

Arlington County RACES

Basic Operator Course Unit 2

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Operating Procedures for Voice Nets



Objectives:

You will be able to demonstrate or explain:

- **Why we use a directed net**
- **Net Control Station's Role**
- **Keeping an NCS log**
- **Starting the Net and Checking in**
- **Operating practices used by RACES**
- **Voice communications procedure**
- **Procedural words and phonetics**

A DIRECTED NET ...

- Means Net Control requires stations to get permission before using the net.
- Is recommended whenever more than 4 stations share the same frequency.
- Enables the NCS to prioritize and handle multiple stations with traffic.
- Every RACES operator should know how to call up and run a net !

The Goal of Net Control is to ...

- **PREVENT CHAOS!**
- So Plan Ahead.
- Ensure that there is ALWAYS an alternate Net Control in case you must go off the air!
 - Battery goes dead
 - Thunderstorm activity
 - Any unforeseen or dangerous situation

NET CONTROL STATION'S JOB IS :

- **CONTROL** the net
- **MAINTAIN** net discipline
 - by setting the example
- **MOVE** traffic efficiently
- **TRACK** what's going on...
- **RECORD** what happens...
- **REPORT** to Team Leader, Radio Officer, served agency contact.

NCS Location and Operations

- NCS Should **NOT** operate from an EOC or Command Post
 - Noisy / distracting - to you and agency officials
 - Get a safe, quiet place, with room to operate
 - Plan for antennas and power supplies
- NCS Should **ALWAYS** make sure:
 - Equipment & antennas are in good order
 - Batteries are charged, inspected regularly
 - To use minimum reliable power, so batteries last
 - To be on time, and at the correct frequency!

As NCS, You MUST write things down!

- Because you won't remember everything when it gets *busy!*
- Nor can you brief your relief operator from memory...
- Or reconstruct what happened later...
- And make an accurate report.

NCS Log

Served agencies usually REQUIRE:

- Formal logs (ICS Form 309)
- Status boards (follow Agency SOP)
- These are used for:
 - Asset tracking
 - Personnel Accountability Reports (sometimes called “*PAR-checks*”)
 - Part of the official incident record.

What goes into an NCS log? -1

- **Date, time, frequency**
- **Who originated the traffic, who took it?**
 - Who gets reply when it comes back?
 - Frequency / mode to be used for reply?
- **What was the assignment or action?**
- **No. of pieces, destination, PRIORITY:**
 - ❖ ICS = URGENT, IMMEDIATE, R (ROUTINE)
- **Where? Local Vs. “Through”**

What goes into an NCS log? -2

- **How?**
 - Band? Mode? (FM, digital, SSB, CW)
 - Routing? Which BBS, node, net?
 - Note use of relays or alternate frequencies
- **When?**
 - Sequence of, assignments, actions
- **Who?**
 - Actions taken, coordinating agency
 - If a reply is expected, who gets it?

Net Format – Getting Started

- **NCS gives ID, asks if freq. is in use**
- **Identify the Net and NCS**
 - **Why it's being called now**
 - **Who is NCS and Where located**
 - **For beam heading**
(important on VHF simplex)
- **Avoid long call ups!**
- **“Script” for scheduled nets helps new ops**

EMERGENCY NET PLANNING

- **Match up 'needs' with 'assets'**
- **Who has traffic / needs?**
- **Which traffic is most urgent?**
- **Where is the traffic going?**
- **Who can handle traffic or task?**
- **Assign the work as it comes.**

Net Format

- **Call for Emergency / Priority traffic first**
 - Act on it immediately!
- **Ask for relays, if needed**
- **Call liaisons from other nets**
 - Don't wait until you need liaisons to call them!
- **Identify key receive stations**
 - EOCs, served agencies, EMAC agencies,
 - NGO liaisons,
- **Then move Routine traffic.**

HEALTH & WELFARE TRAFFIC

- **Refer W traffic to NTS outlets**
 - Exceptions are rare and only when specifically requested by local EM.
- **National Traffic System precedence:**
 - Emergency (spelled out)
 - Priority - P
 - Welfare - W
 - Routine – R

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***If the net has a high traffic load,
NCS should***

