and Control Communications (C3) to commanders with a survivable communications capability ready to function in a stressed environment. The CAP alert levels routinely match the Department of Homeland Security alert levels, however CAP Communications managers at each level may implement short-term elevation of the alert level for specific missions, training or other cause, usually in coordination with command and notification to higher headquarters. Communications managers may modify the alert level for their own and subordinate units.

For the last several months, the Department of Homeland Security and the CAP Communications Alert Level have both been at the "Yellow (Elevated)" level. In keeping with this alert level, each CAP radio station should check into a net or otherwise make contact with another CAP station at least once a week. Communications managers should monitor confidence checks and may reassign radios where the confidence checks are skipped without good cause. Radios at unit headquarters, pre-deployed at inactive Incident Command Posts, and in vehicles are not exempt from this requirement. While logs of confidence checks are not required, the individual operator may wish to retain documentation.

Hierarchical Network Design:

The routine functioning of the overall CAP Communications Network is structured hierarchically, with national, regional, wing, group, and local tiers. At each level, operators who are assigned corporate radio assets have certain responsibilities and expectations. Communications managers at each level also have certain responsibilities and expectations. In some cases, the nets of multiple tiers of the CAP structure may be held on the same frequency, such as region, wing and group HF nets, so coordination and scheduling of regular net meetings is vital

Although the overall network design is hierarchical, nothing in this plan prohibits operators from participating in regular net meetings across wing or region boundaries, as long as such participation is not disruptive to the functioning of the net. For purposes of readiness, propagation testing, and adaptive passing of traffic, such cross-wing and region operation can have value. ALE nets, however, consist only of authorized stations, with no exceptions.

CAPR 100-1 and 100-3 say that any time two CAP radios communicate with each other, it is a functioning of the "CAP Net." Even in routine administrative communication, when relaxed operating procedures are permissible, there is a structure outlined in 100-3 and a responsible Net Control Station (NCS). At other times, the net is used for formal, scheduled meetings of stations and operators with full procedures. The following discussion of "nets" at each level of the hierarchy includes both categories of net functionality.

National Command Net

CAPR 100-1 7-4a: *The National Command Net operates in the Automatic Link Establishment (ALE) mode. It is composed of stations specifically approved by the NTC using equipment provided for this purpose. Most of these stations are "message center" stations which relay message traffic between the national and region levels of the CAP net structure.*

The National Command Net, the "top level" of the CAP radio network, uses Automatic Link Establishment (ALE) radios to which a "suite" of frequencies is assigned, each with different radio propagation characteristics, and the radios automatically monitor which frequency is best to communicate with each other station in the net. Each region operates two ALE radios, serving as "message center" stations (see below), plus additional radios for Puerto Rico, Hawaii and Alaska. The ALE stations at the National Technology Center (NTC) and the National Operations Center (NOC) serve as the net control stations for the National Command Net. There are no scheduled formal net meetings of this net. Rather, ALE station operators are expected to attend their radios regularly and be ready for messages, as they may be received.

The specific functions of the National Command Net are:

- Provide a strategic communications tier of the communications network available for adaptive communications during high-level missions.
- Provide decentralized contact points to relay traffic between mission command post and the NOC or other national CAP office.
- Conduct and report regular confidence checks, in accordance with the current CAP Communications Alert Level, and no less than once per week.
- Be available, as needed, for training.

National Nets

CAPR 100-1 7-4f.(2): *The daytime and nighttime communicators' nets are open to any communicator. The purpose of these nets is the free exchange of information. Questions of both a technical and administrative nature may be handled. Furthermore, the traffic originating on other nets may be handled on the communicators' nets to ensure widest dissemination.*

National-level HF frequencies assigned to Civil Air Patrol may be used for any legitimate CAP communications. Regularly scheduled net meetings must be coordinated with the NTC and/or the Communications Team Leader, who will appoint or approve NCS assignments. Functions of scheduled National Communicators Net meetings on national net frequencies may include, but not be limited to, passing formal traffic, training, confidence checks, equipment and propagation testing, readiness for Contingency Nets (see below), and other legitimate CAP communications functions. Non-scheduled use of National Net frequencies should be on a non-conflicting basis; however unscheduled users of the frequency should relinquish the frequency to traffic with higher priority.

