



Next Meeting

**Tuesday, February 3, 6:00pm, Bullock's BBQ
Program: Challenges and Advances in Developing
Autonomous Vehicles**

By: Jeffrey Forbes

Jeff is a computer science professor and dean at Duke University. He gave a DFMA program on robotics several years ago. Below is a summary for Tuesday's presentation.

Advanced Vehicle Control Systems aim to reduce traffic accidents and congestion by adding some degree of autonomy or sophistication to the individual vehicles themselves. Autonomous vehicular control, a major thrust of current industrial and academic research, presents a significant challenge for computer science and engineering research. Advances in sensing, machine vision, and reasoning under uncertainty have been realized in vehicles in the DARPA Grand and Urban Challenges and the Google Self-Driving Car. I will talk about some of the challenges in developing autonomous vehicles and highlight some of the recent advances.

President's Corner

Greetings Everyone,

Another month has passed and found me wondering where the month went. If you happen to see where my month went off to, please let me know you found it and return it to me?

I am happy to report we are nearly at a closure with the leasing issues of our repeater tower. Charlie's (NC4CD) persistence at this thing is to be lauded. While our contract will never be the stuff of UNC or Duke Law Review, it did have certain twists and turns during negotiation that might have been worthy of say a side story in some television court drama (I want Robert Redford to portray me....).

One thing of note to this contract is it's duration -- 40 years. I will be 92 years old. Long live DFMA, right? ☺

We are dead in the middle of wintertime propagation season and my newly constructed vertical is (along with the hot chocolate) making me all warm inside. Hope you're having the same results!

Our upcoming presentation is about the autonomous Google car (we welcome our new autonomous overlords!). This is exciting stuff, people! As to when this is coming to a dealership near you (or, more likely, you order it online)... Hopefully sooner than our repeater gets renegotiated!

See you all Tuesday!

73, Michael, KK4EIB

Amateur Extra Class Course

For a few months now, the members of the DFMA Board have been talking about sponsoring a course for members wishing to upgrade to the extra class license. This was triggered by a number of members who currently hold an Advanced Class license who felt it was about time to take that last step.

At the last Board Meeting we decided: 1. It is going to happen and soon. 2. It will be held on Saturday mornings from 9 to 12, in four or more sessions. 3. Students will have to acquire an ARRL license manual be a considered "real" participants.

At the next meeting (Tuesday) we will try to construct a working roster.

This is open to all hams (with a General or Advanced license), but we need to get rough numbers to find a meeting place and to nail down the starting date.

Instruction will be a group effort including a number of the "students" doubling as "instructors" since some of them have strong technical backgrounds and many years of advanced, practical ham radio experience. It will also include some DFMA members who already have their extra class license.

Links for the manual:

- ARRL Website: <http://www.arrl.org/shop/ARRL-Extra-Class-License-Manual-10th-Edition/>

- Amazon.com: <http://www.amazon.com/Extra-License-Manual-CD-ROM-Amateur/dp/087259517X/>

Remember: DFMA Dues for 2015

Your DFMA dues are due in January. A PDF of the dues form(s) is attached with this mailing. Alternatively, you can always find the form on the DFMA web site: dfma.org (click on Membership at the

top to get to the right page). 58 people are already paid up for 2015. Join the crowd!

You now have the option of renewing by PayPal. To use this option, go to the dfma.org web site and click on Membership at the top. The rest should be obvious. If you use this option, do not forget to update your directory information if any changes have occurred. You can still use the old membership form for that and bring it to a meeting or mail it in. (Currently, we do not accept new membership applications through PayPal.)

Dayton is Calling

Wilson, W4BOH, recently sent the following email:

Bill, NC4BL, is running the bus to Dayton again and this is likely the last time. Cost has gone up, since he has had to change bus companies, but it's still reasonable, \$340 for bus and lodging. The rooms are simple, but clean, and there's door to door travel for hamfest and meals.

See the following article: Wilson's report on last year's trip.

He forwarded email from Bill Lundy:

I am attempting to get things finalized for the upcoming Dayton trip to avoid some of the confusion later on. I have several listed that indicated they wanted to go but I have not received deposits from them. My flyer [see link below] indicated that deposits should be received by Feb. 15th but I really would appreciate getting them by January 31st. Thanks to those of you who have already sent your deposits or full payment in. So, if your budget will allow, and you have not sent in your deposit, I sure would like to hear from you.

A reminder. The coach (bus) and rooms (Campus South @ UD) have to be paid in full ----- 30 days in advance.

