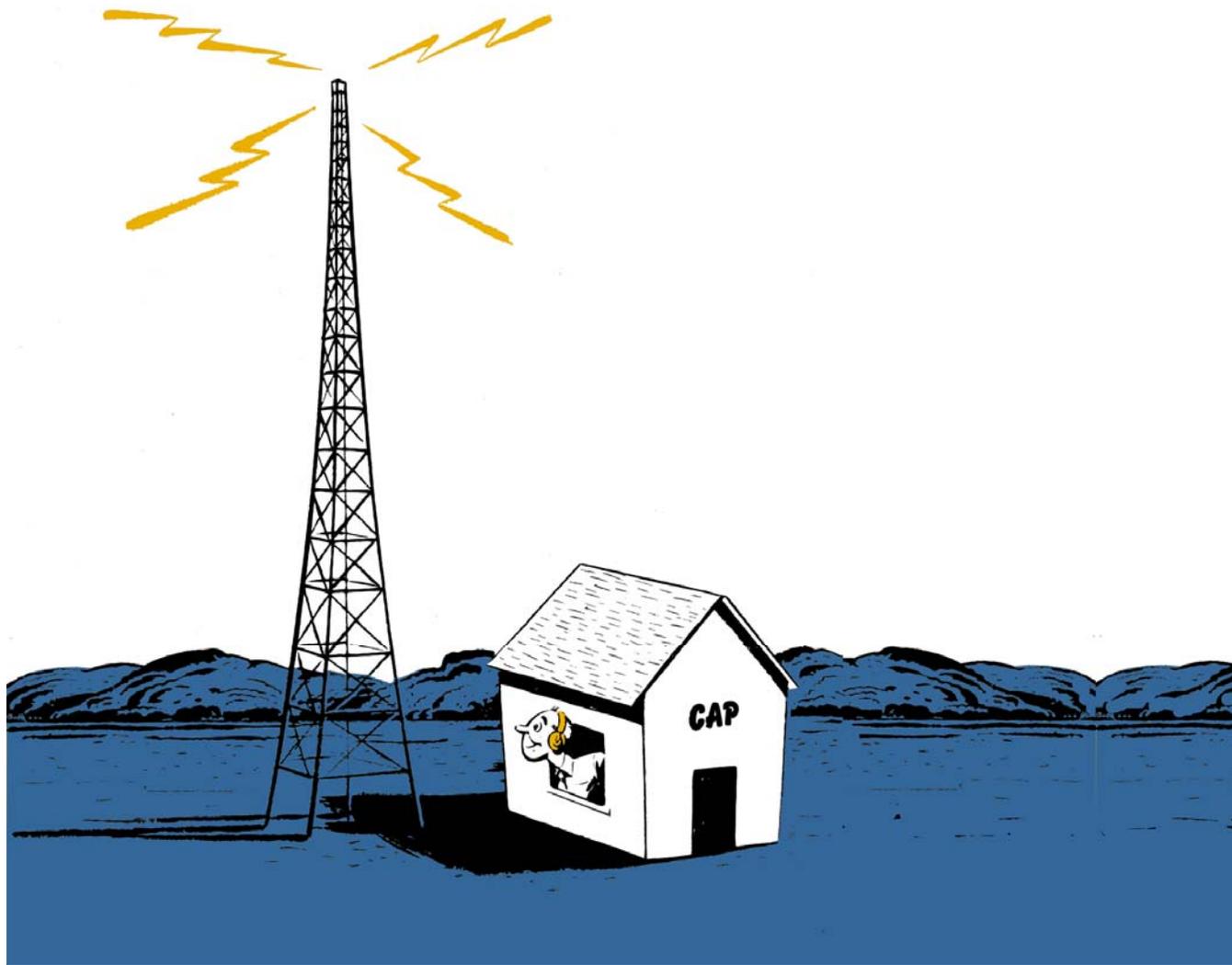


Chapter 10

COMMUNICATIONS



The vital necessity of communications not only in the Civil Air Patrol, but in all types of paramilitary and military operations is vital to the coordination and success of the end goal. Essentially, communications is the eyes, ears, and voice of the commander. Although we may equate communications via radio transceivers, there are multiple forms of communications. A commander who resists recognizing multiple forms of communication may find themselves failing at an objective when their trusted form of communications fails them. In this chapter, we will discuss the many forms of communications the Civil Air Patrol uses and how you can become qualified as a radio communicator.

