

The Amateur Radio Club of Savannah



ARCS Field Day

The Amateur Radio Club of Savannah Field Day was a big success. Around 40 people (and 5 armadillos) attended this annual event, which test the emergency capabilities of our organization. An official from CEMA came to our event to see first-hand how well we could function under adverse conditions. A reporter from WTOC interviewed Andy Blackburn, WD4AFY, and videoed our setup. The Field Day report was aired on the WTOC Sunday news at 6:30pm and the 11pm, and also on the Monday Morning News.

Pictures by Andy Blackburn.



continued on next page.....

Attention: A small group of local hams in the area are trying to form a spotter group. I have contacted NOAA concerning this interest and we need more people to get involved before they will send a representative down from Charleston for a spotter class. If you would be interested in this, please email me at ab4bc@comcast.net. This class will be held somewhere in the Savannah, GA area. Also, this class will be open to all amateurs and non-amateurs and is not affiliated with any local amateur radio club.



“Until field-day next year, 73s!”

Monitoring the 71st Fighter Squadron by Mac McCormick, KF4LMT

The 71st Fighter Squadron has been training in Savannah since the end of May and will be here until sometime in mid-July. Home based at Langley Air Force Base in Virginia, they are staying at the Savannah Combat Readiness Training Center at the Savannah International Airport. The 71st Fighter Squadron is the last squadron in the 1st Fighter Wing flying the F-15C Eagle; the other 2 squadrons have transitioned to the F-22 Raptor. Originally, the F-15 only had UHF radios.

One of the results of the terrorist attacks in 2001 has been the installation of VHF capable radios in the F-15. It is unknown if the 71st's F-15s have received these VHF capable radios, but so far I have only heard them use UHF. A scanner or radio capable of receiving the 225-400 MHz range in AM mode will be needed to monitor the 71st's activity. All frequencies are in AM mode unless otherwise noted.

Aircraft using the Savannah Combat Readiness Training Center (CRTC) use Savannah International Airport's Ground, Tower, and Clearance Delivery frequencies and Savannah Approach and Departure frequencies for local air traffic control because the CRTC is located at the Savannah Airport.

With a VHF only radio, you can hear the ground side of the communications on these frequencies if you are close enough. To hear the F-15s, you will have to have a UHF capable (225-400 MHz) radio.

348.600/121.900
Ground Control

257.800/119.100
Tower

291.775/119.550
Clearance Delivery

387.100/125.300
Approach/Departure (011-109 degrees)

380.025/120.400
Approach/Departure (110-269 degrees)

307.225/118.400
Approach/Departure (270-010 degrees)

Unlike most civilian aircraft, which use N-numbers to identify themselves with Air Traffic Control, military aircraft use callsigns composed of a word and a 2-digit flight numbers (somewhat similar to how commercial airlines identify themselves). An example of a callsign for a 71st Fighter Squadron F-15C would be FIRST 71. These are the callsigns that the 71st Fighter Squadron are using:

AIRGUN	JEEP	ROACH
BADGER	LIMEY	ROCKY
BANYON	LION	SALTY
CRATE	MADDOG	SPEEDO

FIRST	PECOS	SONIC
GAUCHO	RABID	SUNDOG
HOOPER	RINGO	TRAIN
IRON	RISKY	VAPOR

The 71st Fighter Squadron is using the CRTC's Command Post frequency for their "IRON OPS" operations frequency. Their maintenance crews are using one of the CRTC's VHF FM frequencies for their maintenance net. The squadron is using their own air-to-air or "Aux" frequencies for intra-flight communications.

237.000
CRTC Command Post; 71st FS "IRON OPS"

142.2625
CRTC; 71st FS Maintenance Net (FM)

228.175
71st FS Aux, air-to-air

293.300
71st FS Aux, air-to-air

328.500
71st FS Aux, air-to-air

358.850
71st FS Aux, air-to-air

363.900
71st FS Aux, air-to-air

379.800
71st FS Aux, air-to-air

A number of Jacksonville Center air traffic control frequencies are used by the F-15Cs as they depart Savannah's airspace en route to the training areas they are using.

These frequencies are used after the Savannah Approach/Departure frequencies if they are leaving Savannah's airspace or before the Approach/Departure frequencies if they are entering Savannah's airspace. These frequencies are also used by any military aircraft operating in or transiting through the area, not just by aircraft operating of the CRTC.

