Disaster Awareness & Operations

Emergency Communications Workshop
June 2, 2023

Toby L. Clairmont, RN, CEM
KH7FR

SEA◆PAC

EMERGENCY COMMUNICATIONS WORKSHOP
Schedule and Training Completion Certificate
Friday, June 2, 2023

Participant Name _____ Date _____

This workshop is designed to meet the needs of licensed amateur radio operators engaged in providing Emergency Communications (EMCOMM) for a local community. Participants will be given the opportunity to interact with individuals who have extensive local, state and federal disaster response experience and learn about how government responds to a major emergency or disaster, how amateur radio can favorably influence emergency operations, and more.

	Time	Topic	Brief Description
BASIC EMCOMM	0900 – 0915	Convene workshop	Introductions and opening remarks.
	0915 - 1000	Disaster Awareness & Ops	Discussion of emergencies & disasters. Response of local, state and federal agencies. Amateur radio organizations active in disaster. How best to serve and meet the needs of stakeholder organizations. Special hazards.
	1000 – 1100	Field Operations	Discussion of how best to prepare for and respond to major emergencies & disasters. Equipment packages. Personal readiness. Field Operations Guides.
	1100 – 1200	WINLINK I	Basic installation and configuration of WINLINK application. Preparing and transmitting messages and forms.
	1200 – 1300	LUNCH	
ADVANCED EMCOMM	1300 – 1400	NVIS	NVIS concepts and operational objectives. Design, construction and set-up of a field NVIS system. Troubleshooting.
	1400 – 1500	WINLINK II	Exploration of various more advanced WINLINK techniques.
	1500 - 1545	Scenarios for Discussion	Discussion of various operational scenarios and exploration of various approaches toward achieving optimum outcomes.
	1545 – 1600	Adjourn workshop	Final remarks.
	1600	Certificate sign-off	

Instructor signature
Date

SEA-PAC Lead instructor contact: Toby L. Clairmont, RN, CEM (KH7FR)   toby@clairmont.org

Clark County ARES: https://www.ccareswa.org/

Clark County Amateur Radio Club: https://www.w7aia.org/

National NIFOG: https://www.cisa.gov/resources-tools/resources/field-operations-guides

AUXFOG: https://www.cisa.gov/sites/default/files/publications/AUXFOG%2520June%25202016%2520-%2520508%2520Reviewed%2520-%2520Final%2520%25282-16-17%2529.pdf

ARRL ARES Task Book: https://www.arrl.org/files/file/Public%20Service/ARES/ARRL-ARES-STANDARDIZED-TRAINING-TASK-BOOK-V1_2_2.doc

Wavetalkers WINLINK: https://www.youtube.com/c/wavetalkers

WINLINK Express: https://winlink.org/WinlinkExpress

SPEAKERS

- Toby L. Clairmont, KH7FR

- Michael Barnhart, AE7GQ

- Dave Cherba, WZ8T

- Carter Davis, KH6FV

- Mark Breaky, KB7RHI

STRAW POLL

1. Attended EMCOMM Workshop in 2022?

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2. **Currently active in EMCOMM?**

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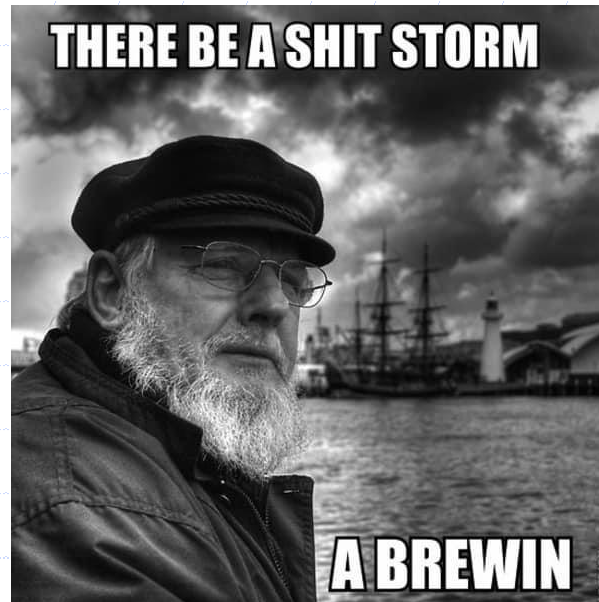3. **Relatively new to EMCOMM?**

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4. **Responded to more than 5 major emergencies or disasters?**

STRAW POLL

1. Attended EMCOMM Workshop in 2022?

2. Currently active in EMCOMM?

3. Relatively new to EMCOMM?

4. Responded to more than 5 major emergencies or disasters?

5. **Believe Amateur Radio has much to contribute to emergency operations?**

ADMINISTRIVIA

- Fire Exits

- Restrooms and Breaks

- Lunch – ~1200 to 1300 hrs.