This chapter is not intended for you to become an expert, but rather familiar with different communication activity. Formal instruction can be provided by the appropriately trained officer at a later date.

Types of Communication

Wire Communication

The first type of communications is wire communication. This is the primary means in which we communicate daily. Although wire



Wire Communications



Visual Communications



Sound Communications



Electronic Communications

communications includes teletype and the telegraph, the only form of wire communication used today is the telephone. The telephone permits voice transmission quickly, privately, and in large volume. We refer to this form of communications as using a land line.

Visual Communication

Visual communication is still readily used these days. At one point in our history, service men in the signal corps were taught to use flags to communicate. We don't use flags in the Civil Air Patrol to communicate any longer, however we still use many other forms of visual communication.

As a member of a flight crew you should know light signals that may be given to you by a control tower should your radio failure. Pilots and flight line personnel use hand signals to communicate.

Also as a member of an aircrew and as a member of a ground team you will need to learn visual ground-to-air signals. These signals are intended for ground units to communicate with aircrews in the event of radio failure through the use of panels or other objects that can be seen from the air.

Other forms of visual communication include airport signs, signaling mirror, and airplane maneuvers. As your training and education advances, you will have the opportunity to learn many different forms of visual communication.

Sound Communication

This means of communication is used primarily for alarms, attracting attention, and for transmission of short prearranged messages and orders. It should be used whenever such use is economical of time, personnel, or equipment. The chief instruments of sound communication are: whistles, bugles, aircraft motors, horns, and sirens.

Electronic Communication

This is one of the most popular forms of communication today. Today intranets and the internet are commonly used to transmit messages. The Civil Air Patrol has many websites from different units that offer information from those units pertaining to unit specific publications, forms, events and more. Transmission of emails also is commonly used by members.

What makes this form for communication popular is that it is fast and the receiver and recipient don't have to be communicating at the same time to pass and receive messages.

With such freedom and ease of exchange of information, all members should remember to take care not to abuse the chain of command. In all cases the chain of command must be taken into consideration prior to the execution of any communication.

Radio Communication

Another means of communication in the Civil Air Patrol is radio communication. Tools to communicate via radio communications

methods include cell phones, satellite phones and transceivers. Virtually all members who are engaged in emergency services operations will use a transceiver. A transceiver is a device that has the ability to transmit and receive radio communications; a two-way radio. Transceivers are popular because they can be portable, have their own power source, and are easy to use.



Radio Communications

The Civil Air Patrol transmits on special VHF and HF frequencies that are somewhat different from those used by Ham Radio operators. Before you can be authorized permission to communicate using a transceiver, you will need special training. This training can be scheduled with your unit's communication officer.

Although there are CAP publications describing the procedures and use of the CAP radio network, they are secured from public viewing. This is due to the network being part of the larger federal and military communications system. You will need to agree to the OPSEC agreement prior to being able to access these publications. Again, you communications officer can assist you.

Radio Communication Know-How

The phonetic alphabet (below), authorized prowords and the proper enunciation of numerals should be committed to memory.

LTR	WORD	PRONUNCIATION
A	ALPHA	<u>AL</u> -FAH
B	BRAVO	<u>BRAH</u> -VOH
C	CHARLIE	<u>CHAR</u> -LEE
D	DELTA	<u>DELL</u> -TAH
E	ECHO	<u>ECK</u> -OH
F	FOXTROT	<u>FOX</u> -TROT
G	GOLF	<u>GOLF</u>
H	HOTEL	<u>HOH</u> -TELL
I	INDIA	<u>IN</u> -DEE-AH
J	JULIET	<u>JEW</u> -LEE-ETT
K	KILO	<u>KEY</u> -LOH
L	LIMA	<u>LEE</u> -MAH
M	MIKE	<u>MIKE</u>
N	NOVEMBER	<u>NO</u> -VEM-BER
O	OSCAR	<u>OSS</u> -CAH
P	PAPA	<u>PAH</u> -PAH
Q	QUEBEC	<u>KEH</u> -BECK
R	ROMEO	<u>ROW</u> -ME-OH
S	SIERRA	<u>SEE</u> -AIR-RAH
T	TANGO	<u>TANG</u> -GO
U	UNIFORM	<u>YOU</u> -NEE-FORM
V	VICTOR	<u>VIK</u> -TAH
W	WHISKEY	<u>WISS</u> -KEY
X	W-RAY	<u>ECKS</u> -RAY
Y	YANKEE	<u>YANG</u> -KEY
Z	ZULU	<u>ZOO</u> -LOO

When communicating verbally or through written communications, you will have to learn how, when, and what to say. This section will assist you in getting a head start on some communication know-how. As mentioned earlier, formal communication training will be given by the appropriate training officer as your education and training advances.

