

Subelement G2 - Operating Procedures

Group G2A - - Phone operating procedures: USB/LSB conventions, breaking into a contact, transmitter setup for voice operation; answering DX stations

G2A01 (A)

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

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

G2A02 (B)

Which mode is most commonly used for voice communications on the 160-, 75-, and 40-meter bands?

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

G2A03 (A)

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

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

G2A04 (A)

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

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

G2A05 (C)

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

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

G2A06 (D)

Which of the following is an advantage of 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

G2A07 (B)

Which of the following statements is true of single sideband (SSB)?

- 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 authorized on the 20-, 15-, and 10-meter amateur bands
- D. SSB is the only voice mode authorized on the 160-, 75-, and 40-meter amateur bands

G2A08 (B)

What is the recommended way to break into 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

G2A09 (D)

Why do most amateur stations use lower sideband on the 160-, 75-, 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 commonly accepted amateur practice

G2A10 (B)

Which of the following statements is true of 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

G2A11 (C)

Generally, who should respond to a station in the contiguous 48 states calling "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

G2A12 (B)

What control is typically adjusted for proper ALC setting on a single sideband transceiver?

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

Group G2B - - Operating effectively; band plans; drills and emergencies; RACES operation

G2B01 (C)

Which of the following is true concerning access to frequencies?

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

G2B02 (B)

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. Inform your local emergency coordinator
- B. Acknowledge the station in distress and determine what assistance may be needed
- C. Immediately decrease power to avoid interfering with the station in distress
- D. Immediately cease all transmissions

G2B03 (C)

What is good amateur practice if propagation changes during a contact creating interference from other stations using the frequency?

- A. Advise the interfering stations that you are on the frequency and that you have priority
- B. Decrease power and continue to transmit
- C. Attempt to resolve the interference problem with the other stations in a mutually acceptable manner
- D. Switch to the opposite sideband

G2B04 (B)

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

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

G2B05 (C)

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

- A. 5 Hz to 50 Hz
- B. 150 Hz to 500 Hz
- C. 2 kHz to 3 kHz
- D. Approximately 6 kHz

G2B06 (A)

How can you 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

G2B07 (C)

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

- A. Listen on the frequency for at least two minutes to be sure it is clear
- B. Identify your station by transmitting your call sign at least 3 times
- C. Follow the voluntary band plan
- D. All these choices are correct

G2B08 (A)

What is the voluntary band plan restriction for US stations transmitting within the 48 contiguous states in the 50.1 MHz 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

G2B09 (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

G2B10 (B)

Which of the following is good amateur practice for net management?

- A. Always use multiple sets of phonetics during check-in
- B. Have a backup frequency in case of interference or poor conditions
- C. Transmit the full net roster at the beginning of every session
- D. All these choices are correct

G2B11 (C)

How often may RACES training drills and tests be routinely conducted without special authorization?

- A. No more than 1 hour per month
- B. No more than 2 hours per month
- C. No more than 1 hour per week
- D. No more than 2 hours per week

Group G2C - - CW operating procedures and procedural signals; Q signals; full break-in

G2C01 (D)

Which of the following describes full break-in CW operation (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

G2C02 (A)

What should you do if a CW station sends "QRS?"

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

G2C03 (C)

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

- A. No US stations should call
- B. Operating full break-in
- C. Listening only for a specific station or stations
- D. Closing station now

G2C04 (D)

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?"

G2C05 (B)

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

G2C06 (D)

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

G2C07 (A)

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

G2C08 (C)

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

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

G2C09 (C)

What does the Q signal "QSL" mean?

- A. Send slower
- B. We have already confirmed the contact
- C. I have received and understood
- D. We have worked before

G2C10 (D)

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

G2C11 (D)

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

Group G2D - - Volunteer Monitor Program; HF operations

G2D01 (A)

What is the Volunteer Monitor 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

G2D02 (D)

Which of the following are objectives of the Volunteer Monitor Program?

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

G2D03 (B)

What procedure may be used by Volunteer Monitors to localize a station whose continuous carrier is holding a repeater on in their area?

