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Robert F. Heytow Memorial Radio Club

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Night Flight

A Treat for Hams and Vintage Aircraft Buffs

Philip Cala-Lazar, K9PL

Night Flight, MGM's 1933 film version of French author Antoine de Saint-Exupéry's eponymous 1931 novel was released in 2011 on DVD after a 70-year viewing hiatus. Directed by Clarence Brown, the star-laden cast includes John and Lionel Barrymore, Helen Hayes, Robert Montgomery, Myrna Loy and Clark Gable. For hams and vintage aircraft fans the real attractions are *Night Flight*'s detailed views of early 1930s radio and aviation technology.

Mordaunt Hall reviewed the film for the New York Times on October 7, 1933 and lauded it for its "imposing list of players and the meticulous attention to details of flying, both on land and in the air…." Thankfully, as an historic document despite its entertainment origins, the avionics of the period are also well depicted. In his October 15, 1933 review, Hall, a WWI Royal Navy Volunteer Reservist with wartime experience aboard seaplanes, noted the film's "…most careful attention to the details of flying, the accoutrements, the flashes in the radio control room, the sending and receiving of messages…."

"star-laden cast"

Saint-Exupéry's book is a fictionalized account of his experiences at Aeroposta Argentina (a division of the French company Aéropostale) where he worked as company director and as a pilot flying airmail.

Aeroposta flew the Potez 25A, a French airplane, to transport the mail. The aircraft pictured in the film, however, appear to be the American Douglas M-4, fourth in a series of Douglas aircraft based on their earlier Cloudster D/T model and specifically designed for the U.S. Postal Service and Western Air Express. A biplane, with a wingspan of 39 ft, 8 in, the M-4 could carry an 800-pound payload at a maximum speed of 137 mph and cruised at 110 mph. All M series were powered by the WWI vintage Liberty V-12 engine. In this iteration it was the Liberty 12A producing 420 hp. The M-4s in the film are marked with the French "F" country registration prefix. Charles Lindbergh flew an M-4 on his St. Louis to Chicago airmail route.

A Potez 25 may be glimpsed for a fraction of a second, early on, in the scene of pilot Robert Montgomery's nighttime landing at Buenos Aires. Originally designed as a military two-seater reconnaissance biplane, it was soon modified to fill a number of roles including commercial applications. In 1929 the Potez was the first civil aircraft to cross the Andes while pioneering the airmail route between Buenos Aires, Argentina and Santiago, Chile. The Potez 25 on this route, limited by its 18,000 foot ceiling, had to seek lower altitude passes through the mountains and the film dramatically depicts this reality in a life or death scene for Robert Montgomery. The Potez 25 had a wingspan of 46 ft, 7 in and was powered by a liquid-cooled Lorraine-Dietrich 12Eb V12 of 450 hp, attained a top speed of 132 mph and cruised at 108 mph.

Continued - Night Flight on Page 8

Inside This Issue...

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Field Preparation: Generator Edition

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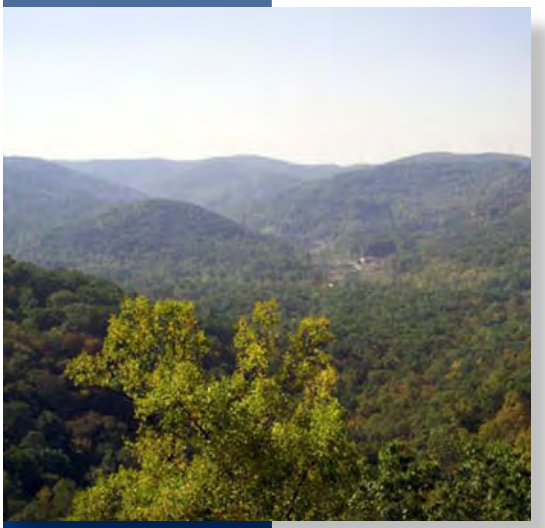

Eastern Kentucky

Eastern Kentucky, an area of tall hills and dark valleys, has traditionally poor radio reception in the valleys and great reception on the hilltops. There are a few great hilltop locations, as surface coal mining has left flat areas that afford great vistas. These places make excellent Field Day locations, albeit with no utilities. Besides a good operating position, these hilltops afford a great getaway within a reasonable distance, and being prepared makes it all so much better.

This article concerns the acquisition and modification of a generator with enough muscle to run a complete expedition communication, data processing and housekeeping electrical load.

In choosing an appliance for my home, sufficient research led to the purchase of Guardian 15KW propane set. The economy is perfect: One pound of propane yields 1KW for 1 hour. Even though this kit was made to fit a custom cart with inflatable and steerable wheels, moving a 600 pound machine the size of a freezer is not a chore taken lightly, so it sits up on blocks on the front porch, right near the 10 cent Coke machine and tub washer: Perfect for rural Kentucky.

"a great getaway"

The FD generator also had to be propane-fueled, and I'll tell you why: Generators go for long periods without use. Even if they are regularly exercised, the majority of the fuel is not consumed and, gasoline rots away without STA-BIL® additive, and even with the additive it deteriorates. So unless the owner has a system for completely draining the generator gas tank and carburetor fuel bowl at every shutdown, there is a good possibility of a fuel contamination glitch. And, if the genset is needed in a hurry, the contaminated machine will require repair and the emptied machine will require filling.