Proper Expression

Expressing yourself properly on CAP frequencies is very important. Proper expression involves a working familiarity with the phonetic alphabet, authorized prowords and the proper enunciation of numerals.

It is easy to understand the need for these three subjects if you listen to the radio networks of non-military organizations and observe the innumerable ways of expressing phonetics and passing traffic. Consider the numeral "ZERO". You will hear individuals pronounce it "OH", "OUGHT", or "NOTHING". Sometimes they even pronounce it properly, "ZERO". Another example is the last letter of the alphabet, "Z". You will hear it called, "ZED", "ZEBRA", "ZIP", "ZERO", etc.

The old "ADAM", "BAKER", "CHARLIE" and other non-standard, and thus confusing, renditions of a phonetic alphabet are not as easy to understand as the ICAO alphabet. The ICAO established a committee to determine which phonetic expressions were commonly understood throughout the world. After years of research and study, the present ICAO phonetic alphabet was developed and accepted by most organizations that have radio communications capability including the Civil Air Patrol.

Numerals

NUMBER	PRONUNCIATION
0	<u>ZE-RO</u>
1	<u>WUN</u>
2	<u>TOO</u>
3	<u>TREE</u>
4	<u>FOW-ER</u>
5	<u>FIFE</u>
6	<u>SIX</u>
7	<u>SEV-EN</u>
8	<u>AIT</u>
9	<u>NIN-ER</u>

The phonetic alphabet, authorized prowords and the proper enunciation of numerals should be committed to memory. We will begin with numbers.

When you see numerals in the heading or text of a message, always express them digit by digit, proceeded by the proper proword. It is incorrect to say "nineteen ninety three"...say, "FIGURES WUN NINER NINER TREE." Do not say "twenty one"...say, "FIGURES TOO WUN". Even thousands will be spoken as, (16000) "FIGURES WUN SIX_THOUSAND".

When giving the Date-Time Group (DTG) 012136Z DEC 93, you would say "TIME ZERO WUN TOO WUN THREE SIX ZULU DECEMBER NINER THREE." You never say "TIME FIGURES", "GROUPS FIGURES", or "FIGURES NUMBER". Prowords pertaining to numerals are never mixed.

Prowords

PROWORD	EXPLANATION
AFFIRMATIVE	You are correct OR what you have transmitted is correct. Yes.
ALL AFTER	The portion of the message to which I have reference is that portion which follows _____.
ALL BEFORE	The portion of the message to which I have reference is that portion which precedes _____.
BREAK	I hereby indicate the separation of the text from all other portions of this message.
CORRECT	You are correct. That is correct.
CORRECTION	An error has been made in this transmission. Transmission will continue with the last word correctly transmitted.
DISREGARD THIS TRANSMISSION, OUT	This transmission is in error. Disregard it. (This proword will no be used to cancel a message that has been transmitted and receipted for by the receiving station.)
DO NOT TRANSMIT, OUT	Stations called will not answer this call, receipt for this message, or otherwise transmit regarding this transmission. (When this proword is used, the transmission will always end with the proword, "OUT")
EXEMPT	The addressees immediately following are exempted from the collective call. The addressees following are exempt from receiving this message.
FIGURES	A group of one or more characters, the first of which is a numeral, follows.
FLASH	This message has a precedence of FLASH.
FROM	The originator of the message immediately follows
GROUPS	The text of this message contains ____ groups or words. (Normally not used in CAP originated messages).
IMMEDIATE	This message has a precedence of IMMEDIATE.
INFO	The addressees immediately following are addressed for information only. No action is required of them.
INITIAL(S)	A group of one or more characters, the first of which is a letter, follows.
I READ BACK	The following is in response to your request to read back.
I SAY AGAIN	I am repeating the transmission, or the portion you need repeated.
I SPELL	I will spell the next word phonetically.
I VERIFY	That which follows has been verified per your request (to be used only as a reply to a VERIFY request).
MAYDAY	International distress signal. Indicates traffic concerning imminent and grave danger to life and property.
MESSAGE FOLLOWS	A message which requires recording follows.
MORE TO FOLLOW	I have more messages, traffic or information for you.
NEGATIVE	Not received. No.
NO TRAFFIC	This station has no traffic to send.
NOTHING HEARD	To be used when no reply is received from a call.