- A. Compare vertical and horizontal signal strengths on the input frequency
- B. Compare beam headings on the repeater input from their home locations with that of other Volunteer Monitors
- C. Compare signal strengths between the input and output of the repeater
- D. All these choices are correct

G2D04 (B)

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 specific 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 (C)

Which of the following indicates that you are looking for an HF 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

G2D06 (C)

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

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

G2D07 (D)

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

G2D08 (D)

Why do many amateurs keep a station log?

- A. The FCC requires a log of all international contacts
- B. The FCC 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 about your station

G2D09 (C)

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 according to normal FCC regulations
- D. All these choices are correct

G2D10 (B)

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

G2D11 (A)

Why are signal reports typically exchanged at the beginning of an HF contact?

- A. To allow each station to operate according to conditions
- B. To be sure the contact will count for award programs
- C. To follow standard radiogram structure
- D. To allow each station to calibrate their frequency display

Group G2E - - Digital mode operating procedures

G2E01 (D)

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

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

G2E02 (B)

What is VARA?

- A. A low signal-to-noise digital mode used for EME (moonbounce)
- B. A digital protocol used with Winlink
- C. A radio direction finding system used on VHF and UHF
- D. A DX spotting system using a network of software defined radios

G2E03 (D)

What symptoms may result from other signals interfering with a PACTOR or VARA 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 (D)

Which of the following is good practice when choosing a transmitting frequency to answer a station calling CQ using FT8?

- A. Always call on the station's frequency
- B. Call on any frequency in the waterfall except the station's frequency
- C. Find a clear frequency during the same time slot as the calling station
- D. Find a clear frequency during the alternate time slot to the calling station

G2E05 (B)

What is the standard sideband for JT65, JT9, FT4, or FT8 digital signal when using AFSK?

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

G2E06 (B)

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

G2E07 (B)

Which of the following is required when using FT8?

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

G2E08 (D)

In what segment of the 20-meter band are most digital mode 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. Between 14.070 MHz and 14.100 MHz

G2E09 (C)

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 code

G2E10 (D)

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

G2E11 (C)

What is the primary purpose of an Amateur Radio Emergency Data Network (AREDN) mesh network?

- A. To provide FM repeater coverage in remote areas
- B. To provide real time propagation data by monitoring amateur radio transmissions worldwide
- C. To provide high-speed data services during an emergency or community event
- D. To provide DX spotting reports to aid contesters and DXers

G2E12 (D)

Which of the following describes Winlink?

- A. An amateur radio wireless network to send and receive email on the internet
- B. A form of Packet Radio
- C. A wireless network capable of both VHF and HF band operation
- D. All of the above

G2E13 (B)

What is another name for a Winlink Remote Message Server?

- A. Terminal Node Controller
- B. Gateway
- C. RJ-45
- D. Printer/Server

G2E14 (D)

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

G2E15 (C)

Which of the following is a common location for FT8?

- A. Anywhere in the voice portion of the band
- B. Anywhere in the CW portion of the band
- C. Approximately 14.074 MHz to 14.077 MHz
- D. Approximately 14.110 MHz to 14.113 MHz

Subelement G3 - Radio Wave Propagation

Group G3A - - Sunspots and solar radiation; geomagnetic field and stability indices

G3A01 (A)

How does a higher sunspot number affect HF propagation?

- A. Higher sunspot numbers generally indicate a greater probability of good propagation at higher frequencies
- B. Lower sunspot numbers generally indicate greater probability of sporadic E propagation
- C. A zero sunspot number indicates that radio propagation is not possible on any band
- D. A zero sunspot number indicates undisturbed conditions

G3A02 (B)

What effect does a sudden ionospheric disturbance have on the daytime ionospheric propagation?

- A. It enhances propagation on all HF frequencies
- B. It disrupts signals on lower frequencies more than those on higher frequencies
- C. It disrupts communications via satellite more than direct communications
- D. None, because only areas on the night side of the Earth are affected

G3A03 (C)

Approximately how long does it take the increased ultraviolet and X-ray radiation from a solar flare to affect radio propagation on Earth?

- A. 28 days
- B. 1 to 2 hours
- C. 8 minutes
- D. 20 to 40 hours

G3A04 (D)

Which of the following are the least reliable bands for long-distance communications during periods of low solar activity?

- A. 80 meters and 160 meters
- B. 60 meters and 40 meters
- C. 30 meters and 20 meters
- D. 15 meters, 12 meters, and 10 meters

G3A05 (D)

What is the solar flux index?