Diesel fuel, often thought to be more stable than gasoline, is subject to biological contamination, and will develop mold in the fuel that will eventually turn it to brown jelly. If this contamination is forced into the injection system it means extensive disassembly, cleaning and repair. There are additives, but these are meant for diesel vehicles with a frequent fuel turnover.

The next choice is fuel gas. There are natural gas sets and propane (LP) sets. They operate with different sizes of carburetor jets because of the BTU rating of each gas. A home generator in a permanent setup with plentiful access to a natural gas utility line is a wonderful combination, except what if the condition that interrupted the electric utility also disrupts the natural gas utility? This leaves propane at the top of the heap, so to speak.

Propane is supplied in sizes varying from one pound Bernz-O-Matic® bottles all the way up to ten thousand pound storage tanks that can be buried underground. Portability being the issue, barbeque-size 20-pounders, forklift truck 35-pounders and home supply, 100-pounders are all in the game of being viable for dragging away to a campsite.

There is not a wide choice of portable propane generators. When the word "portable" is used, it defines a class of generators we frequently see in lumberyards: open frames, handles and wheels.

One problem with portable gensets is the method of creating the a.c. waveform and its regulation as far as voltage and frequency go. Another issue with portable units is the sound level while operating. Not being enclosed generally means being subject to the full monty of engine noise. (This is usually dealt with in camping situations by digging a trench and having sandbag walls.)

Then, there are home standby sets. These are found with brush-type alternators, true sine-wave output and superior regulation schemes, in addition to sound-reducing enclosures. The trouble is they are not easily made portable.

Again, research led me to the Briggs and Stratton 7KW Automatic Home Generator Model 40248 with

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the Briggs 310000 vertical OHV engine. The 7KW figure means it will run on twenty-pound BBQ tanks or 100-pound home-supply tanks.

Then there is the portability issue: The 7KW set, weighing in at just around 200 pounds, and the 10KW set, weighing in at over 300 pounds crosses the latter off the list. There would be no way to move a 10KW set around alone.

Finally, the price issue: The Briggs 7KW home generator, without an automatic transfer switch, but with all the other advantages like good regulation and a sound reducing enclosure was on sale at various places for less than $2K, delivered—a done deal.

The set arrived bolted to a pallet. The genset itself is mounted to a steel base plate on top of a composite plastic plinth, all meant for plopping down outside the home and never moving.

The starting battery compartment is meant to hold a storage battery of certain dimensions, the manufacturer also specifies it should be a valve-regulated, lead-acid unit with 600 Cold Cranking Amps capacity. I went to the battery supplier for my work where we equip mining vehicles, and he was unable to come up with a part number that matched the size and CCA requirements, as were several other suppliers. Realizing this was not an easy match, so I added an external battery line with suitable connectors so a storage battery could be quickly attached, detached or replaced with something readily available. The cord connectors used were Anderson 350 amp forklift battery charging connectors; the battery was a Wally Marine special 900 CCA, flooded lead-acid with a beautiful carrying handle and wing nuts.

"—a done deal"

Careful fabrication of a battery cord, with connections for a smart charger and forklift connectors matched a somewhat similar cable set for the generator and voila; the starting battery problem was solved.

Since there was not to be a conduit run from a permanent genset installation to a building, the generator box was fitted with a suitable Hubbell flexible cord connector to fit size 6AWG X 3C SOOW cord. This size was selected because there was a spool of 300 feet of surplus 3C SOOW available. The only requirement was to add a mechanical ground clamp to the distribution circuit breaker box and to the genset frame and to run a suitable a.c. electrical ground conductor (4AWG) between the two, but there's more to it:

Any generator appliance should get its own dedicated ground rod, in every circumstance. In permanent situations the grounds are all bonded together, inside and outside of buildings, even with a utility supply. This means the ground and grounding networks of a radio station need attach to an a.c.e.g., as well as an RF ground.

Not wanting to move the generator with all this heavy wire and circuit breakers, etc., it was equipped with a twist-lock male and female, but the problem then encountered was that the NEMA size 3P-30 cord plug and corresponding cord receptacle had a maximum rating of thirty amperes and was not really suitable for outdoor locations.

Guardian 15 KW Generator

Some small hunting was done on the Web and the Hubbell type CS-82646 cord receptacle and corresponding CS-8265C cord plug was discovered. These are a newly-UL approved cord set of Twist-Lock connectors rated to fifty amps at 250 volts, a perfect combination for a portable setup.

(If having to do this all over again a four-conductor setup would be chosen, but who could refuse a 500-dollar gift of SO cord?)

The only thing left was the propane connection. Once again, there wasn't to be a permanent connection to a gas main, so a flexible hose with a tank-mounted regulator was found on the Web. All the fittings on the Briggs are Standard Pipe thread, so a simple adaptor kit with even a brass cap to keep the inlet clean was purchased for less than fifty bucks. The only chore left was figuring out how to move it around.