NUMBER	This station message number, in numerals, follows.
OUT	This is the end of my transmission to you and no answer or reply is required or expected.
OVER	This is the end of my transmission to you and a response is expected. Go ahead.
PAN	International urgency signal. Identifies very urgent information concerning the safety of life and property.
PRIORITY	This message has a precedence of PRIORITY.
READ BACK	Repeat this transmission back to me exactly as received.
RELAY (TO)	Transmit this message to all addressees immediately following this proword.
RELAY THROUGH	Relay you message through _____.
ROGER	I have received and understood you last message. (Does NOT mean yes or permission granted).
ROUTIN	This message has a precedence of ROUTIN.
SAY AGAIN	Repeat that portion of your last transmission I am indicating.
SECURITE	International safety signal. Pronounced "SEE CURI TAY". Identifies urgent information regarding safety of navigation of vessels.
SPEAK SLOWER	Your transmission is too fast. Reduce speed.
THIS IS	This transmission is from the station whose call sign immediately follows.
THIS IS A DIRECTED NET	Used by the Net Control Station (NCS) to establish the type of net being operated as a directed net.
THIS IS A FREE NET	Used by the Net Control Station (NCS) to establish the type of net being operated as a free net.
TIME	The figures which follow are the Date/Time Group (DTG) of this message.
TO	This addressee(s) who are to take action, and to whom this message is to be delivered are as follows.
UNKNOWN STATION	The identity of the station I am trying to contact is unknown (used in place of that station's call sign).
VERIFY	Verify entire message (or portion indicated) with the originator and send the verified version (used by receiving station).
WAIT	I must pause for a few seconds. Standby. Do not transmit. Wait for me to continue with my transmission (the proword "OVER" is not used).
WAIT, OUT	I must pause for more than a few seconds. This contact is terminated until I call you again. The net can continue.
WILCO	I have received, understood, and will comply (note: Since the meaning of the proword ROGER is included, the two prowords are not used together).
WORD AFTER	The word to which I have referenced is that which follows _____.
WORD BEFORE	The word to which I have referenced is that which precedes _____.
WORDS TWICE	Communication is difficult. Transmit each word of phrase twice (may be used as a request or a statement of intent).
WRONG	Your last transmission was incorrect. The correct version is _____.

An example of a call sign in use would be:

*"East Smokey Tower, CAP FLITE
NINER ZERO WUN"*

Or

*"Mockingbird TOO SIX, THIS IS Red
Fire Tree Fife, Over."*

Call Signs

Call signs identify the transmitter and receiving station. Airplane call signs in CAP start with CAP Flight (pronounced CAP FLITE). Radio stations have unique call signs that identify the station as being from national headquarters, a region, or a wing. For example, Arizona is Red Rock and Mississippi is Mockingbird. These issued call signs are called tactical call signs. During missions, temporary call signs called functional call signs may be issued. Functional call signs usually are job or location specific, such as "Mission Base One" or "Ground Team Two".

Ask your unit's communications officer what your wing's call sign is and how you can get one if necessary.

Nets

The type of net and method of operation is determined by operational factors. There are two primary types of CAP and military nets; direct net and free.

In a direct net, stations must obtain permission from the Net Control Station (NCS) prior to communicating with other stations. CAP nets will be directed unless otherwise stated by the NCS.

In a free net, the NCS authorizes stations to transmit traffic to other stations without obtaining prior permission. Free net operation does not relieve the NCS of the responsibility for maintaining circuit discipline.

Precedence Designators

The assigning of precedence to a message is the responsibility of the originator or originating station of the message. The assignment is determined by the subject matter and the time factor involved. By assigning precedence, the originator tells handling operators in what order the message should be handled and denotes the urgency of the information to the addressee(s).

