

FCC Exam Element 3 Question Pool for General Class  
Effective 7/1/2019 – 6/30/2023

**SUBELEMENT G2 – OPERATING PROCEDURES [5 Exam Questions – 5 Groups]**

G2A – Phone operating procedures; USB/LSB conventions; breaking into a contact; VOX operation

G2A01

**Which sideband is most commonly used for voice communications on frequencies of 14 MHz or higher?**

- A. Upper sideband
- B. Lower sideband
- C. Vestigial sideband
- D. Double sideband

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G2A02

**Which of the following modes is most commonly used for voice communications on the 160-meter, 75-meter, and 40-meter bands?**

- A. Upper sideband
- B. Lower sideband
- C. Vestigial sideband
- D. Double sideband

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G2A03

**Which of the following is most commonly used for SSB voice communications in the VHF and UHF bands?**

- A. Upper sideband
- B. Lower sideband
- C. Vestigial sideband
- D. Double sideband

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G2A04 (A)

**Which mode is most commonly used for voice communications on the 17-meter and 12-meter bands?**

- A. Upper sideband
- B. Lower sideband
- C. Vestigial sideband
- D. Double sideband

G2A05

**Which mode of voice communication is most commonly used on the HF amateur bands?**

- A. Frequency modulation
- B. Double sideband
- C. Single sideband
- D. Phase modulation

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G2A06

**Which of the following is an advantage when using single sideband, as compared to other analog voice modes on the HF amateur bands?**

- A. Very high fidelity voice modulation
- B. Less subject to interference from atmospheric static crashes
- C. Ease of tuning on receive and immunity to impulse noise
- D. Less bandwidth used and greater power efficiency

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G2A07

**Which of the following statements is true of the single sideband voice mode?**

- A. Only one sideband and the carrier are transmitted; the other sideband is suppressed
- B. Only one sideband is transmitted; the other sideband and carrier are suppressed
- C. SSB is the only voice mode that is authorized on the 20-meter, 15-meter, and 10-meter amateur bands
- D. SSB is the only voice mode that is authorized on the 160-meter, 75-meter, and 40-meter amateur bands

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G2A08

**What is the recommended way to break in to a phone contact?**

- A. Say "QRZ" several times, followed by your call sign
- B. Say your call sign once
- C. Say "Breaker Breaker"
- D. Say "CQ" followed by the call sign of either station

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G2A09

**Why do most amateur stations use lower sideband on the 160-meter, 75-meter, and 40-meter bands?**

- A. Lower sideband is more efficient than upper sideband at these frequencies
- B. Lower sideband is the only sideband legal on these frequency bands
- C. Because it is fully compatible with an AM detector
- D. It is good amateur practice

G2A10

**Which of the following statements is true of voice VOX operation versus PTT operation?**

- A. The received signal is more natural sounding
- B. It allows “hands free” operation
- C. It occupies less bandwidth
- D. It provides more power output

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G2A11

**Generally, who should respond to a station in the contiguous 48 states who calls “CQ DX”?**

- A. Any caller is welcome to respond
- B. Only stations in Germany
- C. Any stations outside the lower 48 states
- D. Only contest stations

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G2A12

**What control is typically adjusted for proper ALC setting on an amateur single sideband transceiver?**

- A. The RF clipping level
- B. Transmit audio or microphone gain
- C. Antenna inductance or capacitance
- D. Attenuator level

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G2B – Operating courtesy; band plans; emergencies, including drills and emergency communications

G2B01 [97.101(b), (c)]

**Which of the following is true concerning access to frequencies?**

- A. Nets always have priority
- B. QSOs in progress always have priority
- C. Except during emergencies, no amateur station has priority access to any frequency
- D. Contest operations must always yield to non-contest use of frequencies

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G2B02

**What is the first thing you should do if you are communicating with another amateur station and hear a station in distress break in?**

- A. Continue your communication because you were on the frequency first
- B. Acknowledge the station in distress and determine what assistance may be needed
- C. Change to a different frequency
- D. Immediately cease all transmissions

G2B03

**What is good amateur practice if propagation changes during a contact and you notice interference from other stations on the frequency?**

