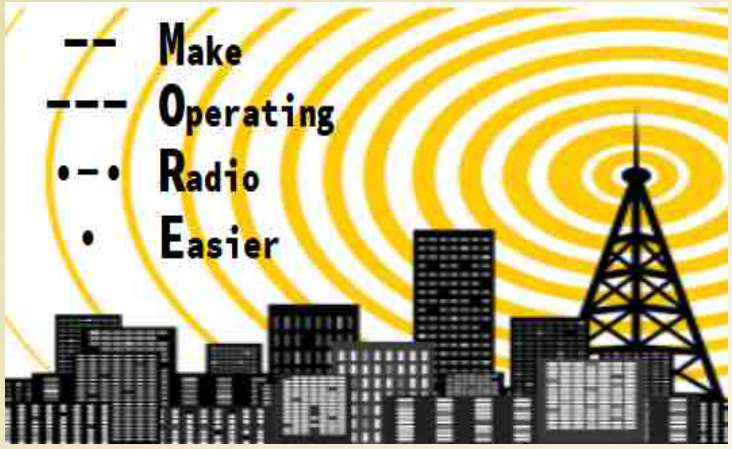
Technician Question Pool
July 2022 to June 2026

The MORE Project

http://n2re.org/m-o-r-e-project



Radio Wave Characteristics
No-Nonsense pages 48 - 49

HF Propagation

For reliable long-distance communications, amateurs use the HF frequencies. This is because HF signals bounce off of the ionosphere. This phenomenon allows amateur radio operators to contact other amateur radio stations around the world.

T3A11

Which region of the atmosphere can refract or bend HF and VHF radio waves?

A. The stratosphere
B. The troposphere
C. The ionosphere
D. The mesosphere

T3A11

Which region of the atmosphere can refract or bend HF and VHF radio waves?

A. The stratosphere
B. The troposphere
C. The ionosphere
D. The mesosphere

T3C02

What is a characteristic of HF communication compared with communications on VHF and higher frequencies?

A. HF antennas are generally smaller
B. HF accommodates wider bandwidth signals
C. Long distance ionospheric propagation is far more common on HF
D. There is less atmospheric interference (static) on HF

T3C02

What is a characteristic of HF communication compared with communications on VHF and higher frequencies?

A. HF antennas are generally smaller
B. HF accommodates wider bandwidth signals
C. Long distance ionospheric propagation is far more common on HF
D. There is less atmospheric interference (static) on HF

T3C10

Which of the following bands may provide long-distance communications via the ionosphere's F region during the peak of the sunspot cycle?

A. 6 or 10 meters
B. 23 centimeters
C. 70 centimeters and 1.25 meters
D. All of these choices are correct

T3C10

Which of the following bands may provide long-distance communications via the ionosphere's F region during the peak of the sunspot cycle?

A. 6 or 10 meters
B. 23 centimeters
C. 70 centimeters and 1.25 meters
D. All of these choices are correct

T3C09

What is generally the best time for long-distance 10 meter band propagation via the F region?

A. From dawn to shortly after sunset during periods of high sunspot activity
B. From shortly after sunset to dawn during periods of high sunspot activity
C. From dawn to shortly after sunset during periods of low sunspot activity
D. From shortly after sunset to dawn during periods of low sunspot activity

T3C09

What is generally the best time for long-distance 10 meter band propagation via the F region?

A. From dawn to shortly after sunset during periods of high sunspot activity
B. From shortly after sunset to dawn during periods of high sunspot activity
C. From dawn to shortly after sunset during periods of low sunspot activity
D. From shortly after sunset to dawn during periods of low sunspot activity

T3A08

What is a likely cause of irregular fading of signals propagated by the ionosphere?

A. Frequency shift due to Faraday rotation
B. Interference from thunderstorms
C. Intermodulation distortion
D. Random combining of signals arriving via different paths

T3A08

What is a likely cause of irregular fading of signals propagated by the ionosphere?