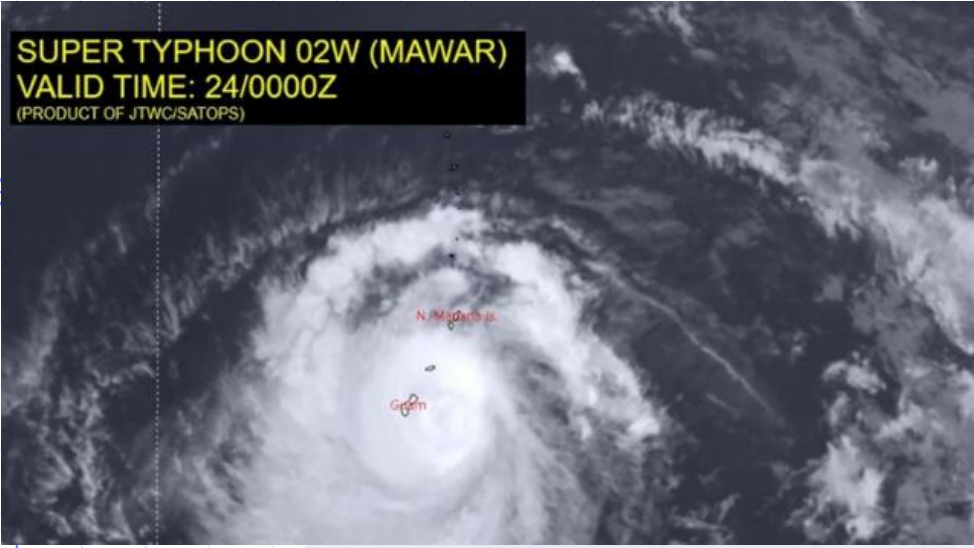- Closing and instructor sign-off

PART I

The Hazards

MOST INCIDENTS are NOT DISASTERS

- Localized flooding – heavy rainfall, snow melt

- High winds – fallen trees, limited utility outages

- Heavy snowfall – avalanches, blocked roads

- Localized wildfires

SUPER TYPHOON 02W (MAWAR)
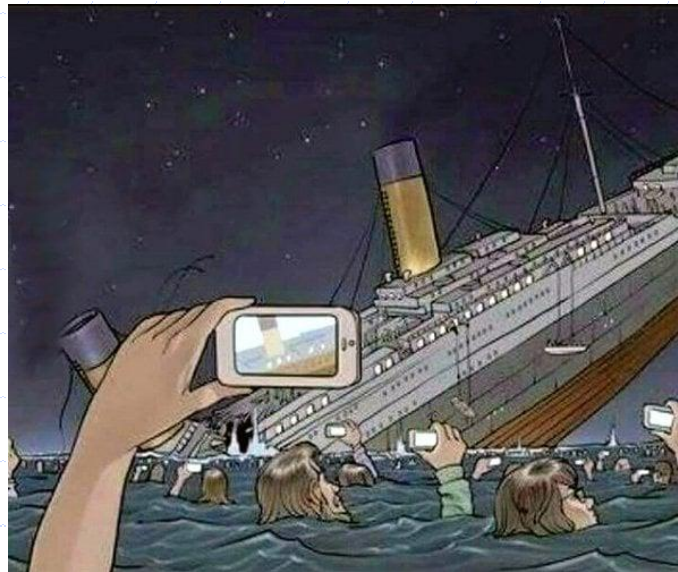VALID TIME: 24/0000Z
(PRODUCT OF JTWC/SATOPS)

CASCADIA CONSEQUENCES

- Tsunami within 15 to 30 minutes

- Loss of human life > 20,000 dead

- Disruption of critical infrastructure

- Damage to roads and bridges

- Damage to buildings and homes

Catastrophic incident

PART II

EM Perspective

EMERGENCY OPERATING CENTER

Where Uncomfortable Officials,
Meet in Unfamiliar Surroundings,
To play Unaccustomed Roles,
Making Unpopular Decisions,
Based on Inadequate Information,
In Much Too Little Time.

EOC Situational Awareness is Limited

WHAT DO EM's WANT?