It is advisable to order your ticket (good for all three days) in advance for \$20 as they will cost \$25 at the door. Their address is: Dayton Advanced Tickets, PO Box 1446, Dayton, OH 45401. Be sure and enclose a self addressed stamped envelope, SASE.

Again, thanks to those of you (25) that have sent in your deposit or full payment.
Bill Lundy

Link to a pdf of the bus trip flyer -

<https://drive.google.com/file/d/0B7oGRACIGIM0S3IMcXM1VVFIRnc/view?usp=sharing>

Link to a pdf of the itinerary -

<https://drive.google.com/file/d/0B7oGRACIGIM0dWlfQTNwYzJKVHc/view?usp=sharing>

The Haj of the Infidel

- Wilson, W4BOH

(Wilson sent this to me last summer. I decided to hold it until people started thinking about Dayton again – maybe I waited too long. This article has also appeared in the OCRA newsletter. – Dee, KU4GC, ed.)

Do you have a bucket list? They seem to be all the rage, but since they smack of organization they are not something in which I'm interested. I do have a few things I'd like to do in my few remaining years. I've been to Oshkosh a few times, so that's done and I'm way too old (and poor) to fly fighters, so that's off too. I'm capable of going to hamfests, however, as proven by many BOHmobile trips. So, after hearing about so many Dayton trips from local friends, I decided to give it a go. Starting late (Remember what I said about organization.) I found that rooms were fairly expensive and either far from the fest or in by-the-hour looking places. All would necessitate renting a car and/or taking shuttle rides each morning and afternoon. Then I remembered I had heard of a charter bus run for hams to go to Dayton. Googling "ham bus Dayton" instantly got me the ad for last year's trip and an email to the contact, Bill Lundy, who informed me there was indeed a bus this year and that there were just two seats left. After a few milliseconds of vacillation, I decided to throw in with the bus crowd and give it a try.

This was Bill's 37th year at Dayton, but I don't know how many were bus trips. Among other things, Bill used to be a driver for the small company that owns two buses, so he gets a good rate on the bus and knows how to use it. The more I thought about not driving, not dealing with the room search, not having to get a ride to the fest or home, etc., the better it sounded! I boarded in Burlington, the easternmost pickup, and off we went, with a hired driver because Bill is 82 and can't get commercial insurance. We made brief stops to pick up people (more hams) in Greensboro, Kernersville, Winston, Mayberry, and Wythville, Va. Every single passenger was on time and it only took a minute to put their bags in the cavernous belly of the beast and get going again. We made rest stops at reasonable intervals, had lunch at

a Bob Evans (don't bother), and rolled to a stop at our Univ. of Dayton dorm right about 1700. That's about an hour longer than the drive in a car, but having no responsibility for navigation, buying fuel, or checking the oil made the time very enjoyable. One could chat with the 34 new friends on the bus, read, or nap. The big bus was quiet and smooth riding.

Did I mention a dorm? Yes. UD is a smallish Catholic school smack in the city of Dayton. It's a 15 minute ride from the fest, but the bus dropped us at the gate every morning! On the way we had breakfast, one day at the UD cafeteria and one day at Golden Corral (not a bad breakfast at all). Then the bus sat in the lot near the gate and we could use it to rest our legs or have a quiet lunch. Those who wished could buy subs at the UD cafeteria and leave them on the bus or carry them around (not a good idea). At the end of the day, we boarded the beast again for dinner at a local pizza/Italian place or Golden Corral. The pizza place is a local institution and does an enormous business. It's not a chain and the food has character (good).

Then it was back to the dorm for bull sessions or reading. After a day at the fest, there was not a lot of BS energy available, however, and with no TV we tended to go to bed early to be ready for the 0700 boarding the next day. The dorm was spotless, the bed OK, and cost almost nothing. What's not to like?

So what about the Hamfest, or Hamvention as they call it? As Oshkosh has more planes than one can take in, Hamvention has more "stuff" than one can take in.

The flea market was much bigger (several times) than anything close, maybe four-five times Shelby. There was a lot of stuff, much of it good and some that should have been left at home. I clearly missed the glory days, because there were very few classic components like coils, caps, transformers or chokes. There was almost no HB gear, just a couple of amps. There were boatanchors and some more modern rigs, mostly at fairly fanciful prices but bargaining was possible in many cases. There were all sorts of nice tools and more old two way stuff than anyone could use. Tadd found some usable rigs. It could be seen in a day, but not thoroughly. Best way was to buy what you were sure you wanted, with some haggling if necessary, unless it was something expensive, and make note of what else you wanted. Then work on the else items and the haggling for the expensive items on day two. Some people realized that some markets are very thin and would be reasonable and

some would not. It's a sad fact that lots of the stuff there is obsolete beyond reason and that very few are left who know how to use it, even if they wanted to! There were a few nice boatanchors, some at reasonable prices and some not. I'm old, have more than I can work on, and am getting more lazy every day, so all I bought was a couple of coils, a couple of meters, and a couple of relays, and one small transformer (30 cents, it had a broken wire.), maybe fifteen pounds in all.