- A. A measure of the highest frequency that is useful for ionospheric propagation between two points on Earth
- B. A count of sunspots that is adjusted for solar emissions
- C. Another name for the American sunspot number
- D. A measure of solar radiation with a wavelength of 10.7 centimeters

G3A06 (D)

What is a geomagnetic storm?

- A. A sudden drop in the solar flux index
- B. A thunderstorm that affects radio propagation
- C. Ripples in the geomagnetic force
- D. A temporary disturbance in Earth's geomagnetic field

G3A07 (D)

At what point in the solar cycle does the 20-meter band usually support worldwide propagation during daylight hours?

- A. At the summer solstice
- B. Only at the maximum point
- C. Only at the minimum point
- D. At any point

G3A08 (D)

How can a geomagnetic storm affect HF propagation?

- A. Improve high-latitude HF propagation
- B. Degrade ground wave propagation
- C. Improve ground wave propagation
- D. Degrade high-latitude HF propagation

G3A09 (A)

How can high geomagnetic activity benefit radio communications?

- A. Creates auroras that can reflect VHF signals
- B. Increases signal strength for HF signals passing through the polar regions
- C. Improve HF long path propagation
- D. Reduce long delayed echoes

G3A10 (C)

What causes HF propagation conditions to vary periodically in a 26- to 28-day cycle?

- A. Long term oscillations in the upper atmosphere
- B. Cyclic variation in Earth's radiation belts
- C. Rotation of the Sun's surface layers around its axis
- D. The position of the Moon in its orbit

G3A11 (D)

How long does it take a coronal mass ejection to affect radio propagation on Earth?

- A. 28 days
- B. 14 days
- C. 4 to 8 minutes
- D. 15 hours to several days

G3A12 (B)

What does the K-index measure?

- A. The relative position of sunspots on the surface of the Sun
- B. The short-term stability of Earth's geomagnetic field
- C. The short-term stability of the Sun's magnetic field
- D. The solar radio flux at Boulder, Colorado

G3A13 (C)

What does the A-index measure?

- A. The relative position of sunspots on the surface of the Sun
- B. The amount of polarization of the Sun's electric field
- C. The long-term stability of Earth's geomagnetic field
- D. The solar radio flux at Boulder, Colorado

G3A14 (B)

How is long distance radio communication usually affected by the charged particles that reach Earth from solar coronal holes?

- A. HF communication is improved
- B. HF communication is disturbed
- C. VHF/UHF ducting is improved
- D. VHF/UHF ducting is disturbed

Group G3B - - Maximum Usable Frequency; Lowest Usable Frequency; short path and long path propagation; determining propagation conditions; ionospheric refraction

G3B01 (D)

What is a characteristic of skywave signals arriving at your location by both short-path and long-path propagation?

- A. Periodic fading approximately every 10 seconds
- B. Signal strength increased by 3 dB
- C. The signal might be cancelled causing severe attenuation
- D. A slightly delayed echo might be heard

G3B02 (D)

What factors affect the MUF?

- A. Path distance and location
- B. Time of day and season
- C. Solar radiation and ionospheric disturbances
- D. All these choices are correct

G3B03 (A)

Which frequency will have the least attenuation for long-distance skip propagation?

- A. Just below the MUF
- B. Just above the LUF
- C. Just below the critical frequency
- D. Just above the critical frequency

G3B04 (A)

Which of the following is a way to determine current propagation on a desired band from your station?

- A. Use a network of automated receiving stations on the internet to see where your transmissions are being received
- B. Check the A-index
- C. Send a series of dots and listen for echoes
- D. All these choices are correct

G3B05 (A)

How does the ionosphere affect radio waves with frequencies below the MUF and above the LUF?

- A. They are refracted back to Earth
- B. They pass through the ionosphere
- C. They are amplified by interaction with the ionosphere
- D. They are refracted and trapped in the ionosphere to circle Earth

G3B06 (C)

What usually happens to radio waves with frequencies below the LUF?

- A. They are refracted back to Earth
- B. They pass through the ionosphere
- C. They are attenuated before reaching the destination
- D. They are refracted and trapped in the ionosphere to circle Earth

G3B07 (A)

What does LUF stand for?