- A. Tell the interfering stations to change frequency
- B. Report the interference to your local Amateur Auxiliary Coordinator
- C. Attempt to resolve the interference problem with the other stations in a mutually acceptable manner
- D. Increase power to overcome interference

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G2B04

**When selecting a CW transmitting frequency, what minimum separation should be used to minimize interference to stations on adjacent frequencies?**

- A. 5 to 50 Hz
- B. 150 to 500 Hz
- C. 1 to 3 kHz
- D. 3 to 6 kHz

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G2B05

**When selecting an SSB transmitting frequency, what minimum separation should be used to minimize interference to stations on adjacent frequencies?**

- A. 5 to 50 Hz
- B. 150 to 500 Hz
- C. Approximately 3 kHz
- D. Approximately 6 kHz

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G2B06

**What is a practical way to avoid harmful interference on an apparently clear frequency before calling CQ on CW or phone?**

- A. Send "QRL?" on CW, followed by your call sign; or, if using phone, ask if the frequency is in use, followed by your call sign
- B. Listen for 2 minutes before calling CQ
- C. Send the letter "V" in Morse code several times and listen for a response, or say "test" several times and listen for a response
- D. Send "QSY" on CW or if using phone, announce "the frequency is in use," then give your call sign and listen for a response

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G2B07

**Which of the following complies with good amateur practice when choosing a frequency on which to initiate a call?**

- A. Check to see if the channel is assigned to another station
- B. Identify your station by transmitting your call sign at least 3 times
- C. Follow the voluntary band plan for the operating mode you intend to use
- D. All these choices are correct

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G2B08

**What is the voluntary band plan restriction for U.S. stations transmitting within the 48 contiguous states in the 50.1 to 50.125 MHz band segment?**

- A. Only contacts with stations not within the 48 contiguous states
- B. Only contacts with other stations within the 48 contiguous states
- C. Only digital contacts
- D. Only SSTV contacts

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G2B09 [97.407(a)]

**Who may be the control operator of an amateur station transmitting in RACES to assist relief operations during a disaster?**

- A. Only a person holding an FCC-issued amateur operator license
- B. Only a RACES net control operator
- C. A person holding an FCC-issued amateur operator license or an appropriate government official
- D. Any control operator when normal communication systems are operational

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G2B10 [97.405(b)]

**When is an amateur station allowed to use any means at its disposal to assist another station in distress?**

- A. Only when transmitting in RACES
- B. At any time when transmitting in an organized net
- C. At any time during an actual emergency
- D. Only on authorized HF frequencies

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G2B11 [97.405]

**What frequency should be used to send a distress call?**

- A. Whichever frequency has the best chance of communicating the distress message
- B. Only frequencies authorized for RACES or ARES stations
- C. Only frequencies that are within your operating privileges
- D. Only frequencies used by police, fire, or emergency medical services

G2C – CW operating procedures and procedural signals; Q signals and common abbreviations: full break-in

G2C01

**Which of the following describes full break-in telegraphy (QSK)?**

- A. Breaking stations send the Morse code prosign “BK”
- B. Automatic keyers, instead of hand keys, are used to send Morse code
- C. An operator must activate a manual send/receive switch before and after every transmission
- D. Transmitting stations can receive between code characters and elements

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G2C02

**What should you do if a CW station sends “QRS?”**

- A. Send slower
- B. Change frequency
- C. Increase your power
- D. Repeat everything twice

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G2C03

**What does it mean when a CW operator sends “KN” at the end of a transmission?**

- A. Listening for novice stations
- B. Operating full break-in
- C. Listening only for a specific station or stations
- D. Closing station now

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G2C04

**What does the Q signal “QRL?” mean?**

- A. “Will you keep the frequency clear?”
- B. “Are you operating full break-in?” or “Can you operate full break-in?”
- C. “Are you listening only for a specific station?”
- D. “Are you busy?” or “Is this frequency in use?”