- **Direct stations with traffic off the net frequency**
- **To pass their traffic while net proceeds**
- **Then return and report to NCS that the exchange was completed**
- **Continue listening.**

TACTICAL CALL SIGNS

- Enable running a net without regard to WHO is operating at that location.
- Tactical Calls identify location or function,
- So that the net moves more ***EFFICIENTLY.***
- Provide continuity *when operators change.*
- Use YOUR tactical call *to identify*
- *Contact others* by THEIRS
- Listen for ***YOURS***

Comply with Part 97 FCC Rules

- **Add your call sign (FCC identifier) to the LAST transmission in a series**
- **Excessive ID wastes time**
- **NCS IDs every 10 minutes**

Responsibilities of Net Participants

- **Know how the net runs:**
 - Learn net procedures by training exercises
- **Respond ONLY to NCS**
 - **Listen continuously, answer immediately**
- **Request NCS ok to take a break or leave.**
- **NEVER leave a net without checking out!**
- **Arrive before your shift at the operating position, set up, briefed, ready to go!**

PLAN TO BRIEF YOUR RELIEF OPERATOR

- **Write down all oral instructions.**
- **Update them as needed.**
- **Tell relief operator EVERYTHING... that he / she needs to know.**
- **Use *OPBRIEF* job aid**
- **Pass *OPBRIEF* + *Communications Log ICS 309* to relief operator.**

BRIEFING YOUR RELIEF OPERATOR - 1

- Refer to ***OPBRIEF*** job aid:
- **What is our assignment?**
- **Who is the served agency Official in Command?**
- **How are agency staff recognized?**
- **Nearest telephone, location and number**
- **Location of toilet, water, food, first aid, and other supplies.**

BRIEFING YOUR RELIEF OPERATOR - 2

- **What is my tactical call?**
- **With whom do I keep regular contact?**
- **What are their tactical call signs?**
- **Where are the net stations located?**
- **What type of activity is pending?**
- **What frequencies should I use for what function?**
- **Radio, power supply, antenna info.**

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OPERATING PRACTICES -1

- **“ ACCURACY+ BREVITY= CLARITY!”**
- Establish initial contact by stating your call sign only:
- **“This is (pause) Whiskey Three Alpha Bravo Charlie”**
- Wait for NCS to recognize you before transmitting further

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OPERATING PRACTICES -2

- **Think before you speak & transmit.**
- **WAIT 2-3 seconds before keying, and between transmissions, to allow other stations to call NCS.**
- **Interrupt, IF you have important traffic.**
- **When necessary, ID and SAY WHY:
– “WC4VAC, with info.”**

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OPERATING PRACTICES -3

- **Don't call endlessly, unless it is truly urgent.**
- **Answer questions directly & briefly.**
(Let NCS ask if more detail needed.)
- **Use PLAIN LANGUAGE ONLY**
- **DO USE short simple phrases.**
- **No Q-signals on phone nets.**

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OPERATING PRACTICES - 4

- **WAIT for acknowledgement**
 - Before proceeding further
- **ACKNOWLEDGE**
 - Transmissions to you
- **ASK who a message is for if you don't know**
- **Let third parties speak directly to each other**
 - Legal, expedient and necessary

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OPERATING PRACTICES - 5

- **WRITE** down names of served agency officials for whom you send traffic
- **Enter each Subject or Task as a Line item entry on ICS309 Communications Log**
 - **Necessary in case they wander off before you get a reply or need more information**
 - **Helps eliminate duplicate requests**
- **“Record” communications should always be signed with the name and title of the originator (to authenticate)**

RACES OPERATING PRACTICES - 6

- **Don't pass names over the radio**
 - **Only names of agency officials to authenticate messages**
- **NCS approves any exceptions**
 - **If doing so is operationally necessary**

RACES OPERATING PRACTICES - 7

- **Don't say frequencies over the air**
 - **Use Comm Plan "Channel ID" designators**
 - **Refer to Arlington ICS 205**
- CERT – RACES Communications Plan**
- **Reduces malicious interference.**

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Radio communications plan – ICS 205	1. Incident Name	2. Date / Time Prepared	3. Operational Period Date / Time
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4. Amateur (ARS) and General Mobile Radio Service (GMRS) Channel Utilization

