

1. David Graham, President of DFARG, called the meeting to order at 6:30 pm. with 27 members in attendance.
2. President Graham introduced ARRL Officials, Roanoke Division Director Bud Hippisley, W2RU, Roanoke Division Vice President Bill Morine, N2COP, and SC Section Manager Marc Tarplee, N4UFP who were present to present Cliff Kayhart, W4KKP, the League's Centurion Award.
3. Cliff Kayhart, W4KKP, the oldest known radio amateur, was presented the ARRL's coveted Centurion Award represented by an engraved plaque at the November 2019, meeting of the DFARG and PARC. The award recognizes radio amateurs who have attained Centurion, 100 year, status. Cliff, who lives in White Rock, South Carolina, is 108. The ARRL Board of Directors conferred the award on Cliff at its July 2018 meeting. The plaque was signed by Rick Roderick, K5UR, ARRL President. While Cliff, W4KKP, was first licensed in 1937 as W2LFE, he has also held the call W9GNQ.

One of Cliff's most interesting life time experiences was his service as an Army Lieutenant on Iwo Jima during WW II. Shortly after the U.S. occupied the island, the General in command assigned Cliff the task of establishing radio communications between Iwo Jima and Tokyo preceding the anticipated Japanese surrender. Cliff coordinated with Sea Bees the construction of under ground tunnels to protect the transmitters and generators from enemy bombing. Having witnessed the destructive power of the B-29 bombers stationed on Iwo Jima, Cliff is of the opinion that the War in the Pacific was won by General LeMay's saturation bombing of Japan and not the deployment of nuclear ordinance.

At wars end, cliff returned to the states, worked for the telephone company, assisted with the design and construction of Radar units at RADLAB and built his first television after purchasing the CRT. Presently, Cliff remains active routinely checking into several nets from his assisted living facility in White Rock, SC. Cliff has created a few pileups once it's learned that he's 108. Centurion Award recipient's League membership fees are waived while they continue to receive QST and all other member benefits. A video of the award presentation may be found at <https://youtu.be/NwOgmIFQW1o>.

4. John Seibels', K4AXV, presentation based on "**The Top Secret Operation That Changed WW II**" follows the development and use of radar during WW II as it unfolded through the contribution and activities of Henry Tizard (English born chemist and radar research committee chairman), Alfred Loomis (American investment banker, scientist and philanthropist), Eddie Bowen (Welsh born physicist) and Karl Compton (President of MIT and physicist). Tizard was instrumental in the early development of radar necessary to protect English cities within 70 miles of Britain's East coast from German bombers.

The first systems operating at 11.5 Mhz were noisy, had limited range required enormous power and the scan rate was too slow to capture faster planes. The first test system did return a flying boat at 350 ft. off shore which prompted the construction of the **Chain Home**, 350 ft. towers along Britain's East coast coast. Receiving towers were made of wood, transmitting towers of steel. Research determined that 910 Mhz. was the ideal frequency to capture aircraft at altitude. However, 200 Mhz. was tops at the time and early klystrons could produce only 50 watts output. Thereafter the cavity magnetron was developed by the Brits which operated at the higher frequency and generated immense power from a relatively small system which enabled microwave radar systems to be carried aboard aircraft and warships.

Although President Roosevelt wished to remain neutral, Churchill prevailed in 1940, and lend lease

was born to provide Britain with weapons and supplies lost at Dunkirk. Churchill offered Britain's radar expertise for America's Norton Bomb Site. Roosevelt declined on the Norton bomb site, consequently, only scientific information was exchanged after the National Research Council meeting in Canada. Later Tazar met with Lomas and Compton to have America built radar equipment at RADLAB on the campus of MIT. Tazar transferred a newly developed 9.5 kw, 9.8 cm radar system to Compton by secret transatlantic voyage to facilitate construction of radar equipment at MIT's RADLAB. Shortly thereafter, German subs sank two US destroyers off Greenland. Five weeks later Japan bombed Pearl Harbor. The US was now in the War and RADLAB was building radar for both America and Britain.

Germany obtained, reverse engineered and constructed a British designed, American made radar system to detect Allied radar signals. Success was short lived. When the Allies discovered the Germans were monitoring their signals, the Allies replaced their older 10 cm systems with newly developed more effective 3 cm systems. German boats equipped with the 10 cm radar sensing systems were quickly sunk. Acquisition of the German Enigma decoder about this time helped find those boats. The new 3 cm system with conical scanning was installed on anti-aircraft guns to improve accuracy first in Italy where many German bombers were destroyed. Also, German subsonic V1 missiles were shot down by 3 cm radar equipped anti-aircraft guns. The new systems could track the V1s to their launch base which would then be targeted by allied bombers.

In 1945 with war ending in Europe RADLAB moved from the MIT campus to work on the atomic bomb and Loomas retired to a plantation he'd bought in South Carolina. In 1975 Loomas passed away and the plantation was sold to a development company. It is now known as Hilton Head Island.

5. The Secretary inquired of a quorum in attendance if they had read the Minutes of the October 2019 Meeting online and if any corrections were found. As a majority indicated they had read said Minutes and there were no corrections found a motion was made, seconded and approved to accept said Minutes. Further, the Secretary confirmed that the equipment that W2PAT's daughter, Nancy Upchurch, donated to DFARG has been added to DFARG's Equipment Insurance coverage, excepting items valued at less than \$100.00.

6. Charlie Brown, as unopposed nominee for 2020 DFARG/PARC President will act on his motion and next year convene a meeting of the Executive Committee to discuss how and when to repair our sagging yagi boom. It is suggested that we find a climber, borrow or buy 160 ft. of Dacron line for the gin pole presently clamped to the tower, have the ground crew supported climber go up tower with line, attach line to center of yagi boom, feed line through gin pole to ground crew, unbolt yagi from mast, assist ground crew in lowering beam, repair beam on ground, then reverse process to reinstall. Use of a bucket truck is unnecessary and too expensive.

7. Tim Smith has five participants for his Extra License class which meets Tuesday - Thursday at 10:30 pm. Initial trial test were disappointing but work continues.

8. Tom Francis reports that John Miller is recovering nicely from his by-pass, heart surgery and will soon resume DFARG activities. Tom Offered to conduct Technician license classes.

9. Former DFARG President and Secretary, Jim Lamb opened the election of 2020 DFARG/PARC officers with a declaration of the nominees and respective offices: Charlie Brown, KD4CB, President, Tim Smith, K4OIW, and Bruce Frost, KI4VRO, vice President, John Siebels, K4AXV, Treasurer, Elaine Thorp, N4EHT, Secretary, and Jim Walters, KB4FF, Legal Officer. All members in good standing. Secretary, Jim Walters, asked all members present who had not previously acquired a ballot from the front podium for the Vice President to do so. A motion to elect by acclamation the

unopposed nominees for President, Treasurer, Secretary and Legal Officer was made, seconded and approved. Then, ballots for Vice President were requested, collected and counted by Jim Lamb. Secretary, Jim Walters announced the count was 14 votes for Tim Smith, and 8 votes for Bruce Frost. Tim Smith was elected Vice President. The newly elected officers assume their respective offices January 1, 2020.

10. President Graham congratulated the newly elected officers and adjourned the meeting at approximately 8:15 pm.

Jim Walters
Secretary