



More Privileges...

More Fun...



FRRL Program

March, 2007

AH6EZ

February 23 was a new beginning...

- No more CW testing
- CW is now just like all other non-voice modes
 - Optional but challenging and fun
- All Technicians now have Novice privileges
- Any license is a progressively more difficult written test
- No CW rule is on top of other December 15 rule Changes
 - General: Larger 75m,40m,15m Phone Bands
 - Advanced: Larger 75m and 40m Phone Bands
 - Extra: Larger 75m and 40m Phone Bands
 - Kenwood Sky Command legal with 2m auxiliary control
 - ...



CW is not going away soon

- Still good and useful
 - Low power operation possible
 - Simple low cost transmitter
 - Very spectrum efficient
 - Fun “secret” language for kids
 - 73% of hams know it to some extent
 - DX stations use it a lot

ARRL Top Ten Reasons to Try Morse Code

1. It's a new way to communicate
2. Age is no barrier
3. It's a minimalist mode
4. You'll know something most people don't
5. It's like text messaging without the monthly bill
6. More makes you use your head
7. CW has a low profile
8. There's no language barrier with Morse Code
9. It's a great way to work distant stations
10. You've already got CW privileges

What can I do with Technician License?

- Previous Rules

 - Full power and all modes above 50 MHz

- New Rules

 - 28.3-28.5 MHz: Voice 200W

 - 28.0-28.3 MHz: Any non-voice mode 200W

 - 3.525-3.6 MHz: CW only 200W

 - 7.025-7.125 MHz: CW only 200W

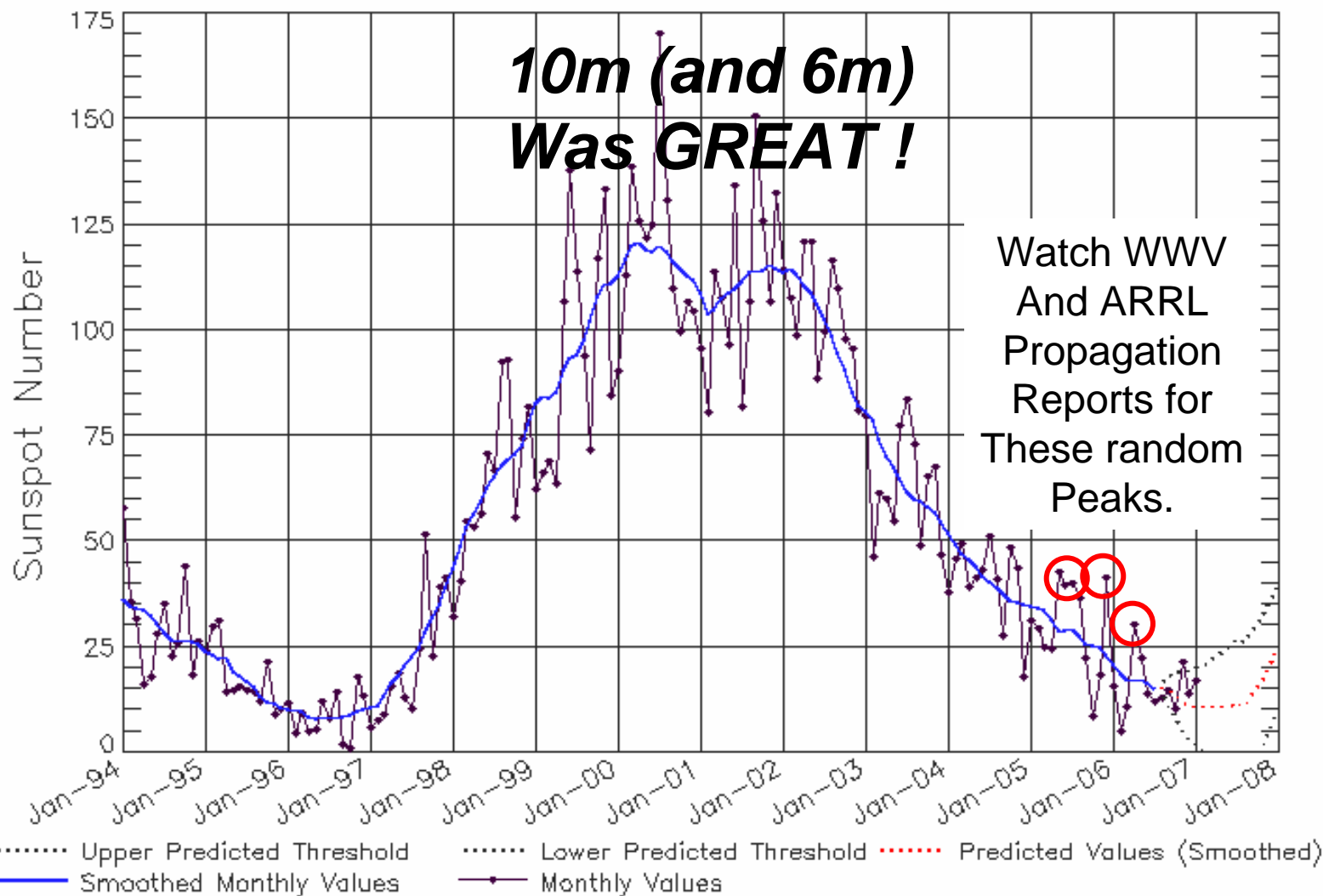
 - 21.025-21.2 MHz: CW only 200W

Technicians above 50 MHz

- Anytime
 - FM Repeaters and Simplex
 - APRS and Packet
 - Satellites
 - Greater distance using SSB and CW
 - Meteor scatter and other tropo scatter modes
 - Public service and weather spotting
- For the next few years (low sun spots)
 - Hope for Sporadic E openings on 6m
- Several years from now (higher sun spots)
 - DX openings on 6m with F layer

Present Solar Cycle

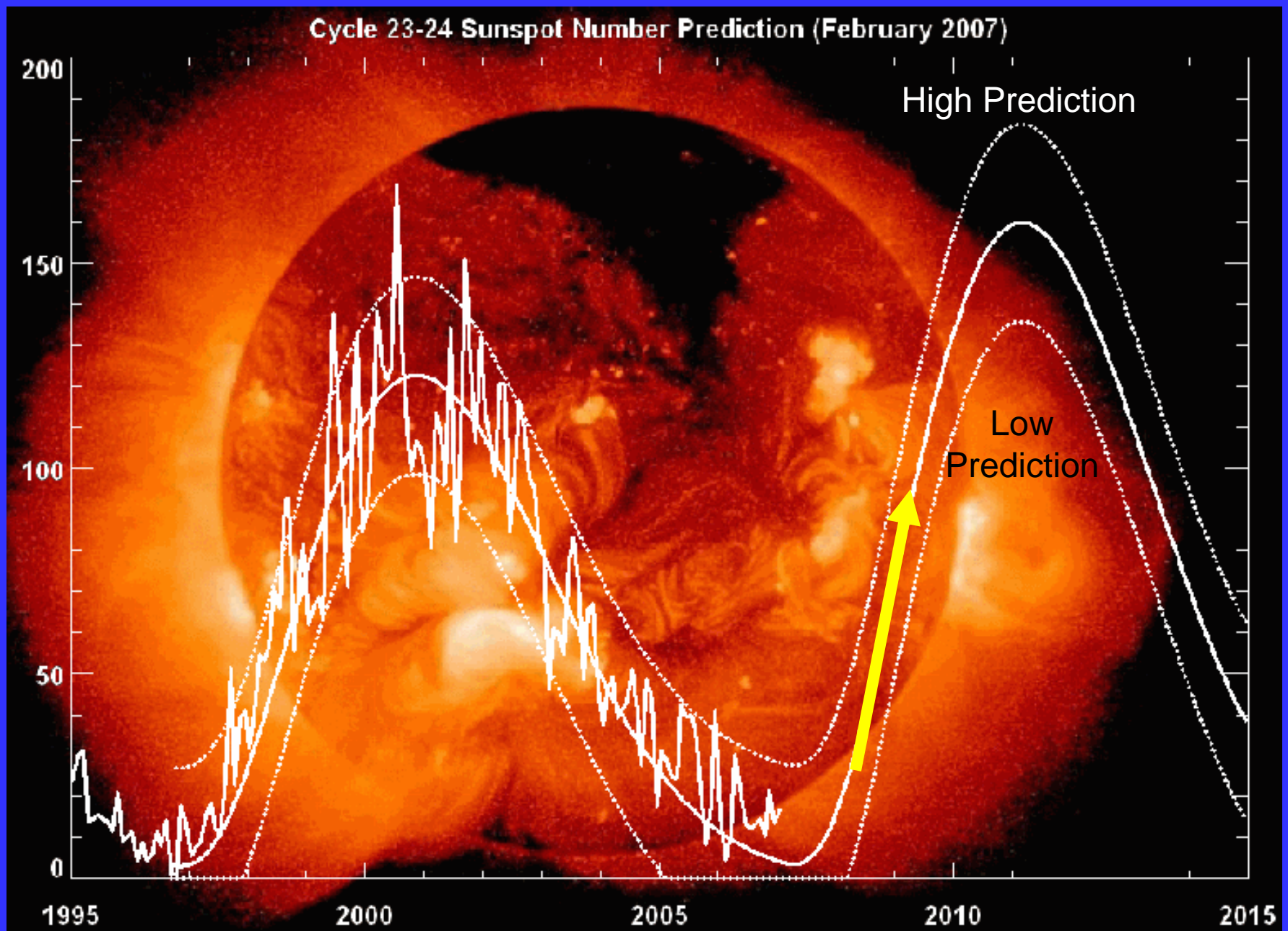
ISES Solar Cycle Sunspot Number Progression
Data Through 31 Jan 07