Inside was a new ham's Mecca (You do remember it was a Haj, don't you?). Almost everything you see in QST, and more, was there, as well as some small company stuff and even some non-ham stuff. I have almost no interest in most of the commercial stuff. One decent solid state rig is all I need, so they are not much fun to look at. The SDR stuff, including displays from transceivers, is "pretty", but I'm guessing almost no one really understands it and even fewer have any real use for it, so it's a big ho hum for me. The big distributors like HRO were doing a land office business. If you know prices and buy right, cheating the government of sales tax and getting free shipping, it may be worthwhile. I glanced at the new midrange Yaesu, with the screen like a 746, but was not enthralled. Besides, the screen will eventually go bad, probably when they are no longer available, and make the rig another unrepairable relic. There was all manner of hardware from DX Engineering and the like. They are quite a good company, unless you happen to need a schematic of something you bought. "Sorry, we don't hand those out." has been heard from them a few times! The Hexbeam people, MFJ (and all its brands), Elecraft, and a host of others were there in mind numbing profusion. Our own Howie sold all his KX-3 heatsinks and took orders for many more! Who would have thought a \$1000+ QRP rig would need an add on heatsink to be usable for some of the modes it can work? There's some engineering for you! So I ran the whole inside, some of it with Mac (WQ8U), who joined up on day two, Saturday. It was fun, especially getting the cold beer. It cured me of wanting to buy anything new for quite a while!

The ride home was pretty much a replay of the ride up, except for stopping at Tamarack Lodge, in WV. It has decent food and many displays of craft work by West Virginians. I'm told it was the pioneer setup of such stuff, now seen in many states. I bought a pair of earrings. No not for me, for Dee Anne! And we were back to Burlington around 1700. A guy from Raleigh gave me a ride home.

Would you believe Bill has been 37 times? Many of the guys on the bus had been 10+ times, mostly with Bill. He's been saying for several years he wasn't going to organize another trip, which he did perfectly, but has kept it up. The bus company is for sale, so the next trip will cost a little more, but it might happen. He passed around a sheet and almost everyone on the bus signed up for next year, if it does! The bus and room cost \$175. Dirt cheap considering what one received. Meals were all modest, so the whole thing was very reasonable.

Was it fun? You bet; it was great! Would I go back? Probably, but not for a couple of years and for sure not next year. It's better than Shelby, but not overwhelmingly better and the time investment (I don't have much left, you know.) is considerable. I'd rather use the travel days fixing something or making one of my improbable creations generate some RF. I could even do some of the things Dee Anne wants done. I might even use some time to get my tower up, only a year, or ten, late! Isn't it amazing how much shorter years are as we age!

73, Wilson W4BOH

PS: One of our guys won the grand prize, a \$9000 radio! I got a free peppermint from a vendor.

Antennas for Everyone

- Max, KO4TV (From the September 1997 DFMA Link)

(Below is a copy of Max's article on a simple HF antenna. More reprints of Max's articles are planned for future editions of the Link. - Dee, KU4GC, editor)

Since most of the past articles have dealt with 2 meter antennas, general theory or how not to get conned by unscrupulous antenna manufacturers, it's about time for an article on HF antennas. This one will require a little historical background, SO please bear with me. As many of you know, my background in radio was almost exclusively with VHF and Microwave equipment. Before becoming a Ham in 1990, I enjoyed a 43-year career as a Radio Engineer, but only dealt with frequencies from about 40 MHz to 24 GHz.

So, like most aspiring Hams, the first thing I did was pull out the books and begin studying HF antennas. After sorting out the usual conglomeration of current and obsolete antennas, such as the G5RV, G4ZU, Squashed Rhombic, Bazooka, Trapped Dipoles, Slopers, Inverted VeEs, Minookas and the like, I

noticed that one statement kept hitting me in the face time and time again. Most of my old antenna books, from the 30s to present, kept stating: "The most practical and effective multi-frequency antenna for general Amateur use is a center-fed doublet, commonly called a center-fed Zepp, cut for the lowest anticipated frequency to be used, fed with open-line or ladder-line, and matched to the transmitter KV7D, Adriano; KK4DMS, Dan and Lucy; KK4EIB, Michael; KU4GC, Dee and W4MKR, M.K.; W1GWL, Gary; KE4HIH, Rhett and KE4QOZ, Joanna; WA2JLW, Roy and Patricia; KF4LJZ, Linda; K2MZ, Duke and Nancy or transceiver with a Transmatch or as it is more commonly called, an Antenna Tuner."