1. Direct, person-to-person voice communication

   - Replace or augment their LMR
   - Hear an actual voice on the other end

2. Imagery

   - Mapping
   - Photographs
   - Briefing boards and related

3. Lists & Reports

   - Logistics support
   - Missing, injured and evacuated persons
   - Situation & spot reports

AMATEUR RADIO OPTIONS

MOST FAVORABLE

- Shadow operator with HT radio

- On-scene mobile operator

- Bridging of LMR gaps with amateur radio

- Computer messaging using radio connectivity

LESS FAVORABLE

- Home-based operator

- Any mode using largely hardcopy message forms

- Any mode dependent on internet connectivity

PART III

Align your Efforts

Clark County Amateur Radio Club and Clark County Amateur Radio Emergency Service

Joint EMCOMM Concept of Operations

Timeline

	REPORT	RESPOND	SUPPORT
Time element:	Immediate	Within 2 to 4 hours	> 6 hours or specified time/date
Activated by:	Self-activation	Notification by EC and TL	Notification by ERC
Mission focus:	Report local observations	Field response	Augmentation of ARES
Personnel:	Any/All licensed radio amateurs	Credentialed ARES members	CCARC members
Structure:	Individuals	Teams	Individuals
Training:	Limited to NCS	Specified competencies	Specified competencies
Program manager:	James Newsome, KE7ZAC	Michael Barnhart, AE7GQ	John Allen, N9YQ
Website:	https://eyewarn.net/	https://ccareswa.org/	http://www.w7aia.org/

Revised: 20 FEB 2022 Clairmont

Visual Situation Reporting

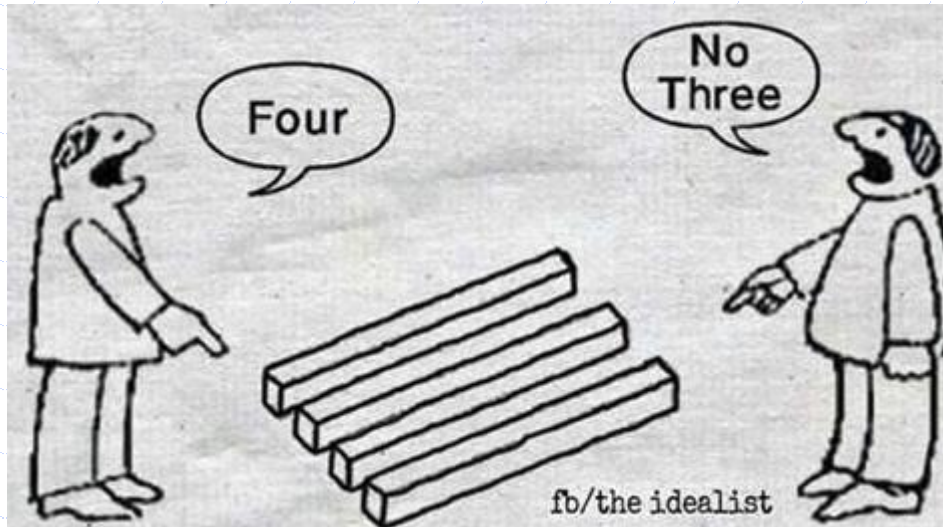| REPORT	
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Time element:	> 6 hours or specified time/date
Activated by:	Notification by ERC
Mission focus:	Augmentation of ARES
Personnel:	CCARC members
Structure:	Individuals
Training:	Specified competencies
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PART IV

Radio Organizations

ARRL ARES

- Amateur Radio Emergency Service

- Sponsored by ARRL

- "When All Else Fails"

- Volunteer operators aligned with local emergency management

RACES

- Radio Amateur Civil Emergency Service

- Replaces amateur radio during wartime

- Members trained and certified by local Civil Defense

- Must be activated by local, state or federal agencies

Other Amateur Radio

- AUXCOMM

- ACS

- EYEWARN

- CERT (emerging)