Updated 2007 Feb 1

NOAA/SEC Boulder, CO USA

In about 2 years, LOOK OUT !



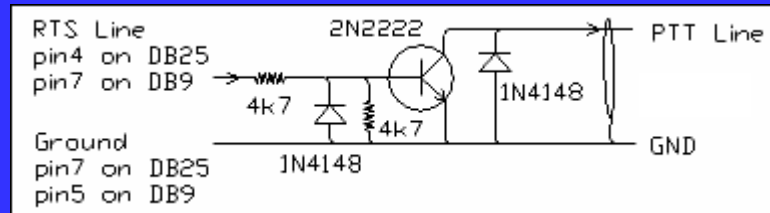
Technicians below 50 MHz

- Anytime
 - Local 10m contacts (Voice or Digital Modes)
 - Local 10m nets (COLN CW 28.15, not SSB 28.72)
- CW on Novice bands
 - How do I do CW if I don't know it?
 - Computer
 - Software
 - Rig Interface
 - Radio and Antenna
 - Some knowledge of propagation
 - Knowledge of jargon and procedure

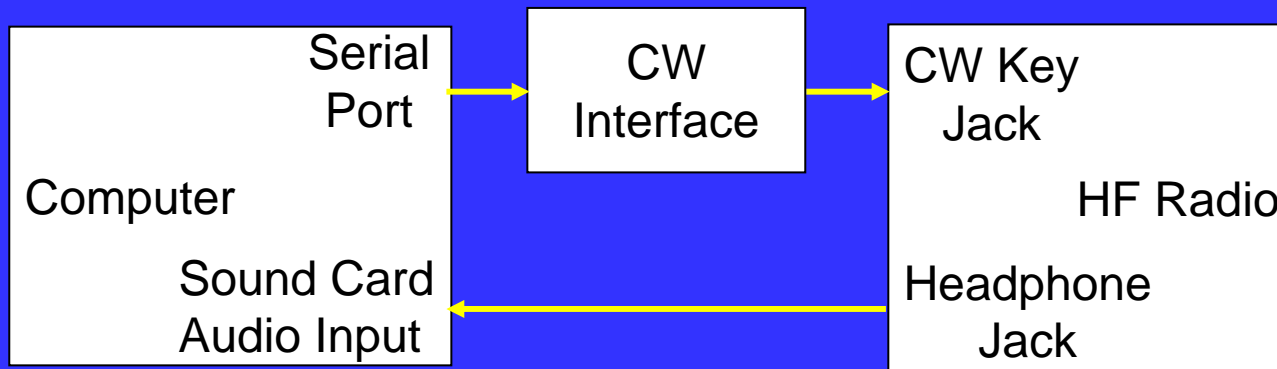
CW QSO with No Copy?

- Computer and software can copy CW for you
 - But not necessarily 100% correct
 - The bad part is you might not see the errors
- You will need to find stations meeting this criteria
 - Reasonably strong
 - Consistent speed and spacing
 - Minimal interference (or good radio filtering)
 - They are calling CQ
 - This way you can have a predictable QSO
 - If you call CQ you might get an answer that software can't copy
 - You can have minimal QSO or if good copy a ragchew