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G2C05

**What is the best speed to use when answering a CQ in Morse code?**

- A. The fastest speed at which you are comfortable copying, but no slower than the CQ
- B. The fastest speed at which you are comfortable copying, but no faster than the CQ
- C. At the standard calling speed of 10 wpm
- D. At the standard calling speed of 5 wpm

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G2C06

**What does the term “zero beat” mean in CW operation?**

- A. Matching the speed of the transmitting station
- B. Operating split to avoid interference on frequency
- C. Sending without error
- D. Matching the transmit frequency to the frequency of a received signal

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G2C07

**When sending CW, what does a “C” mean when added to the RST report?**

- A. Chirpy or unstable signal
- B. Report was read from an S meter rather than estimated
- C. 100 percent copy
- D. Key clicks

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G2C08

**What prosign is sent to indicate the end of a formal message when using CW?**

- A. SK
- B. BK
- C. AR
- D. KN

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G2C09

**What does the Q signal “QSL” mean?**

- A. Send slower
- B. We have already confirmed by card
- C. I acknowledge receipt
- D. We have worked before

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G2C10

**What does the Q signal “QRN” mean?**

- A. Send more slowly
- B. Stop sending
- C. Zero beat my signal
- D. I am troubled by static

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G2C11

**What does the Q signal “QRV” mean?**

- A. You are sending too fast
- B. There is interference on the frequency
- C. I am quitting for the day
- D. I am ready to receive messages

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G2D – Volunteer Monitoring Program; HF operations

G2D01

**What is the Volunteer Monitoring Program?**

- A. Amateur volunteers who are formally enlisted to monitor the airwaves for rules violations
- B. Amateur volunteers who conduct amateur licensing examinations
- C. Amateur volunteers who conduct frequency coordination for amateur VHF repeaters
- D. Amateur volunteers who use their station equipment to help civil defense organizations in times of emergency

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G2D02

**Which of the following are objectives of the Volunteer Monitoring Program?**

- A. To conduct efficient and orderly amateur licensing examinations
- B. To encourage amateur radio operators to self-regulate and comply with the rules
- C. To coordinate repeaters for efficient and orderly spectrum usage
- D. To provide emergency and public safety communications

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G2D03

**What skills learned during hidden transmitter hunts are of help to the Volunteer Monitoring Program?**

- A. Identification of out-of-band operation
- B. Direction finding used to locate stations violating FCC rules
- C. Identification of different call signs
- D. Hunters have an opportunity to transmit on non-amateur frequencies

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G2D04

**Which of the following describes an azimuthal projection map?**

- A. A map that shows accurate land masses
- B. A map that shows true bearings and distances from a particular location
- C. A map that shows the angle at which an amateur satellite crosses the equator
- D. A map that shows the number of degrees longitude that an amateur satellite appears to move westward at the equator with each orbit

G2D05

**Which of the following is a good way to indicate on a clear frequency in the HF phone bands that you are looking for a contact with any station?**

- A. Sign your call sign once, followed by the words "listening for a call" -- if no answer, change frequency and repeat
- B. Say "QTC" followed by "this is" and your call sign -- if no answer, change frequency and repeat
- C. Repeat "CQ" a few times, followed by "this is," then your call sign a few times, then pause to listen, repeat as necessary
- D. Transmit an unmodulated carrier for approximately 10 seconds, followed by "this is" and your call sign, and pause to listen -- repeat as necessary

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G2D06

**How is a directional antenna pointed when making a "long-path" contact with another station?**

- A. Toward the rising sun
- B. Along the grayline
- C. 180 degrees from the station's short-path heading
- D. Toward the north

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G2D07

**Which of the following are examples of the NATO Phonetic Alphabet?**

- A. Able, Baker, Charlie, Dog
- B. Adam, Boy, Charles, David
- C. America, Boston, Canada, Denmark
- D. Alpha, Bravo, Charlie, Delta

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G2D08

**What is a reason why many amateurs keep a station log?**

- A. The ITU requires a log of all international contacts
- B. The ITU requires a log of all international third-party traffic
- C. The log provides evidence of operation needed to renew a license without retest
- D. To help with a reply if the FCC requests information

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G2D09

**Which of the following is required when participating in a contest on HF frequencies?**

- A. Submit a log to the contest sponsor
- B. Send a QSL card to the stations worked, or QSL via Logbook of The World
- C. Identify your station per normal FCC regulations
- D. All these choices are correct

G2D10

**What is QRP operation?**

- A. Remote piloted model control
- B. Low-power transmit operation
- C. Transmission using Quick Response Protocol
- D. Traffic relay procedure net operation