With this wisdom of the ages behind me, I scrounged up some scrapped #10 copper house wiring, bought (GASP!) three antenna insulators, 100 feet of 450 Ohm ladder line, some small nylon rope and a couple of boat cleats to secure the rope, and set to work. The wire was cut into two 66 foot pieces, with an insulator on each end and in the center. The ladder line was connected to the center, the ropes to the ends, and the whole assembly was hoisted up between two convenient pine trees that happened to be about 150 feet apart. In accordance with the ARRL handbook, the ladder line was cut to the recommended length of 77.5 feet, to avoid presenting an "awkward" impedance to the tuner at any of the commonly used Amateur frequencies (if it is more convenient at your location, the alternate length is 42 feet). A home brew S.P.C. Transmatch was constructed (Plans in next month's LINK), the whole mess was hooked up to a Heathkit MT-1 transmitter running about 15 to 25 watts, depending on frequency, and I set out to conquer the world! Darn near succeeded, too!

Within a few weeks, had worked all continents, including Antarctica, and many exotic locations, including Seychelles, Rotuma, Vanuata, Tonga, New Zealand, Russia and many more. This thing was really a performer! It was only 45 feet above ground at the highest point, and the total cost was not much more than pocket change! These contacts were made on 80 thru 10 meters. A later change in the feeding system allowed 160 meter operation, but more about that later. If you have two tall trees in the proper location, or can put up one or two poles or masts, there is no reason that you, too, cannot work the world! More next month on tuners and 160 meter operation.

73, KO4TV Max

Board Meeting Minutes

(draft, not yet approved)

Durham FM Association (DFMA)

DFMA Board Minutes - 1/20/15 - Dan, KR4UB,
Secretary

Location: Bullock's Barbeque, Durham

Attending: Michael, KK4EIB, president; Dee, KU4GC, vice president; MK, W4MKR, treasurer; Dan, KR4UB, secretary; Skip, WB4P, past president; Charlie, NC4CD, repeater manager; Paul, KE4OXN, hamfest chair; Dave, W4SAR, field day coordinator; Karen, KD4YJZ, at-large member; Pete, K4PHS, at-large member; Bob, W4RWC, at-large member; Dan, KK4DMS, at-large member

President: Michael, KK4EIB called the meeting to order at 7pm.

REPORTS

Treasurer - MK, W4MKR

Current Members: 57 are paid up so far this year.

Secretary - Dan, KR4UB

The minutes from the 11/18 Board, 12/02 and 01/06 Club Meetings were approved by unanimous vote.

Vice President - Dee, KU4GC

Dee reported that the next club meeting program will be a presentation by Dr. Jeffrey Forbes, an Associate Professor in the Department of Computer Science at Duke University on the topic of autonomous (self driving) vehicles.

Dee reported that Dwayne Ayres, ARES NC District 10 Coordinator is requesting local clubs to sponsor award plaques for the upcoming NC QSO Party at a cost of \$45.00. A motion was made and approved by unanimous vote for DFMA to sponsor an award.

A discussion was held to establish tentative plans for the planned Amateur Extra License Study Group. Of those present and interested in the class, Saturday morning sessions lasting approximately 3 hours (9AM to Noon), were felt to be the most convenient time-frame. Given the content, it is estimated that 4 - 6 sessions will be required to cover the material. The class will be open to all amateurs. Those interested should plan to be at the next DFMA club meeting to participate in the discussion to finalize the time, date and location of the class.

The ARRL Extra Class Manual will be the text for the class. The manual can be ordered at the links below:

- ARRL Website: <http://www.arrl.org/shop/ARRL-Extra-Class-License-Manual-10th-Edition/>
- Amazon.com: <http://www.amazon.com/Extra-License-Manual-CD-ROM-Amateur/dp/087259517X/>

Repeater Manager - Charlie, NC4CD

Charlie reported that the Hillsborough repeater site lease documents are in the final review process with the landlord and Crown Castle. The lease will be for an initial period of 10 years, followed by four 8 year renewal periods.