- A. The Lowest Usable Frequency for communications between two specific points
- B. Lowest Usable Frequency for communications to any point outside a 100-mile radius
- C. The Lowest Usable Frequency during a 24-hour period
- D. Lowest Usable Frequency during the past 60 minutes

G3B08 (B)

What does MUF stand for?

- A. The Minimum Usable Frequency for communications between two points
- B. The Maximum Usable Frequency for communications between two points
- C. The Minimum Usable Frequency during a 24-hour period
- D. The Maximum Usable Frequency during a 24-hour period

G3B09 (C)

What is the approximate maximum distance along the Earth's surface normally covered in one hop using the F2 region?

- A. 180 miles
- B. 1,200 miles
- C. 2,500 miles
- D. 12,000 miles

G3B10 (B)

What is the approximate maximum distance along the Earth's surface normally covered in one hop using the E region?

- A. 180 miles
- B. 1,200 miles
- C. 2,500 miles
- D. 12,000 miles

G3B11 (A)

What happens to HF propagation when the LUF exceeds the MUF?

- A. Propagation via ordinary skywave communications is not possible over that path
- B. HF communications over the path are enhanced
- C. Double-hop propagation along the path is more common
- D. Propagation over the path on all HF frequencies is enhanced

G3B12 (D)

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 daylight hours
- C. Heavy distortion on signals due to photon absorption
- D. High levels of atmospheric noise or static

Group G3C - - Ionospheric regions; critical angle and frequency; HF scatter; near vertical incidence skywave (NVIS)

G3C01 (A)

Which ionospheric region is closest to the surface of Earth?

- A. The D region
- B. The E region
- C. The F1 region
- D. The F2 region

G3C02 (A)

What is meant by the term "critical frequency" at a given incidence angle?

- A. The highest frequency which is refracted back to Earth
- B. The lowest frequency which is refracted back to Earth
- C. The frequency at which the signal-to-noise ratio approaches unity
- D. The frequency at which the signal-to-noise ratio is 6 dB

G3C03 (C)

Why is skip propagation via the F2 region longer than that via the other ionospheric regions?

- A. Because it is the densest
- B. Because of the Doppler effect
- C. Because it is the highest
- D. Because of temperature inversions

G3C04 (D)

What does the term "critical angle" mean, as applied to radio wave propagation?

- A. The long path azimuth of a distant station
- B. The short path azimuth of a distant station
- C. The lowest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions
- D. The highest takeoff angle that will return a radio wave to Earth under specific ionospheric conditions

G3C05 (C)

Why is long-distance communication on the 40-, 60-, 80-, and 160-meter bands more difficult during the day?

- A. The F region absorbs signals at these frequencies during daylight hours
- B. The F region is unstable during daylight hours
- C. The D region absorbs signals at these frequencies during daylight hours
- D. The E region is unstable during daylight hours

G3C06 (B)

What is a characteristic of HF scatter?

- A. Phone signals have high intelligibility
- B. Signals have a fluttering sound
- C. There are very large, sudden swings in signal strength
- D. Scatter propagation occurs only at night

G3C07 (D)

What makes HF scatter signals often sound distorted?

- A. The ionospheric region involved is unstable
- B. Ground waves are absorbing much of the signal
- C. The E region is not present
- D. Energy is scattered into the skip zone through several different paths

G3C08 (A)

Why are HF scatter signals in the skip zone usually weak?

- A. Only a small part of the signal energy is scattered into the skip zone
- B. Signals are scattered from the magnetosphere, which is not a good reflector
- C. Propagation is via ground waves, which absorb most of the signal energy
- D. Propagation is via ducts in the F region, which absorb most of the energy

G3C09 (B)

What type of propagation allows signals to be heard in the transmitting station's skip zone?

- A. Faraday rotation
- B. Scatter
- C. Chordal hop
- D. Short-path

G3C10 (B)

What is near vertical incidence skywave (NVIS) propagation?

- A. Propagation near the MUF
- B. Short distance MF or HF propagation at high elevation angles
- C. Long path HF propagation at sunrise and sunset
- D. Double hop propagation near the LUF

G3C11 (D)

Which ionospheric region is the most absorptive of signals below 10 MHz during daylight hours?

- A. The F2 region
- B. The F1 region
- C. The E region
- D. The D region