Physical Setup for Computer CW



Antenna



Transmit and Receive
Software

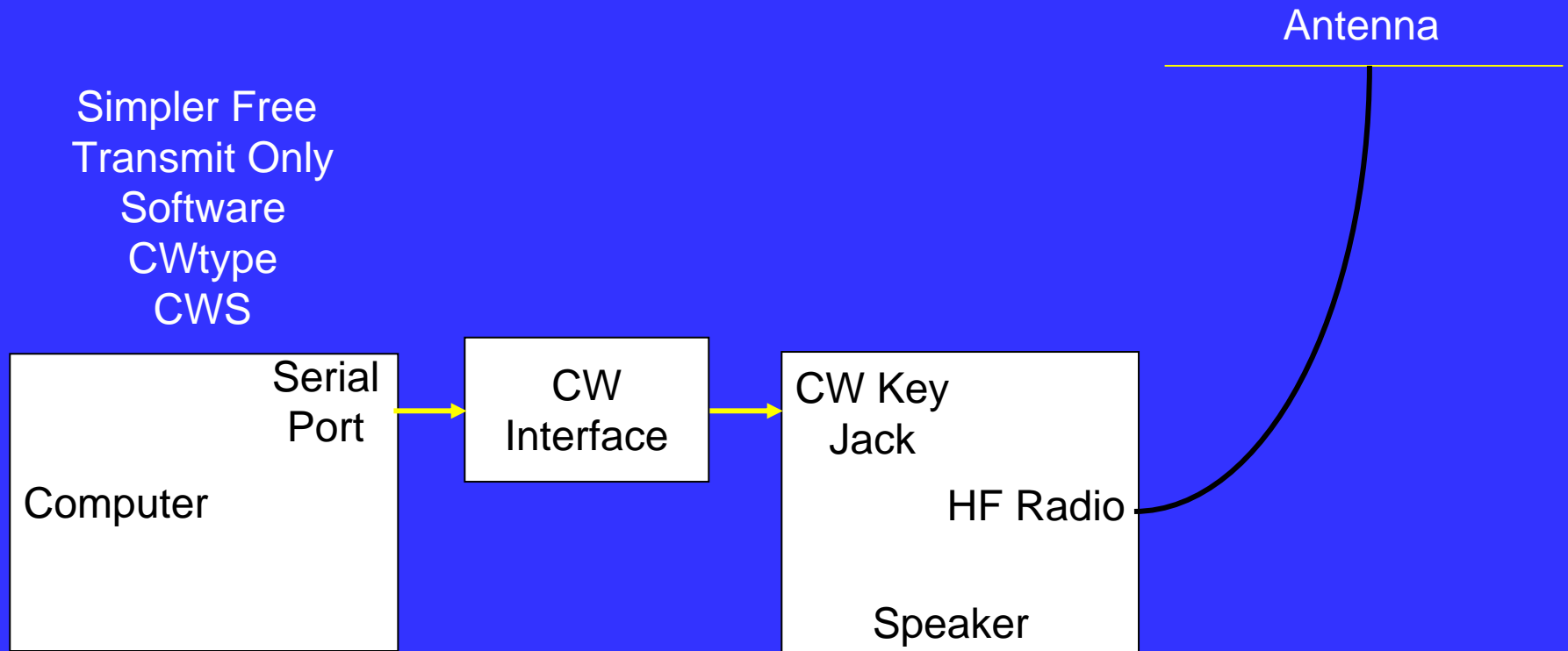
CWGET \$41 (+CWTYPE \$0)

MixW (\$50)

Multi-PSK(\$40)

Physical Setup for Computer CW

Simpler Free
Transmit Only
Software
CWtype
CWS



Acoustic coupling

MFJ-461
Code Reader



\$90

Physical Setup for Computer CW

MFJ-464 (\$190)



Antenna

So I am copying all this CW
stuff and it makes no sense !

Here is some guidance about CW
abbreviations and a typical QSO

Typical CW QSO

1. W9CEQ: CQ CQ DE W9CEQ W9CEQ K
2. AH6EZ: W9CEQ DE AH6EZ K
3. W9CEQ: AH6EZ DE W9CEQ FB OM TNX FER CALL UR RST 599 599 QTH BATAVIA, IL BATAVIA, IL OP BENNY BENNY HW? AH6EZ DE W9CEQ KN
4. AH6EZ: W9CEQ DE AH6EZ FB BENNY GM UR RST 599 599 QTH ST. CHARLES, IL ST. CHARLES, IL NAME DICK DICK WX 50F CLDY HW CPY? BK
5. W9CEQ: FB DICK TNX FER CALL WX 40F SNOW HERE AGE 80 BEEN HAM SINCE 1946 RIG TS430 50W TO 3 EL YAGI UP 50 FT HW? BK
6. AH6EZ: RR QSB SOLID CPY AGE 54 HERE BEEN HAM SINCE 1969 RIG IC756PRO3 100W TO GAP TITAN VERT TNX FER FB QSO BENNY CU AGN GUD DX 73 GM W9CEQ DE AH6EZ SK
7. W9CEQ: AH6EZ DE W9CEQ OK DICK TNX FER QSO 73 CU AH6EZ DE W9CEQ SK ..
8. AH6EZ: ..