FLASH – The highest precedence designator, FLASH is never used in CAP originated messages, but may be received from another agency for relay. This precedence is reserved for initial enemy contact messages or operational combat messages of extreme urgency. Brevity is mandatory. FLASH messages are to be handled as humanly possible, ahead of all other messages, with in-station handling time not to exceed ten (10) minutes. Messages of lower precedence are interrupted on all circuits involved until the handling of FLASH message is completed.

IMMEDIATE – This precedence is reserved for messages relating to situations gravely affecting the security of the nation. It requires immediate delivery. Examples include reports of widespread civil disturbance, reports or warning of grave national disaster, and requests for or directions concerning search and rescue operations. They are to be handled as quickly as possible, not exceeding 60 minutes.

PRIORITY – This precedence is reserved for traffic requiring expeditious action by the addressee or for conducting operations in progress when ROUTINE precedence will not suffice. They are to be handled as quickly as possible, not exceeding 6 hours.

ROUTINE – This precedence is used for all types of message traffic justifying transmission by rapid means but not of sufficient urgency to require a higher precedence. They are to be handled as soon as traffic flow allows, but no later than the beginning of the next duty day.

Urgency Signals

In addition to precedence indicators, there are three urgency signals you should be aware of. They are internationally recognized and require quick action, before Immediate, Priority, or Routine traffic. They are:

MAYDAY – This signal, referred to as the “International Distress Signal”, indicates that a station is threatened by grave and imminent danger to life property and requires immediate assistance. The word “MAYDAY” will be transmitted three times. After the distress signal is sent all traffic in progress with the exception of Flash traffic, will cease and all stations will monitor. Any station in a position to render assistance will do so and all other stations will continue to monitor until the situation is rectified and the frequency is released for normal use.

PAN – This signal, referred to as the “International Urgency Signal”, indicates the calling station has a very urgent message concerning the safety of a ship, aircraft or other vehicle and/or the safety of a person or persons. The word “PAN” will be transmitted three times. All traffic of a lower precedence will cease. Any station in a position to render assistance will do so and all other stations will continue to monitor until the situation is rectified and the frequency is released for normal use.

SECURITE – This signal, referred to as the “International Safety Signal”, indicates that a station is going to transmit a message concerning the safety of navigation or send important meteorological warnings that will, or can, affect ships, aircraft or persons. The word “SECURITE” will be transmitted three times. All stations will continue to monitor until the situation is rectified and the frequency is released for normal use.

The Twenty-Four Hour Clock

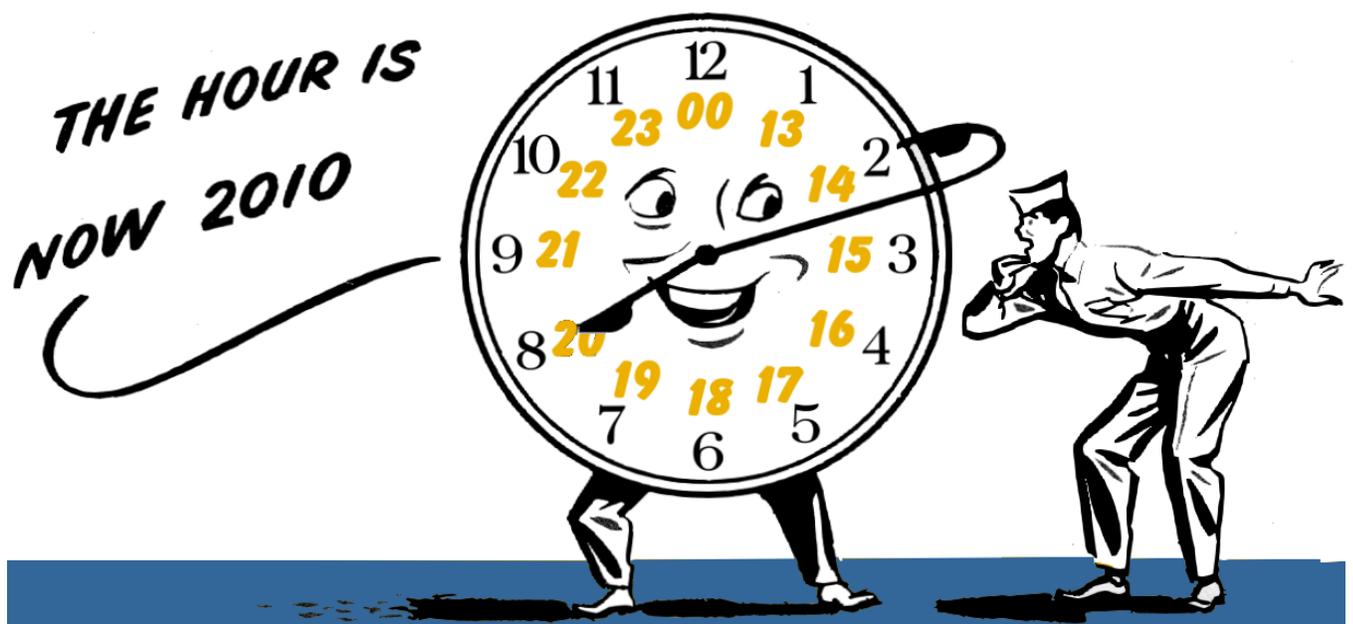
The U.S. Civil Air Patrol uses twenty-four hour clock time (sometimes referred to as military time) instead of twelve hour clock time to describe the time of day. If you have never used twenty-four hour clock time before, it may be a little awkward at first, but you will quickly get the hang of it.

