

Section 3.3

G2D11 (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 the daylight hours
- C. Heavy distortion on signals due to photon absorption
- D. High levels of atmospheric noise or “static”

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G3A02 (B)

What effect does a Sudden Ionospheric Disturbance have on the daytime ionospheric propagation of HF radio waves?

- 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

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G3A04 (D)

Which of the following are least reliable 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

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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 of the solar cycle
- C. Only at the minimum point of the solar cycle
- D. At any point in the solar cycle

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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

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G3B03 (A)

Which of the following applies when selecting a frequency for lowest attenuation when transmitting on HF?

- A. Select a frequency just below the MUF
- B. Select a frequency just above the LUF
- C. Select a frequency just below the critical frequency
- D. Select a frequency just above the critical frequency

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G3B04 (A)

What is a reliable way to determine if the MUF is high enough to support skip propagation between your station and a distant location on frequencies between 14 and 30 MHz?

- A. Listen for signals from an international beacon in the frequency range you plan to use
- B. Send a series of dots on the band and listen for echoes from your signal
- C. Check the strength of TV signals from western Europe
- D. Check the strength of signals in the MF AM broadcast band

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G3B09 (C)

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

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

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G3B10 (B)

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

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

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G3C05 (C)

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

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

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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

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G3C07 (D)

What makes HF scatter signals often sound distorted?

- A. The ionospheric layer 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 radio wave paths

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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 through ground waves, which absorb most of the signal energy
- D. Propagation is through ducts in F region, which absorb most of the energy

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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

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G3C10 (B)

What is Near Vertical Incidence Skywave (NVIS) propagation?

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

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