Tuner's Topics

Editor's Note: This is the first in a series of "topics" that SP4 Tuner Tropo will explain. The subject areas, although often complex, will be simply explained in the hope of broadening the C-E experience for non-technical members of the Signal Corps.

The Tropospheric Scatter System

by
SP4 Tuner Tropo

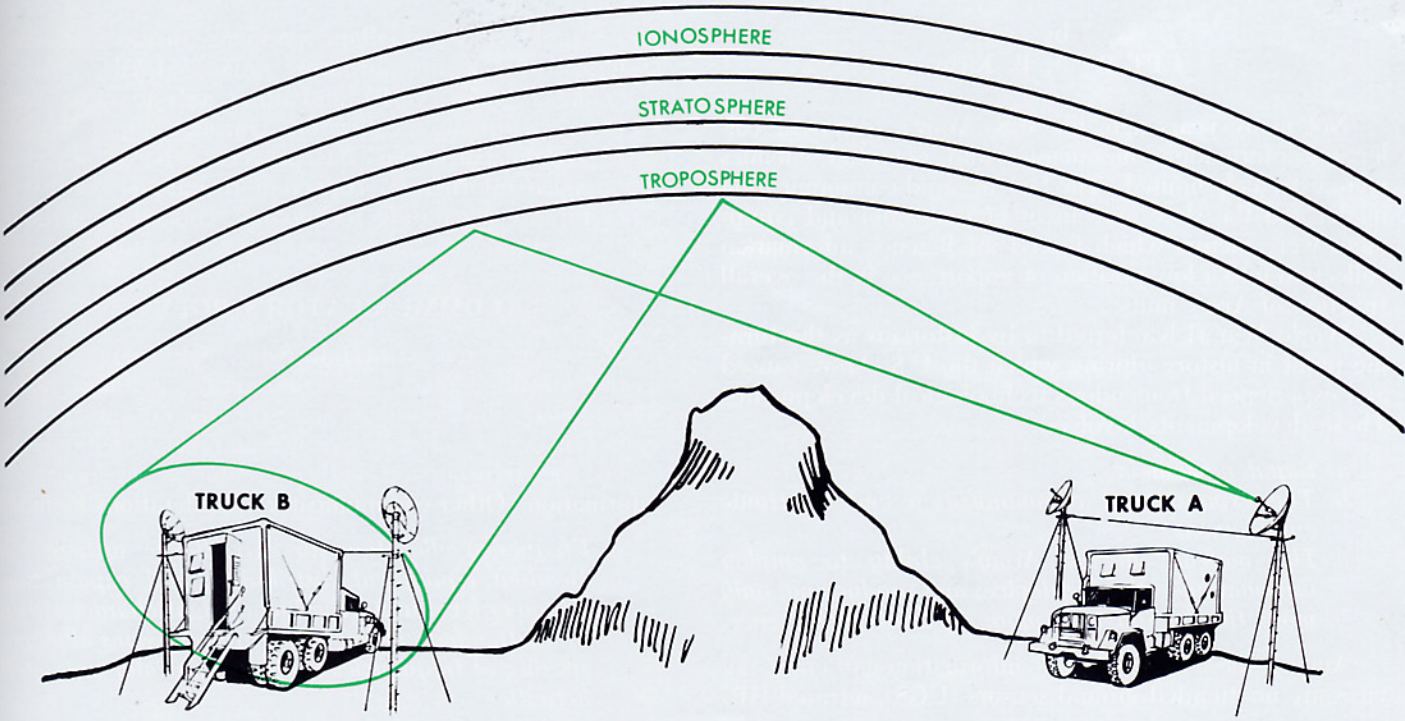
It's great to be back for the second issue of TAC and talk about one of my favorite topics—the tropospheric (tro-po-SFERE-ick) scatter system.

The basic idea is pretty simple. The air above the earth has three layers. The first layer—the TROPOSPHERE—has unusual physical characteristics which permit an invisible radio signal to bounce off it . . . sort of like a bullet off Superman's chest.

The sketch below shows truck A sending out a radio signal from its antenna to the antenna on truck B. The signal becomes "scattered" after it bounces off the troposphere, but truck B is able to catch enough of these scattered signals to make the message understandable.

That's about all there is to it. It's really useful since it allows us to send a message from one antenna to another without the sender and receiver being able to see each other. We can communicate over obstacles such as mountains. Before we had the tropo system, we could only send and receive radio messages between two antennas which were in a straight line-of-sight setup. The tropo system has saved many lives since we no longer have to win certain territory, such as a mountaintop, from the enemy in order to set up communications.

I'll be looking forward to telling you about other subjects, such as microwave, pulse code modulation, AC/DC, AM and FM radio, and even TV.

See you next issue when my topic will be . . . the telephone.

Tuner