Common CW Abbreviations and <Prosigns>

ABT - About
 ADR - Address
 AGN - Again
 AM - Amplitude Modulation
 ANT - Antenna
 <AR> End of message
 <AS> Stand by; wait
 <AC> - used for the @ sign for E-Mail Addresses
 BCNU - Be seeing you
 BD - Bad
 BK - Break, Break in
 BN - Been
 <BT> Separation (break) between thoughts
 BTW - By The Way
 BURO - Bureau
 B4 - Before
CK - Ckeck
 <CL> - I am closing my station
CLG - Calling
CONDX - Conditions
CQ - Calling any station
CU - See You
CUAGN - See You Again
CUD - Could
CUL - See You later
CUZ - Because
CW - Continuous wave
DE - From, This Is
DIFF - Difference
DN - Down
DR - Dear
DX - Distance
EL - Element
ES - And
ENUF - Enough
EU - Europe
EVE - Evening
FB - Fine Business, excellent
FER - For
FM - Frequency Modulation: From
FONE - Phone
FQ - Frequency
Freq -- Frequency
FWD -- Forward

GA - Go ahead; Good Afternoon
GB - Good bye, God Bless
GD - Good, Good Day
GE - Good Evening
GESS - Guess
GM - Good morning
GN - Good night
GND - Ground
GP -- Ground Plane
GUD - Good
 <HH> Error in sending
HI - The telegraph laugh; High
HPE - Hope
HR - Here; Hear, Hour
HRD - Heard
HRS - Hours
HRD -- Heard
HV - Have
HVY - Heavy
HW - How, How Copy?
II -- I Repeat
 <II> Short form of <HH>
 <IMI> - Repeat, Say Again
INFO - Info
JA - Japanese Station
K - Invitation To Transmit
KN - Go only, invite a specific station to transmit
LID - A poor operator
LP - Long Path
MGR - Manager
MULT - Multiplier
N - Nine (as in Signal Report)
NIL - Nothing; I have nothing for you; Not In Log
 <NR> - Number, Near
OK - Correct
OM - Old man
OP - Operator
OPR - Operator
PSE - Please
PWR - Power
R - Received as transmitted; Are;
RCVR - Receiver
RE - Concerning; Regarding
REF - Refer to; Referring to; Reference

RFI - Radio frequency interference
RIG - Station equipment
ROTFL - Rolling on the floor laughing
RPT - Repeat, Report
RTTY - Radio teletype
RST - Readability, strength, tone
RX - Receive, Receiver
SASE - Self-addressed, stamped envelope
SED - Said
SEZ - Says
SHUD - Should
SIG - Signature; Signal
 <SK> Out; clear (end of QSO, no reply expected.)
SK - Silent Key
SKED - Schedule
SP - Short Path
SRI - Sorry
SS - Sweepstakes
SSB - Single Side Band
STN - Station
SWL - Short Wave Listener
T - Zero (with numbers)
TEMP - Temperature
TEST - Testing or Contest
TMW - Tomorrow
TKS - Thanks
TNX - Thanks
TR - Transmit
TU - Thank you
TVI - Television interference
TX - Transmitter; Transmit
TXT - Text
U - You
UR - Your; You're
URS - Yours
VERT - Vertical
VFO - Variable Frequency Oscillator
VY - Very
W - Watts
WID - With
WKD - Worked
WL - Well; Will
WPM - Words Per Minute
WRK - Work

More CW Abbreviations and RST

WUD - Would

WX- Weather

XCVR - Transceiver

XMAS - Christmas

XMTR - Transmitter

XTAL - Crystal

XYL - Wife

YF -Wife

YL - Young lady

YR - Year

Z - Zulu Time

33 - Fondest Regards

55 - Best Success

73 - Best Regards (NOT 73'S) *

88 - Love and kisses (NOT 88'S)

161 - 73+88=161" first came about in FOC circles
(First-Class CW Operators' Club, founded by Louis Varney G5RV.
The essential meaning is "Best regards to you and your XYL".

? question (like QRL?)

Number Abbreviations

1 = A 2 = U 3 = V 4 = 4 5 = E, 6 = 6, 7 = B 8 = D 9 = N 0 = T

READABILITY

1 -- Unreadable

2 -- Barely readable, occasional words distinguishable

3 -- Readable with considerable difficulty

4 -- Readable with practically no difficulty

5 -- Perfectly readable

SIGNAL STRENGTH

1 -- Faint signals, barely perceptible

2 -- Very weak signals

3 -- Weak signals

4 -- Fair signals

5 -- Fairly good signals

6 -- Good signals

7 -- Moderately strong signals

8 -- Strong signals

9 -- Extremely strong signals

TONE

1 -- Sixty cycle a.c. or less, very rough and broad

2 -- Very rough a.c. , very harsh and broad

3 -- Rough a.c. tone, rectified but not filtered

4 -- Rough note, some trace of filtering

5 -- Filtered rectified a.c.but strongly ripple-modulated

6 -- Filtered tone, definite trace of ripple modulation

7 -- Near pure tone, trace of ripple modulation

8 -- Near perfect tone, slight trace of modulation

9 -- Perfect tone, no trace of ripple or modulation of any kind

X = the signal is rock steady like a crystal controlled signal;

C = the signal is chirpy as the frequency varies slightly with keying;

K = the signal has key clicks.