Region ALE Nets

Although not implemented as of the date of this plan, CAP intends to create region ALE Nets, with frequency suites that are unique to each region. Typically this will include two ALE stations per wing that are dedicated to the region ALE net, except for brief departures for scheduled region net meetings.

Region Nets

CAPR 100-1 7-4b: *The Region Command Net is composed of stations representing the region headquarters and each wing headquarters within that region. The purpose of this net is to pass traffic among the region headquarters and the wings.*

Region-level HF nets operate on frequencies assigned to Civil Air Patrol regions and may be used for any legitimate CAP communications. Regularly scheduled net meetings must be coordinated with the region DCS-COMM, or designee, who will appoint or approve NCS assignments. Functions of scheduled Region Net meetings may include, but not be limited to, passing formal traffic, training, confidence checks, equipment and propagation testing, readiness for Contingency Nets (see below), and other legitimate CAP communications functions. Non-scheduled use of Region Net frequencies should be done on a non-conflicting basis; however unscheduled users of the frequency should relinquish the frequency to traffic with higher priority.

Wing Nets

CAPR 100-1 7-4c: *The wing net is composed of stations representing the wing headquarters and subordinate units of the wing. The purpose of the wing net is to pass traffic among the wing headquarters and subordinate units.*

Wing-level HF nets operate on frequencies assigned to Civil Air Patrol regions and may be used for any legitimate CAP communications. Regularly scheduled net meetings must be coordinated with the region DCS-COMM, or designee, however the wing DC or designees will approve NCS Assignments. Functions of scheduled Wing Net meetings may include, but not be limited to, coordinating of wing activities, passing formal traffic, training, confidence checks, equipment and propagation testing, antenna testing, readiness for Contingency Nets (see below), and other legitimate CAP communications functions. Non-scheduled use of Wing Net frequencies should be on a non-conflicting basis, however unscheduled users of the frequency should relinquish the frequency to traffic with higher priority. In a few cases, wing geographic size may allow the use of VHF frequencies as the primary frequency for operation of wing nets, in which case scheduled net meetings should be coordinated in keeping with the policies of the Wing DC.

Group Nets (if group structure is used)

CAPR 100-1 7-4d. *A group net is composed of stations representing the headquarters of the group and its subordinate units. The purpose of the group net is to pass traffic among the group headquarters and subordinate units.*

Group-level nets operate on HF frequencies assigned to Civil Air Patrol regions or VHF frequencies and may be used for any legitimate CAP communications. Regularly scheduled net meetings on HF must be coordinated with the Wing DC and the region DCS-COMM, or their designees, however the group DC or designee will approve NCS assignments. Regular net meetings on VHF repeaters should be coordinated among all units served by the repeater, or as directed by higher headquarters. Functions of scheduled Group Net meetings may include, but not be limited to, coordination of group activities, passing formal traffic, training, confidence checks, equipment and propagation testing, antenna testing, readiness for Contingency Nets (see below), and other legitimate CAP communications functions. Non-scheduled use of Group Net frequencies should be done on a non-conflicting basis, however unscheduled users of the frequency should relinquish the frequency to traffic with higher priority.

Local Unit Nets

***CAPR 100-1 7-4e.** A squadron or flight net is composed of stations representing the unit headquarters and the unit's members. The purpose of the net is to pass traffic among the unit.*

Local unit nets generally operate on VHF frequencies and may be used for any legitimate CAP communications. Regular net meetings on VHF repeaters should be coordinated among all units served by the repeater, or as directed by higher headquarters. Functions of scheduled Unit Net meetings may include, but not be limited to, coordination of group activities, passing formal traffic, training, confidence checks, equipment testing, antenna testing, readiness for Contingency Nets (see below), and other legitimate CAP communications functions. Non-scheduled use of Unit Net frequencies should be done on a non-conflicting basis, however unscheduled users of the frequency should relinquish the frequency to traffic with higher priority.

Other Special Purpose Nets

***CAPR 100-1 7-4f(3):** Other special purpose nets may be established as necessary to support CAP programs and activities.*

Special purpose nets may be established on HF, VHF, or ISR frequencies, depending on the legitimate need of the particular CAP program or activity. Whenever possible, project officers and designated activity Comm officers should coordinate in advance with the appropriate Comm Manager overseeing the assigned frequency(s). For example, planned use of HF should be pre-coordinated with the wing DC and region DCS-COMM. Planned use of VHF may only require coordination among local units served by a repeater.

