Loudoun Amateur Radio Group
Regular Meeting Minutes October 19, 2024

Venue: Leesburg Lutheran Church

Meeting called to order at 8:35 AM.

- Pledge of allegiance.
- Steve N4RAF gave a presentation about ADS-B operation.

  One fact unrelated to ADS-B operation was that some ham operators are bouncing radio signals off aircraft or off the ionized exhaust trail from aircraft. Frequencies from VHF to microwave are being used for this mode.

  ADS-B transmits flight information about the transmitting aircraft using an automatic transmitter. Information includes airspeed, position and altitude. Transmitters are small enough to be included on General Aviation aircraft although the transmitter is not required by regulation unless the aircraft is flown in controlled airspace. ADS-B transmitters are required on commercial aircraft. The equipment on the aircraft includes a receiver that processes the signals from other aircraft to detect a possible collision. ADS-B helps to provide coverage of aircraft positions that are below the RF horizon of ground radars. Implementation of ADS-B has increased safety and allowed closer spacing during all phases of flight.

  Disadvantages of ADS-B include that fact that the aircrew becomes dependent on the system rather than other sources of situational awareness. The signal is dependent on GPS services which can be spoofed by bad actors. The ADS-B signal transmitted by the aircraft is not encrypted.

  Much like APRS, ADS-B is assigned a fixed frequency for transmissions. The international frequency is 1090 MHz. In the USA, 978 MHz is also used for ADS-B operation, but the transmitter is called a Universal Access Transceiver (UAT). The second frequency is used below 18000 feet to reduce the message density on 1090 MHz.

  A home station to receive ADS-B signals can be constructed rather inexpensively. Basically the hardware consists of an SDR dongle and a raspberry pi computer. Received data can be sent to **adsbyteexchange.com** using the Internet. The website generates maps containing aircraft position data based on the supplied data.

- The club has historically held a holiday party in December, but a party is not scheduled for this year. Any club member interested in hosting a party should send an email message to 'leadership@k4lrg.org'.
- Doug KM4GC reported information about the recent ARES Simulated Emergency Test (SET). Some operators were located at the Loudoun Emergency Operations Center

(EOC). Three operators were located at their home stations. The group verified operation of Winlink, repeater and simplex operations, and operations using an ICS-205 formatted comm plan. It was noted that repeater frequencies in the ICS-205 should be listed as a receive and transmit frequency rather than a received frequency and a transmit offset.

Information about Loudoun County ARES can be found at the web site **lcares.org**.

- Steve N4RAF reported that the Western Loudoun sheriff's station has been reserved as a site for the 2025 Field Day event.
- The treasurer Tareck K9TRE reported that ac check for $1440 was received from the Reston Bike Club as an honorarium for the club support for their century ride this past summer. The club checking account balance is $11,172.13.
- The meeting adjourned at 10:15. The next club meeting is scheduled for October 19.
- Attendance

N4RAF	Steve
W0MPM	John
KT9N	Chris
N4PD	Paul
KJ4BXA	Lloyd
KE4S	Dave
KQ4VHX	Mike (visitor)
KM4GC	Doug
KQ4MAM	Megan
WA4KBM	Kevin
W4MPM	Chris
WA4TXE	David
K9TRE	Tareck
KS1G	Steve
N4FAF	Jim