A = Aurora distortion

X is from the early days of radio when such steady signals were rare.

If you want a basic QSO you can pre-program macro keys for the sequence of the QSO

Typical CW Q Signals

1. QRL Is the frequency busy? Frequency is busy, please do not interfere
2. QRM Is my transmission being interfered with? Your transmission is being interfered with
3. QRN Are you troubled by static? I am troubled by static
4. QRO I am running high power
5. QRP I am running less than 5 watts
6. QRS Shall I send more slowly? Send more slowly (___ WPM.)
7. QRT Shall I stop sending? Stop sending. Or I am going off the air
8. QRX Please wait for X minutes
9. QRZ Who is calling me?
10. QSB Are my signals fading? Your signals are fading.
11. QSL Can you acknowledge receipt? I am acknowledging receipt.
12. QSO Amateur radio communication or conversation
13. QSY Shall I change to another frequency? Changing to another frequency.
14. QTH What is your location? My location is ___.

Adding a question mark turns it into a question

Time for a demonstration !

CwGet and CwType

The image displays two software windows from the UA90V suite. The top window, titled "UA90V CwGet Unregistered", features a menu bar (File, Setup, Zoom, Help) and a toolbar with buttons for "AutoTh", "OnTop", "GoToMax", "AutoGTM", "10", "300", "AFC", "Replay", "Save", and "Sp.Lock". Below the toolbar is a spectral plot with a frequency axis from 0 to 3000 Hz. A prominent signal peak is visible around 1000 Hz. Underneath the plot, the text "vvv vvv vvv cnk co" is displayed. At the bottom of this window is a status bar showing: MF: 140 Hz, BF: 200, 770 Hz, 0.001, 81 LPM, 16.1 WPM, and FrB: 15.

The bottom window, titled "UA90V CwType", has a menu bar (File, Setup, Edit Macros, Tune, Help) and a toolbar with "Sp: 100", "D/D: 3.00", "ILS: 3", "60", "Beacon", "TX", and "Pause" buttons. Below the toolbar is a row of function keys: F1 CQ2x2, F2 Call 1x1, F3 Xmsn 1, F4 Xmsn 2, F5 Info 3, F6 Start TX, F7 BTU, F8 Sign, F9 TX, F10 RX, F11 Clear all, and F12. A text entry field shows "Clear C:" followed by "R: 599", "N: om", and "Q:". The status bar at the bottom indicates "20", "100.0 LPM", "20.0 WPM", and "RX".

So What if You Are Not Interested in CW?

All you have to do is study for and pass the General test !

*Generals can do HF Voice and digital keyboard modes
RTTY PSK ...*

General Class Voice Frequencies

- All of 160m (although usually 1.85-2.0)
- 80m: 3.8-4.0 MHz
- 60m: Five 50W PEP ERP USB channels
- 40m: 7.175-7.3 MHz
- 20m: 14.225-14.35 MHz
- 17m: 18.1-18.168 MHz
- 15m: 21.275-21.45 MHz
- 12m: 24.93-24.99 MHz
- 10m: 28.3-29.7 MHz (Including FM Repeaters)

When do I use which band?

It depends on how far or close you want to talk?

Summer vs Winter differences

Daytime vs Nighttime differences

Summer Daytime

Noisy 160,80m
Midwest+ 40m
Whole US and DX 20m
Spotty Far US and DX 17m
Some DX 15m
Rare DX 10m

Summer Nighttime

High noise on 160,80m some on 40m
Some DX on 20m early evening
17-10m Ground Wave local QSO

Today's Low Sun Spots

Winter Daytime

Quiet Midwest 160,80m
Quiet Midwest+ 40m
Whole US and DX 20m
Far US and some DX 17m
Some DX 15m
Rare DX 10m

Winter Nighttime

DX and low noise on 160,80,40m
Some closer QSO on 160,80m
DX on 60m limited by few allocations
40m Foreign Broadcast 7.1-7.3
20m-10m Ground Wave local QSO

Where are all these callsigns from?

A standard country prefix list is not enough!