Radio Type/Cache	Channel ID	Function	Frequency / Tone	FYI Info.	Tactical Calls of NCS, Agencies and Liaisons
HF-2m	Alpha 1	OPNET PRIMARY SIMP	146.430		
HF-2m	Alpha 2	OPNET ALT. SIMPLEX	146.580		
HF-2m	Alpha 3	OPNET BACKUP RPTR	145.150-		
HF-2m	Bravo 1	LOGNET PRIMARY RPTR	146.625-(107.2)		
HF-2m	Bravo 2	LOGNET ALT SIMPLEX	146.415		Mutual Aid, Training
IF-70cm	Bravo 3	LOGNET ALT SIMPLEX	445.950		
IF-GMRS	Charlie 1	ADMIIN PRIMARY RPT	GMRS Pair TBD		
IF-GMRS	Charlie 2	ADMIN BACKUP RPTR	462.675+(141.3)	REACT	Requires GMRS Lic.
HF-SSB	Charlie 3	RACES REG. COORD	144.250USB		
HF-2m	Delta 1	DIGITAL OPS	145.73		1200 baud / TCP/IP
IF-75m	Echo 1	HF EVENING PRIMARY	3947 LSB		
IF-60m	Echo 2	HF EVENING ALT	5330.5 USB		
IF-40m	Foxtrot 1	HF DAY PRIMARY	7243 LSB		
IF-40m	Foxtrot 2	HF DAY ALTERNATE	7255 LSB		
IF-10m	Foxtrot 3	Base-to-mobile-Ops	29.600 FM		
IF-GMRS	Golf 1	Neigh. Watch Guard Freq	462.5625	FRS1	Max 5w w/GMRS Lic.
IF-GMRS	Golf 2	CERT Ops	462.5875	FRS2	Max 5w w/GMRS Lic.
IF-GMRS	Golf 3	CERT Ops	462.6125	FRS3	Max 5w w/GMRS Lic.
IF-GMRS	Golf 4	CERT Ops	462.6375	FRS4	Max 5w w/GMRS Lic.
IF-GMRS	Golf 5	CERT Ops	462.6625	FRS5	Max 5w w/GMRS Lic.
IF-GMRS	Golf 6	CERT Ops	462.6825	FRS6	Max 5w w/GMRS Lic.
IF-GMRS	Golf 7	CERT Ops	462.7125	FRS7	Max 5w w/GMRS Lic.
IF- FRS	Golf 8	CERT Ops	467.5625	No GMRS	FRS only 500mw
IF - FRS	Golf 9	CERT Ops	467.5875	No GMRS	FRS only 500mw
IF - FRS	Golf 10	CERT Ops	467.6125	No GMRS	FRS only 500mw
IF - FRS	Golf 11	CERT Ops	467.6375	No GMRS	FRS only 500mw
IF - FRS	Golf 12	CERT Ops	467.6625	No GMRS	FRS only 500mw
IF- FRS	Golf 13	CERT Safety-EMERGENCY	467.6875	R I T	FRS only 500mw
IF - FRS	Golf 14	CERT Admin.	467.7125	No GMRS	FRS only 500mw

5. Prepared by (Radio Officer or Field Team Leader)

Name _____ FCC Call sign _____

RACES OPERATING PRACTICES - 8

- **TO AVOID HUMAN ERROR:**
- Get fully-worded, written & signed messages and enter on ICS Form 213
- **Paraphrasing introduces errors**
- If given a message orally, write it down, then read it back verbatim for approval by the originating official
- Pass the message exactly as you read it back to the originator who approved it.

RACES OPERATING PRACTICES- 9

- **Address traffic to specific stations**
- **Ask requestor who should handle**
 - **The requestor usually knows better than NCS who should get the message**
- **Send traffic directly to that party**
 - **If NCS isn't the one who to handle it, not being specific wastes time asking or explaining it again to someone else**

RACES OPERATING PRACTICES - 10

- Pause after keying, before speaking, to avoid clipping the first syllable.
- *Don't speak louder in a noisy environment.*
- If you speak louder than needed for full modulation, voice audio is clipped, which *reduces* intelligibility.
- Preventive Steps:
 - Use an earphone or headset
 - Shield your microphone
 - Speak ACROSS the microphone
 - Use a normal speaking voice