Hamfest Chair - Paul, KE4OXN

Paul reported initial contact for the Little River Complex has been made and the site will be available for this year's DFMAFest to be held May 23rd. Paul further reported exploring several options regarding the site and costs, and was encouraged by the board to pursue those options.

ARES - Dan, KK4DMS

Dan reported the ARES Auxcom SET is scheduled for April 9th from 8:30AM to Noon. As previously reported via Jim, NN4JW Durham County AUXCOM Coordinator, orientation sessions will be available to those interested in volunteering and training for AUXCOM duty at the Durham EOC.

Field Day Coordinator - Dave, W4SAR

Dave reported in the next month he will start polling band captains for their interest in band positions for this year's Field Day event. Preliminary discussion with Wilson, W4BOH indicates he is amenable to hosting the 2015 Field Day event.

NEW BUSINESS

No new business.

Meeting adjourned at 8 pm.

Club Meeting Minutes

Durham FM Association (DFMA)

DFMA Meeting - 01/06/2015 - Dan, KR4UB,
Secretary

Location: Bullock's Barbeque, Durham

Attending: KR3AM, Mark; W4BOH, Wilson; KK4BPH, Mike; WA4BVY, Terry; NC4CD, Charlie; WD4CEE, Terry; KK4DMS, Dan; KM4DVD, Russell; KK4EIB, Michael; KU4GC, Dee and W4MKR, M.K.; KE4HIH, Rhett and KE4QOZ, Joanna; W4KSZ, Jim; KF4LJZ,

Linda; W4OFZ, Banks; W4ORD, Lad; K00UX Vic; KX4P, John and Guest David Clemens; KK4PH, Lowell; WA2ROC, Dick; W4RWC, Bob; KR4UB, Dan; N2XZF, Paul; KB4WFV, Kevin; WB4YYY, Jim and KA4AVM, Sue

A total of 28 attending, 27 of them hams.

President: Michael, KK4EIB opened the meeting at 7pm with introductions.

A Board Meeting was convened in which Charlie, NC4CD reviewed the terms and conditions in the Hillsborough Tower Site lease to be presented to Crown Castle in a meeting on the following day. Dee made a motion which was passed with a unanimous vote that the lease inflation adjustment clause provided for the landowner, also apply to the DFMA portion of the lease payment.

REPORTS

Vice President – Dee, KU4GC

Dee, announced that N4MIO, Dwayne who is the awards manager for the NC QSO party this year, is requesting clubs in the area to sponsor awards plaques, and requested that DFMA sponsor a plaque for a cost of \$45.00.

An exhibition of Minjin Kang's latest series of work "Ham Radio" will be on display at the Horace Williams House from January 4-26, 2015.

Treasurer – MK, W4MKR

Members: 46 (whose dues are current).

Secretary - Dan, KR4UB Nothing to report.

Repeater Manager – Charlie, NC4CD See Board meeting comment above.

ARES - Nothing to report.

Announcements - Thanks go to Mike, KK4BPH for providing the PA System that made it easier for all to hear the program presentation speaker.

Door Prizes - Door prizes winners were Terry, WD4CEE - flashlight; Mike, KK4BPH - extension cord; and David Clemons, guest of KX4P - compass.

Program Presentation

Dick, WA2ROC gave an audio/video presentation on Modern Radio Control Aircraft. Included were construction details on a number of vintage aircraft that Dick built for magazine articles and included videos of his first flight of the models. The models are quite large, some having 80+ inch wingspans and 25cc displacement engines. Dick also gave a brief summary on the state of FAA regulations under consideration that could affect the flying of model aircraft.

Meeting adjourned at 8:03pm.

Buy – Sell – Trade

Wanted: Dead Microwave Ovens

I can use dead/dying/unwanted microwave ovens. The power transformers can be used for power supply construction. Thanks.
Wilson – W4BOH

For Sale: High Quality Coax

Wilson is usually putting together a bulk order for high quality, LMR-400 equivalent coax. By ordering full spools he can usually get it for about one half the typical retail price. Contact him before buying larger length on your own.

Upcoming Events (dfma.org for details)

- 2/3 6pm DFMA Meeting
- 2/7 8:30am Richmond Frost Fest
- 2/9 7pm OCRA Meeting, Orange County EOC
- 2/14 7pm VE Session, Orange County EOC
- 2/17 7pm DFMA Board Meeting
- 3/3 6pm DFMA Meeting, Bullock's BBQ

73 - Dee, KU4GC, Editor

- MK, W4MKR, Proofreader

Send copy to ku4gc@amsat.org

Deadline: one week before the Club Meeting

(Images and copy: KU4GC or as credited)

Web Site: dfma.org