You should also refer to an
ITU Callsign Allocation List

Especially true during contests, trying to attract you to work them.
There are even CQ Prefix Contests where prefixes are multipliers

This is a partial ITU list go to
<http://www.arrl.org/awards/dxcc/itucalls.html>

AAA-ALZ United States of America	ESA-ESZ Estonia (Republic of)	J3A-J3Z Grenada
AMA-AOZ Spain	ETA-ETZ Ethiopia (Federal Democratic Republic of)	J4A-J4Z Greece
APA-ASZ Pakistan (Islamic Republic of)	EUA-EWZ Belarus (Republic of)	J5A-J5Z Guinea-Bissau (Republic of)
ATA-AWZ India (Republic of)	EXA-EXZ Kyrgyz Republic	J6A-J6Z Saint Lucia
AXA-AXZ Australia	EYA-EYZ Tajikistan (Republic of)	J7A-J7Z Dominica (Commonwealth of)
AYA-AZZ Argentine Republic	EZA-EZZ Turkmenistan	J8A-J8Z Saint Vincent and the Grenadines
A2A-A2Z Botswana (Republic of)	E2A-E2Z Thailand	KAA-KZZ United States of America
A3A-A3Z Tonga (Kingdom of)	E3A-E3Z Eritrea	LAA-LNZ Norway
A4A-A4Z Oman (Sultanate of)	E4A-E4Z Palestinian Authority	LOA-LWZ Argentine Republic
A5A-A5Z Bhutan (Kingdom of)	E5A-E5Z New Zealand - Cook Islands	LXA-LXZ Luxembourg
A6A-A6Z United Arab Emirates	FAA-FZZ France	LYA-LYZ Lithuania (Republic of)
A7A-A7Z Qatar (State of)	GAA-GZZ Great Britain and Northern Ireland	LZA-LZZ Bulgaria (Republic of)
A8A-A8Z Liberia (Republic of)	HAA-HAZ Hungary (Republic of)	L2A-L9Z Argentine Republic
A9A-A9Z Bahrain (State of)	HBA-HBZ Switzerland (Confederation of)	MAA-MZZ Great Britain and Northern Ireland
BAA-BZZ China (People's Republic of)	HCA-HDZ Ecuador	NAA-NZZ United States of America
CAA-CEZ Chile CFA-CKZ Canada	HEA-HEZ Switzerland (Confederation of)	OAA-OCZ Peru
CLA-CMZ Cuba	HFA-HFZ Poland (Republic of)	ODA-ODZ Lebanon
CNA-CNZ Morocco (Kingdom of)	HGA-HGZ Hungary (Republic of)	OEA-OEZ Austria
COA-COZ Cuba	HHA-HHZ Haiti (Republic of)	OFA-OJZ Finland
CPA-CPZ Bolivia (Republic of)	HIA-HIZ Dominican Republic	OKA-OLZ Czech Republic
CQA-CUZ Portugal	HJA-HKZ Colombia (Republic of)	OMA-OMZ Slovak Republic
CVA-CXZ Uruguay (Eastern Republic of)	HLA-HLZ Korea (Republic of)	ONA-OTZ Belgium
CYA-CZZ Canada	HMA-HMZ Korea (Democratic People's Republic of)	OUA-OZZ Denmark
C2A-C2Z Nauru (Republic of)	HNA-HNZ Iraq (Republic of)	PAA-PIZ Netherlands (Kingdom of the)
C3A-C3Z Andorra (Principality of)	HOA-HPZ Panama (Republic of)	PJA-PJZ Netherlands Antilles
C4A-C4Z Cyprus (Republic of)	HQA-HRZ Honduras (Republic of)	PKA-POZ Indonesia (Republic of)
C5A-C5Z Gambia (Republic of the)	HSA-HSZ Thailand	PPA-PYZ Brazil (Federative Republic of)
C6A-C6Z Bahamas (Commonwealth of the)	HTA-HTZ Nicaragua	PZA-PZZ Suriname (Republic of)
C7A-C7Z World Meteorological Organization	HUA-HUZ El Salvador (Republic of)	P2A-P2Z Papua New Guinea
C8A-C9Z Mozambique (Republic of)	HVA-HVZ Vatican City State	P3A-P3Z Cyprus (Republic of)
DAA-DRZ Germany (Federal Republic of)	HWA-HYZ France	P4A-P4Z Netherlands (Kingdom of the) - Aruba
DSA-DTZ Korea (Republic of)	HZA-HZZ Saudi Arabia (Kingdom of)	P5A-P9Z Korea (Democratic People's Republic of)
DUA-DZZ Philippines (Republic of the)	H2A-H2Z Cyprus (Republic of)	RAA-RZZ Russian Federation
D2A-D3Z Angola (Republic of)	H3A-H3Z Panama (Republic of)	SAA-SMZ Sweden
D4A-D4Z Cape Verde (Republic of)	H4A-H4Z Solomon Islands	SNA-SRZ Poland (Republic of)
D5A-D5Z Liberia (Republic of)	H6A-H7Z Nicaragua	SSA-SSM Egypt (Arab Republic of)
D6A-D6Z Comoros (Islamic Federal Republic of the)	H8A-H9Z Panama (Republic of)	SSN-STZ Sudan (Republic of the)
D7A-D9Z Korea (Republic of)	IAA-IZZ Italy	SUA-SUZ Egypt (Arab Republic of)
EAA-EHZ Spain EIA-EJZ Ireland	JAA-JSZ Japan	SVA-SZZ Greece
EKA-EKZ Armenia (Republic of)	JTA-JVZ Mongolia	S2A-S3Z Bangladesh (People's Republic of)
ELA-ELZ Liberia (Republic of)	JWA-JXZ Norway	S5A-S5Z Slovenia (Republic of)
EMA-EOZ Ukraine	JYA-JYZ Jordan (Hashemite Kingdom of)	S6A-S6Z Singapore (Republic of)
EPA-EQZ Iran (Islamic Republic of)	JZA-JZZ Indonesia (Republic of)	S7A-S7Z Seychelles (Republic of)
ERA-ERZ Moldova (Republic of)	J2A-J2Z Djibouti (Republic of)	S8A-S8Z South Africa (Republic of)
		S9A-S9Z Sao Tome and Principe