Twelve am is zero hour, the next twelve hours of the day go from one to twelve, however at one o'clock, you would refer to it as 1300hrs (pronounced Thirteen Hundred Hours). From one in the afternoon to eleven in the evening, just add twelve to convert to the twenty-four hour clock. For example, 4:00pm would be converted by adding 12 + 4 to equal 16 or 1600hr

When writing the out the time you do not use a colon to separate the hour and minutes. You do not need to specify the time of day by adding “am” or “pm” since the hour the day will specify whether is morning or evening.

Following the time of day, you would either write, “hrs”, “L”, or “Z”. “Hrs” stands for hours. This tells the reader that the number preceding “hrs” is a time of day (0700hrs). But which time zone? In the case of “hrs” you would assume it is local time, however if you wish to clearly state that the time you indicate is local, then you would use “L” (0900L). If you are communicating to others who may be in a different time zone, then you would use Zulu Time.

Zulu Time is Coordinated Universal Time (UTC) (also known as Greenwich Meal Time). By converting local time to Zulu time, it can be easily understood by everyone as to what time of day it is. When writing Zulu time, you would do so by adding “Z” behind the time of day (1800Z).



Putting it All Together

Now that you have been introduced to some communication elements we will take a look at how to use them. Following is a sample conversation. Prowords have been emphasized to assist in seeing where a how they were used.

- "Mission Base, **THIS IS**, Red Rock WUN WUN, **OVER**"
- "Red Rock WUN WUN,, **THIS IS**, Mission Base, proceed with traffic, **OVER**"
- "**ROGER** Mission Base, **PRIORITY MESSAGE FOLLOWS**, All personnel reporting to Phoenix Mission Base are to go to building **FIGURES WUN TOO TREE.. I SAY AGAIN**, All personnel reporting to Phoenix Mission Base are to go to building **FIGURES WUN TOO TREE.. READ BACK, OVER**"
- "**I READ BACK**, All personnel reporting to Phoenix Mission Base are to go to building **FIGURES WUN TOO TREE., OVER**"
- "**AFFIRMATIVE.. RELAY** message to all Operation Blue Sand personnel. **OVER**"
- "**WILCO, OVER**"
- "Red Rock WUN WUN, **OUT**"

In this sample communication, station Red Rock 11, may have been relaying an important message on behalf of a commander. Without this message, personnel may have gone to the wrong location delaying them in a search and rescue mission.

Printing Block Style Letters

A uniformed method of putting on paper is essential when others will have to read what you have written. Block-style letters are used in many professions such as engineering and architecture where it is critical for others to clearly understand what the writer is communicating. Whether completing a form or writing a radio message, using block-style letters will show you attention to professionalism. Below is a chart that illustrates how to write letters and numbers in block-style.

A	B	C	D	E	F
G	H	I	J	K	L
M	N	O	P	Q	R
S	T	U	V	W	X
Y	Z	1	2	3	4
5	6	7	8	9	Ø

NOTES
