

## Chapter 3.0 Propagation

### Section 3.3 Operational Impacts

G3A02 (B) p.83

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

G3A04 (D) p.83

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

G3A07 (D) p.77

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

G3B01 (D) p.81

How might a sky-wave signal sound if it arrives at your receiver 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 well-defined echo might be heard

G3B02 (A) p.80

Which of the following is a good indicator of the possibility of sky-wave propagation on the 6-meter band?

- A. Short skip sky-wave propagation on the 10-meter band
- B. Long skip sky-wave propagation on the 10-meter band
- C. Severe attenuation of signals on the 10-meter band
- D. Long delayed echoes on the 10-meter band

G3B03 (A) p.84

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

G3B04 (A) p.84

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

G3B09 (C) p.79

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

G3B10 (B) p.80

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

G3C05 (C) p.83

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

G3C06 (B) p.83

What is a characteristic of HF scatter signals?

- A. They have high intelligibility
- B. They have a wavering sound
- C. They have very large swings in signal strength
- D. All of these choices are correct

G3C07 (D) p.83

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

G3C08 (A) p.82

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

G3C09 (B) p.82

What type of radio wave propagation allows a signal to be detected at a distance too far for ground wave propagation but too near for normal sky-wave propagation?

- A. Faraday rotation
- B. Scatter
- C. Sporadic-E skip
- D. Short-path skip

G3C10 (D) p.82

Which of the following might be an indication that signals heard on the HF bands are being received via scatter propagation?

- A. The communication is during a sunspot maximum
- B. The communication is during a sudden ionospheric disturbance
- C. The signal is heard on a frequency below the Maximum Usable Frequency
- D. The signal is heard on a frequency above the Maximum Usable Frequency

G3C13 (B) p.81

What is Near Vertical Incidence Sky-wave (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