So now you know *Where* and *When*

Let's see about *What* and *How*?

Nets, Nets, Nets

- Public Service and Mobile...
- Message Traffic...
- Maritime, Safety, Hurricane...
- Ragchew and Roundtable...
- RV and Motorhomes...
- QRP...
- DX...
- YL...
- Regional and ARRL Section...
- Worked All States, Worked All Counties...
- Collins, Heathkit, Swan, Icom...
- Special Interest...

- ARRL Net Search
- <http://www.arrl.org/FandES/field/nets/client/index.html>

Contests, Contests, Contests...

- ARRL Contests
- CQ WAZ Contests
- State QSO Parties
- PSK Contests
- RTTY Contests

The best way to quickly work DX

The best way to quickly verify your station performance

Contests just about every weekend...

Chasing Paper... (Not the Newspaper)

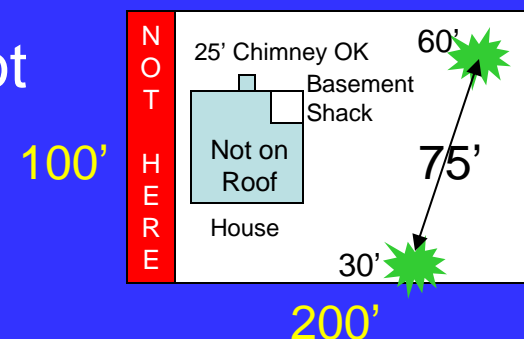
- QSL cards – for fun, stamps, and awards
 - Legacy Postcard – Direct or via Bureaus, IRC
 - eQSL
 - LOTW – ARRL Logbook of the World
- Awards
 - WAS, WAC, DXCC, VUCC, IOTA, Counties...
 - WAZ, WPX...
- Special Events
 - Route 66, Battleships, Lighthouses...
 - Check out listing in QST each month

When in doubt, just get on the air...

- Listen to a band to hear activity
- Find someone calling CQ and answer them
or
- Find an empty place on the band
- Listen for a minute or so
- Ask if the frequency is in use a couple of times
- Call CQ “3 by 2” listen and repeat CQ “3 by 2”
- “3 by 2” is “CQ CQ CQ this is AH6EZ AH6EZ”
- The idea is to attract casual listeners to your CQ and to repeat your call sign. Making your CQ short with time to listen will increase your success. If you make a “10 by 10” CQ listeners will get bored and move on.
- ***Experience the magic of radio...***

How do I get on the air?

- A radio
 - The easy part ranging from free to \$1500+
- An antenna
 - Learn different configurations
 - Find a place to put it
 - Make it efficient
 - Make it spouse/neighbor/association approved
- Personalizing antennas for your station is the subject of the April meeting program.
 - Be prepared with your lot size
 - Heights, positions of trees on your lot
 - Your attic size



73

CUL

(Best Regards, See You Later)

Check out the 8 page tear out section between page 48 and 49 in the March 2007 QST