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G2D11

**Which of the following is typical of the lower HF frequencies during the summer?**

- A. Poor propagation at any time of day
- B. World-wide propagation during the daylight hours
- C. Heavy distortion on signals due to photon absorption
- D. High levels of atmospheric noise or "static"

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G2E – Digital operating procedures

G2E01

**Which mode is normally used when sending RTTY signals via AFSK with an SSB transmitter?**

- A. USB
- B. DSB
- C. CW
- D. LSB

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G2E02

**How can a PACTOR modem or controller be used to determine if the channel is in use by other PACTOR stations?**

- A. Unplug the data connector temporarily and see if the channel-busy indication is turned off
- B. Put the modem or controller in a mode which allows monitoring communications without a connection
- C. Transmit UI packets several times and wait to see if there is a response from another PACTOR station
- D. Send the message, "Is this frequency in use?"

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G2E03

**What symptoms may result from other signals interfering with a PACTOR or WINMOR transmission?**

- A. Frequent retries or timeouts
- B. Long pauses in message transmission
- C. Failure to establish a connection between stations
- D. All these choices are correct

G2E04

**What segment of the 20-meter band is most often used for digital transmissions (avoiding the DX propagation beacons)?**

- A. 14.000 - 14.050 MHz
- B. 14.070 - 14.112 MHz**
- C. 14.150 - 14.225 MHz
- D. 14.275 - 14.350 MHz

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G2E05

**What is the standard sideband used to generate a JT65, JT9, or FT8 digital signal when using AFSK in any amateur band?**

- A. LSB
- B. USB**
- C. DSB
- D. SSB

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G2E06

**What is the most common frequency shift for RTTY emissions in the amateur HF bands?**

- A. 85 Hz
- B. 170 Hz**
- C. 425 Hz
- D. 850 Hz

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G2E07

**What segment of the 80-meter band is most commonly used for digital transmissions?**

- A. 3570 – 3600 kHz**
- B. 3500 – 3525 kHz
- C. 3700 – 3750 kHz
- D. 3775 – 3825 kHz

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G2E08

**In what segment of the 20-meter band are most PSK31 operations commonly found?**

- A. At the bottom of the slow-scan TV segment, near 14.230 MHz
- B. At the top of the SSB phone segment, near 14.325 MHz
- C. In the middle of the CW segment, near 14.100 MHz
- D. Below the RTTY segment, near 14.070 MHz**

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G2E09

**How do you join a contact between two stations using the PACTOR protocol?**

- A. Send broadcast packets containing your call sign while in MONITOR mode
- B. Transmit a steady carrier until the PACTOR protocol times out and disconnects
- C. Joining an existing contact is not possible, PACTOR connections are limited to two stations
- D. Send a NAK response continuously so that the sending station must stand by

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G2E10

**Which of the following is a way to establish contact with a digital messaging system gateway station?**

- A. Send an email to the system control operator
- B. Send QRL in Morse code
- C. Respond when the station broadcasts its SSID
- D. Transmit a connect message on the station's published frequency

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G2E11

**Which of the following is characteristic of the FT8 mode of the WSJT-X family?**

- A. It is a keyboard-to-keyboard chat mode
- B. Each transmission takes exactly 60 seconds
- C. It is limited to use on VHF
- D. Typical exchanges are limited to call signs, grid locators, and signal reports

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G2E12

**Which of the following connectors would be a good choice for a serial data port?**

- A. PL-259
- B. Type N
- C. Type SMA
- D. DE-9

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G2E13

**Which communication system sometimes uses the internet to transfer messages?**

- A. Winlink
- B. RTTY
- C. ARES
- D. SKYWARN

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G2E14

**What could be wrong if you cannot decode an RTTY or other FSK signal even though it is apparently tuned in properly?**

- A. The mark and space frequencies may be reversed
- B. You may have selected the wrong baud rate
- C. You may be listening on the wrong sideband
- D. All these choices are correct**

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G2E15

**Which of the following is a requirement when using the FT8 digital mode?**

- A. A special hardware modem
- B. Computer time accurate within approximately 1 second**
- C. Receiver attenuator set to -12 dB
- D. A vertically polarized antenna

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