277.400
Jacksonville Center Brunswick Sector

282.200
Jacksonville Center Jekyll Sector

363.200
Jacksonville Center Allendale Sector

Several operating areas are being used for air combat training by the 71st Fighter Squadron's F-15Cs. They are using the Gator MOA (Military Operating Area) which is over land just south of Fort Stewart in the McIntosh County area, Special Use Areas W-157 and W-158 over the Atlantic Ocean off of the Georgia coast, and Special Use Areas W-161 and W-177 over the Atlantic Ocean off of the South

Carolina coast. SEALORD, a United States Navy agency controls W-157 and W-158; BRISTOL is a part of SEALORD and they handle ground controlled intercepts within those areas. DOUBLESHOT, a United States Air Force agency, controls W-161 and W-177.

Each of these areas have assigned operating frequencies for training activity. For the Gator MOA, aircraft will go directly to one of it's frequencies from Jacksonville Center frequencies 277.400 or 282.200. For W-157 and W-158, aircraft will check in with SEALORD on a primary frequency before being pushed (or QSY in amateur radio terms) to a discrete or control frequency. For W-161 and W-177, aircraft will check in with DOUBLESHOT on a primary frequency before being pushed to a discrete frequency.

286.600
Gator MOA

269.350
Gator MOA

228.400
Townsend Range (in Gator MOA)

284.500
SEALORD North Primary (aircraft check-in)

311.500
BRISTOL Ground Controlled Intercept

320.500
BRISTOL Ground Controlled Intercept

349.800
W-157 Discrete

376.900
W-157 Discrete

385.300
W-157 Discrete

279.725
DOUBLESHOT Primary (aircraft check-in)

258.400
W-161/177 Discrete

381.350
W-161/177 Discrete

These frequencies are also used by any aircraft training within these areas, including F-16s from Shaw Air Force Base and McEntire Air National Guard Base, F/A-18s from Marine Corps Air Station Beaufort, and F-15s from Jacksonville International Airport.

Dead Electrical Dudes

by Philip Neidlinger

This Month's Stiff: James Clerk Maxwell

Entered mortal coil:
13 June 1831

Assumed Room Temperature:
5 November 1879



Jimmy boy, wife Katherine, and unidentified dog.

The homely individual pictured above is none other than James Clerk Maxwell, father of all that we hams hold sacred. Jimmy's mathematical formulas, which had as a foundation earlier research by Faraday on electricity and magnetism, predicted the existence of electromagnetic waves, i.e. radio. These formulas are quite complex, and even I, with a full year of college calculus under my belt courtesy of a questionable institution of higher learning (after all, they DID admit me, didn't they?), have difficulty digesting them. Here are the formulas below for your enjoyment:

1. $\text{div } E = 0$
2. $\text{div } H = 0$
3. $\text{curl } E = c \times dH/dt$
4. $\text{curl } H = c \times dE/dt$

Where E = electric field strength,

H = magnetic field strength,

curl = rotation (or rate of change and vorticity),

div = divergence,

dH/dt and dE/dt are partial differentiations with respect to time.

\times = multiplication

Okay, you may ask, what does all this gobbledegook mean? Simply put, a changing electric current in a conductor will set up an ex-

panding electromagnetic field propagating outward at the speed of light (this is the foundation on how transmitters work). Conversely, an electromagnetic field intersecting a conductor will induce a varying electric current (this is the foundation on how receivers work). A few years after Jimmy's death, all of this mess was proven to be true when a particularly bright German researcher, Heinrich Hertz, demonstrated the existence of radio waves via experimental means. Our hero was vindicated!

Maxwell was not a particularly good teacher at St. Andrews University in Great Britain. Maxwell did other important work on the orbital dynamics of Saturn's rings and developed the kinetic theory of gases. Maxwell's theories on electromagnetic radiation, however, were later considered to be the greatest contribution to science in the 19th century. Jimmy died quietly in bed, at peace with himself and his Maker.



The Amateur Radio Club of Savannah

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ARCS Elected Officers for 2006:

President: Doug Rowland, KF4EFP, jdrowland@comcast.net
Vice President: Kayton Smith, W4KTN, kayton3@comcast.net
Secretary: Andy Blackburn, WD4AFY, (912) 238-4676, andy@g-net.net
Treasurer: David Delamater, K4DJD, (912) 412-4109, k4djd@comcast.net
Activities Manager: Philip Neidlinger, KA4KOE
Trustee: Kurt Hoffman, N4CVF, (912) 356-8581, n4cvf@arrl.net

Appointed Positions for 2006:

ARCS Webmaster: Andy Blackburn, WD4AFY, (912) 238-4676, andy@g-net.net
Key Klix Newsletter Editor: Brian Cave, AB4BC, ab4bc@arrl.net

"Hope you have a wonderful 4th of July and a great month ahead! 73s everyone!"