A. Frequency shift due to Faraday rotation
B. Interference from thunderstorms
C. Intermodulation distortion
D. Random combining of signals arriving via different paths

T3A09

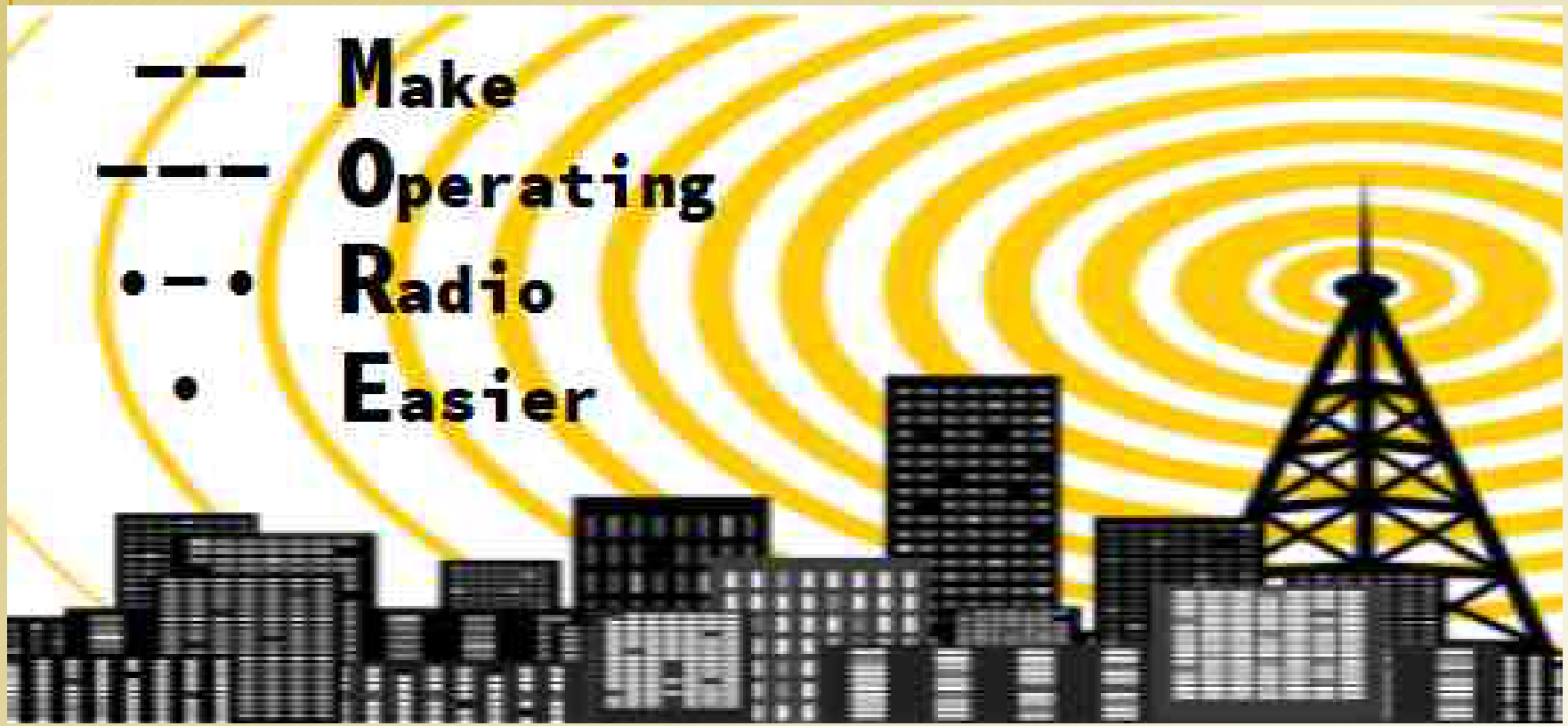
Which of the following results from the fact that signals propagated by the ionosphere are elliptically polarized?

A. Digital modes are unusable
B. Either vertically or horizontally polarized antennas may be used for transmission or reception
C. FM voice is unusable
D. Both the transmitting and receiving antennas must be of the same polarization

T3A09

Which of the following results from the fact that signals propagated by the ionosphere are elliptically polarized?

A. Digital modes are unusable
B. Either vertically or horizontally polarized antennas may be used for transmission or reception
C. FM voice is unusable
D. Both the transmitting and receiving antennas must be of the same polarization



A non-profit initiative by the IEEE and ARDC to increase the numbers of youth (12-18) and non-males in Amateur Radio. Participants earn FCC licenses and receive free 2-way radios.

For MORE information: n2re.org/m-o-r-e-project
Dr. Rebecca Mercuri, Grant Administrator, rtmercuri@ieee.org