- VOAD

PART V

What's Out There

Trunked Radio Systems

VHF/UHF Radio Caches

- Requires programming upon arrival

- 'Must-Have' federal interoperable channels

- Potential for loss, diversion

- May include secure modes

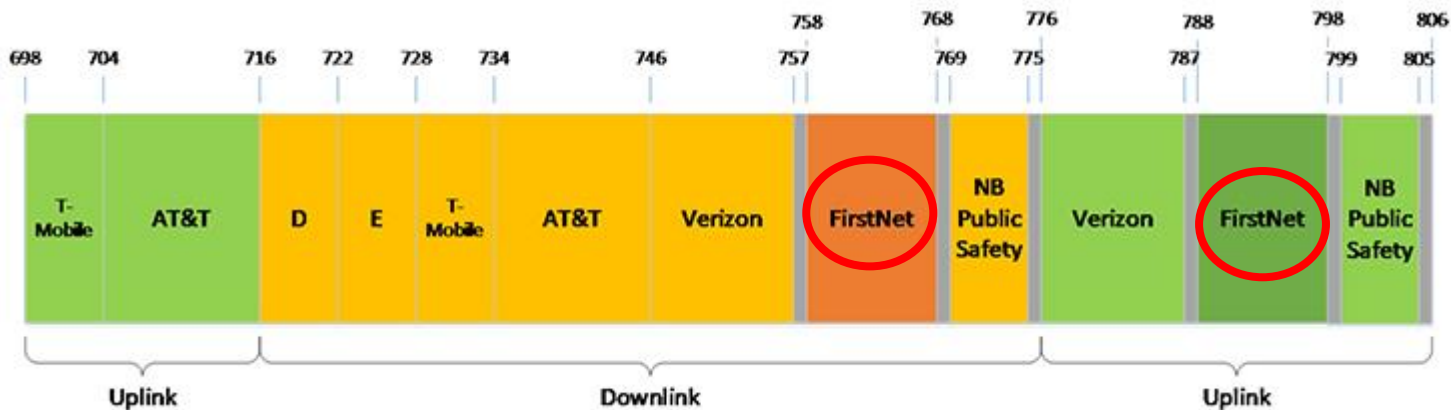# ACU-M
4-port Interoperability system

- Networks up to four radios

- Multiple units can be linked using internet

- Smartphone APP

- Can easily network commercial, government and amateur radio

Cellular Telephony

1. Federal program

2. Reserved portion of cell spectrum

3. Targeted at First Responders

Iridium Satellite

- Low Earth Orbit (LEO) satellite constellation

- PTN and SMS

- Must have an open, wide view of sky

- Low burden - size and weight

- Costly airtime

MSAT-G2 Satellite with Repeater

- Geostationary satellite constellation

- PTT voice and PTN

- Can be packaged with crossband repeater

- Not worldwide

- Limited data

- Less costly airtime

BGAN Satellite

- Geostationary satellite constellation

- Data only (~500 Kbps)

- Supports ROIP voice

- Worldwide on INMARSAT network

- Costly airtime

STARLINK Satellite

- Low Earth Orbit (LEO) satellite constellation

- Data only (~100 Mbps)

- Supports ROIP voice

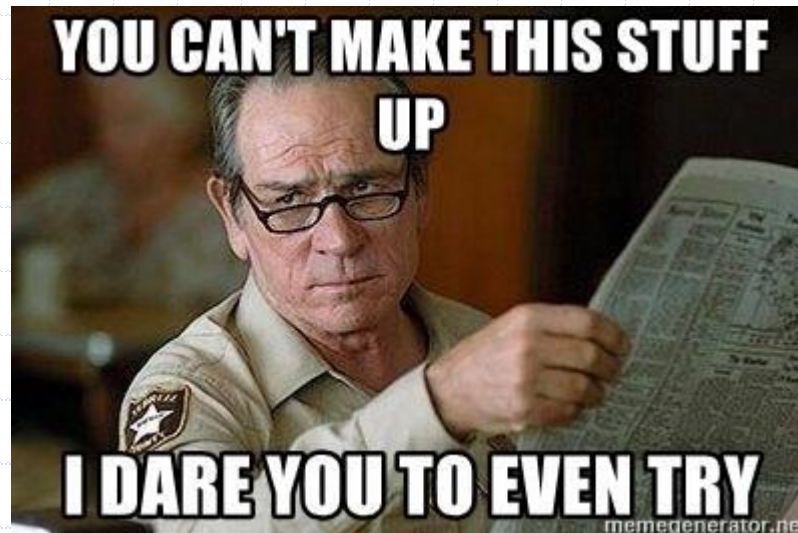- Must have an open, wide view of sky

- Fixed cost (~$125/mo.)