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Call Correctly:

- **LISTEN!** before transmitting
 - Don't interfere with contact in progress
- Say the “**tactical call**” of the station you want to contact, i.e. “**Net control**” (or more simply “**NET**”)
- Followed by the pro word ‘**THIS IS**’ . .
- Followed by “**your tactical call**”

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Acknowledge Calls Correctly:

When you hear a call to you, reply:

- **“THIS IS”**

followed by your tactical call-sign

Then tell the station calling that it is OK to proceed by saying:

- **‘GO AHEAD’**

Use Procedural Words Correctly

- **Prowords expedite traffic with minimal errors, but are effective **ONLY** if everyone understands and uses them correctly**
- **Teach New Operators “The Basic Four”**

The “Basic Four”

Every RACES member should know and use these:

- **“THIS IS”** - ALWAYS use to identify
- **“OVER”** - I have finished transmitting and *I am waiting for and expect your reply.*
- **“GO AHEAD”** - Proceed with traffic
- **“OUT”** - End of Contact - *I have finished and expect no reply.*

OVER or OUT ?

Please GET IT RIGHT :

- **“OVER”** - I have stopped, it's your turn to transmit.
- **“OUT”** - Tells everyone that the contact has ended.

OK... what about "CLEAR" ?

- **“Clear”** is used in a “free” net to release the frequency

More Prowords - 1

- **"ROGER"** means the same as "OK"
 - "Received and understood"
 - NOT used for 'yes' or 'affirmative'
- **"CONFIRM"** *may abbreviate*
"CHARLIE"
 - Acknowledges a fill or traffic sent

More Prowords - 2

- **"AFFIRMATIVE"** or **"NEGATIVE"**
 - Use instead of "yes" or "no"
 - Because it sounds distinctive and has clearer meaning under marginal voice conditions.
- **"SAY AGAIN"** - Use to request a 'fill'
 - Example: 'SAY AGAIN ALL AFTER...<known word>'

More Prowords - 3

- **“CORRECTION”** - I made an error and am transmitting again from after the last correct word
- **“CORRECT”** - You are correct
- **“BREAK”** - Use **ONLY** to separate message text from headers or signature blocks in messages
 - **NEVER** use ‘BREAK’ to interrupt a contact
(*In an EMERGENCY, use plain language*)

If you MUST interrupt:

**“IDENTIFY!
and SAY WHY”**

“WC4VAC - INFO”

“WA3GIN- URGENT! ”

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More Prowords - 4

- **"COPY"** Means - I have heard and understand the traffic sent
 - *Don't use Q-signals - "QSL"*
 - Don't use jargon - "direct"

- **"WAIT"** Means cease transmission until told **"Go Ahead"** by the NCS
 - Example: **"KI4FON acknowledged, WAIT... WA3GIN call your station."**

More Prowords - 5

- **“FIGURE GROUP”**
 - Next group following is numbers
- **“INITIAL”**
 - Single letter follows
- **“LETTER GROUP”**
 - Next group following is letters

Yes, still more Prowords - 6

- **“MIXED GROUP”**
 - Next group contains both letters and figures
- **“WORDS TWICE”**
 - In really bad conditions say each word twice
- **“I SPELL”** - Copy as I spell phonetically
 - Don't say 'Common Spelling'
 - Do not improvise phonetics!
 - Speak SLOWLY and DISTINCTLY!

Always use Standard ITU Phonetics

A - Alpha

B - Bravo

C - Charlie

D - Delta

E - Echo

F - Foxtrot

G - Golf

H - Hotel

I - India

J - Juliet

K - Kilo

L - Lima

M - Mike

N - November

O - Oscar

P - Papa

Q - Quebec

R - Romeo

S - Sierra

T - Tango

U - Uniform

V - Victor

W - Whiskey

X - Xray

Y - Yankee

Z - Zulu

FIGURE GROUP:

When conditions are poor numbers must be exaggerated to be understandable.

1="Wun"

2="Too"

3="Tree"

4="Fower"

5="Fife"

6="Siks"

7="Sevven"

8="Ate"

9="Niner"

0="Zearow"

- Never say the letter "OH" as in OSCAR when you mean figure "ZERO"

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