Message Centers

Each of the functioning nets, as outlined above, should have one or more "Message Center Stations" (MCS). In most cases, this should be a primary and secondary MCS, whose operators have made the commitment to check-in regularly to scheduled net meetings of higher headquarters. For example, a wing MCS should regularly participate in

the appropriate region net, and should relay any traffic received into and out of the wing level net.

Ideal MCS operators can regularly attend their stations on the days and times of the higher headquarters nets.

Mission and Contingency Nets

CAPR 100-1 7-4f(1): *When mission needs dictate other nets may be established at any level within the communications system. These nets may be composed of stations from any combination of wings and regions as necessary to support the mission. Contingency nets may be established to support the readiness posture of CAP. Examples of contingency nets include hurricane watch nets and other precautionary activations.*

Contingency Nets

Communications managers at all each level have the authority to initiate Contingency Nets at their respective levels, placing CAP radio stations within their span of control on alert to be available for developing conditions that may result in mission activity. For example, a region DC could alert stations in the region to be on the air and ready in advance of a hurricane landfall elsewhere in the region. Generally, this should be done in consultation with the Commander, Net Control Station operator and other appropriate Communications and Operations staff.

Contingency nets use formal net procedures and may serve multiple functions, including confidence checks of equipment and propagation, compiling available resources, and readiness for immediate action. Contingency nets will *usually* be announced via the commercial infrastructure, such as email and phone tree alerts. In a communications stressed environment, even before formal mission activity is approved, individual operators should use their initiative to check routine net frequencies, in order to make contact with higher headquarters.

Net Control Stations of regular scheduled net meetings and of Contingency Nets should coordinate and, in most cases, allow the scheduled net to proceed, with the contingency net resuming after conclusion of the scheduled net. Priority of traffic on the respective nets will, however, be a consideration.

Mission Nets

Mission nets are structured by the Communications Unit Leader in accordance with the Operations Task Guide tasks for Communications (<https://ntc.cap.af.mil/ops/es/TrainingMaterials/MBTG-11Apr05.pdf>) and in coordination with the Incident Commander and other appropriate staff, in order to serve the operational and tactical needs of the mission.

Mission nets will *usually* be announced via the commercial infrastructure, such as email and phone tree alerts, as part of the overall CAP activation for a mission or mission Communications briefing. In extreme cases of stressed communications environments,

when commercial infrastructure fails, or in other special circumstances, the only activation may be via radio.

As a result, individual CAP members holding custody of authorized CAP radio stations (corporate or personally owned) should use their initiative when special circumstances occur and check routine net frequencies for contingency or mission nets. Examples of these special circumstances might be local disasters; hurricane, tornado, or other weather events; earthquakes; tsunami warnings; terrorist attacks; and other local, regional or national events that may prompt CAP mission activity, including deployment across wing, and national boundaries.

Operator Expectations

Operators who are issued CAP Communications assets, or authorized for use or personally equipment, are expected to be careful stewards of the equipment and to be actively engaged in the Communications program. Each authorized CAP radio station (HF and VHF) should check into a net or otherwise make contact with another CAP station at least once a week. Personnel with custody of radios at unit headquarters, pre-deployed at inactive Incident Command Posts, and in vehicles are not exempt from this expectation.


When special circumstances occur suggesting the possibility of CAP mission activity, even before formal mission activity is approved, individual operators should use their initiative to check routine net frequencies, in order to make contact with higher headquarters. Examples of these special circumstances might be local disasters; hurricane, tornado, or other weather events; earthquakes; tsunami warnings; terrorist attacks; and other local, regional or national events that may prompt CAP mission activity, including deployment across wing, and national boundaries.

Management Expectations


The DC or Communications Officer at each level is expected to manage the Communication system and provide training in a way that complies with regulations and directives, and provides for optimum readiness on the part of CAP equipment and personnel assets.

Each wing and region should have at least one functioning net a week for training and confidence checks. Communications managers should monitor confidence checks and may consider reassigning radios where operators skip the expected confidence checks without good cause.

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Wing CCs, DCs, and OPS Officers
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