FEDERAL HF-SSB

Micom-2RS Transceiver
U-229 Connector
Astatic RD104E Microphone
©2012 HFLINK

- SHARES

- High-power HF-SSB

- Preset ALE channels

- Requires HF antenna system

- Uncommon in field environment

PART VI

Training and Credentialing

NIFOG

National Interoperability
Field Operations
Guide

U.S. Department of Homeland Security
Emergency Communications Division
Version 1.6.1A

Homeland
Security

January 2019

- Excellent field reference

- Mutual aid frequencies

- Pin-outs

AUXFOG

Auxiliary
Communications
Field Operations Guide (AUXFOG)
US Department of Homeland Security
Office of Emergency Communications
Version 1.1
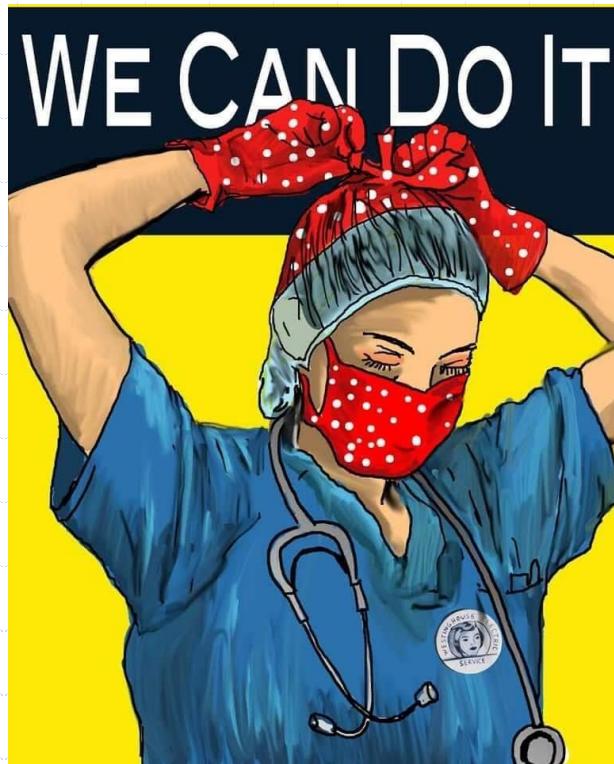
Homeland Security

June 2016

- Excellent field reference

ARES TASK BOOK

- Documents competence testing

- Editable to meet local needs and requirements

- Similar method used by federal agencies and AUXCOMM

PART VII

Putting it all Together

WE CAN DO IT

KEY ELEMENTS

1. **<u>Establish and maintain</u> a meaningful relationship with local emergency management and served agencies**

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2. **Clarify how your organization can best meet local needs**

   - 'Volunteers with communications'
   - Identify roles your org are needed

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3. **RACES mission set included?**

KEY ELEMENTS

4. Negotiate agreements with other amateur radio organizations

MEMORANDUM of AGREEMENT

Between

CLARK COUNTY AMATEUR RADIO CLUB (CCARC)

And

CLARK COUNTY AMATEUR RADIO EMERGENCY SERVICE (CCARES)

This Memorandum of Agreement (MOA) is made and entered into this second day of November, 2021 by and between the CLARK COUNTY AMATEUR RADIO CLUB (CCARC) by its President with the concurrence of its Board of Directors and the CLARK COUNTY AMATEUR RADIO EMERGENCY SERVICE (CCARES) by its Emergency Coordinator with the concurrence of its Leadership Council.

This MOA is nonbinding and subject to revision from time to time subject to the written agreement of both parties.

I. DESCRIPTION OF EACH PARTY

1. Clark County Amateur Radio Club was established in June of 1930 for the purpose of furthering the art and science of amateur radio. The Club is a 501 (c) 3 Not for Profit organization registered in the State of Washington providing a wide range of amateur radio services and programs for its members and the community.

2. Clark County Amateur Radio Emergency Service is a program of the American Radio Relay League (ARRL) sponsored by the Clark Regional Emergency Services Agency (CRESA) for the purposes of providing volunteer emergency services to Clark County and various served agencies.

II. PURPOSE & SCOPE

The purpose of this MOA is to establish and maintain a formal relationship between the CCARC and CCARES establishing CCARES as a program of CCARC. This relationship is defined as semiautonomous with CCARES having its own leadership team, mission, and membership. CCARC shall provide regulatory oversight, interagency coordination, and other fiscal and administrative services.

This relationship shall always be collaborative, mutually beneficial and focused on the best interests of both organizations and the community.

III. CCARC RESPONSIBILITIES UNDER THIS MOA

CCARC shall undertake the following activities:

FINAL: November 2, 2021

Page 1

KEY ELEMENTS

4. Negotiate an agreement with other amateur radio organizations

5. **Support local special events**

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7. **Conduct or participate in local exercises**

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7. Conduct or participate in local exercises

8. **Consider using a Task Book**

Questions?