It started out on a four-wheel aluminum delivery cart. The system was not a happy one, as the cart was way larger than the genset footprint, and maneuvering the cart with a 200-pound machine was not easy. A decision was made to get rid of the plastic plinth and to mount a wheel set directly to the steel plate. NorthernTool.com sells a trailer wheel kit with linkage steering (Item # 143309-1106) that will support 800 pounds for just around seventy dollars, and Harbor Freight's price is even less for the same kit. It comes with 4X10 inflatable tires, and is easy to install.

Continued - Field Preparation on Page 8

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Conan Wyatt Burtram Barger, W3CVE

Part I

Scott B. Laughlin, N7NET

Hupmobile

As related by Red Barger, W3CVE (SK)

Foreword

When *electromagnetic* was a word few folks could define, the redheaded Barger boy of Des Moines, Iowa was up to his elbows in a wireless of his own, and soon his call was added to the short list that already existed. That, in itself, was a giant accomplishment, but for Red it was only the beginning of many achievements to come, including a long and fascinating career with the CIA.

Some readers will consider his achievements the result of being in the right place at the right time, like waiting with an open glove when a fly ball soars into the outfield. Not so. To the ancient Greek philosophers this was what set man apart from beast, the ability to stave off the urge to fulfill instant gratification and the molding of one's future might be called forethought or planning. Perhaps you have a more fitting word. In any case, it played a significant role in Red's life.

> *"…leisure is essential to wisdom."*

In order to redeem the benefits of forethought one must acquire knowledge. Plato, the most influential of all Greek philosophers stated: "…leisure is essential to wisdom."

In my opinion, Plato directed this statement toward the aristocratic establishment, referring to the education and grooming of a selected few destined for political position and power. However, taken out of context, Plato's words still ring true.

Youth, with a clear mind, unhampered by the daily struggle of survival, is capable of achieving many worthwhile accomplishments that influence the remainder of his/her life. Red Barger is a prime example.

In those early days of wireless—the days preceding radio—there were no electronic stores, no convenient sources for information or parts. Ingenuity and fabrication were the name of the game. And as primitive as some of these devices seem, Red was working at the cutting edge of technology for that time.

Imagine yourself in his father's position. Electrocution and fire were both very real possibilities and he must have experienced many times of unrest while Red tinkered with his contraptions. Without the cooperation and tolerance of Red's parents this story of radio history might never have become reality.

Chapter 1

I first saw the light of day about 8 am September 13, 1907 at Locama, Iowa. Like all kids I drank enough of my mother's milk until I grew to be a fat redheaded duffer labeled Conan Wyatt Burtram Barger. When I was about six years old we moved to Fort Dodge, Iowa where my dad started his first business college. While there, my folks said that I developed a yen for mechanical gadgets and would take clocks apart and try to put them back together with no luck. Also, I had a yen for picking up stray dogs. I have always liked dogs and they seemed to have a special liking for me. These strays came out of nowhere and followed me home. We lived in a boarding house. Our quarters were crowded and my folks said, "NO!" So there was nothing left for me to do but turn my four-footed friends out after they'd had their three squares.

One day a big dog followed me home. He came to my shoulders. He must have been part mastiff. I begged my folks to let me keep him. My dad said: "Son, this is a valuable dog and he belongs to someone. I will put an ad in the paper and if no one claims him you can keep the dog." Boy, was I happy, and of course, hoped that no one claimed him. The next day, after the ad was in the paper, a man came and said it was his dog, Mike. Mike was very glad to see his rightful owner. My heart sank. Before the man left with the dog my dad suggested that we should have a picture of Mike and me. So arrangements were made with a local photographer. I have the picture today of me sitting on a tall stool with Mike's head on my lap and my hand on his head.

Continued - Red Barger on Page 8

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Bob Stevens, K9ING

Midland, Texas

I got my Novice at W9SBK's (SK) kitchen table (Jim was my Elmer) in March of 1957. The test was given by K9DNH who had just gotten his General a month or so before. I was 13 and he was 17. Got General in October '57 by taking the test before an FCC examiner in St. Louis; Advanced later, been hamming ever since. Fast-forward 54 years to 2011; I had just bought myself a new Vibroplex® bug and gotten back on CW after 25-year layoff. I was ready to call a K4 on 40m who was saying 73 to his contact; then he sent his friend's call: it was K9DNH! I called Phil and we had a QSO after all these years (54) on CW at ages 67 and 71, on CW, just where we started. Ham radio is fun—especially the dit dahs!

Ham Lingo

DICK SYLVAN, W9CBT

DEAD BANDS

Amateur Radio at the Movies

Bob Cashdollar, NR8U

SUPER 8 2011 Rated PG-13 1 hour, 52 min.

Super 8 lists Steven Spielberg as executive producer. The movie is a kind of homage to Spielberg's *ET, the Extra Terrestrial*. Several kids in a small town in Ohio in the early 1970s are trying to make a zombie movie to enter in a contest when they stumble across a government conspiracy. You could think of it as ET gone bad.

The movie displays what the *Super 8* kid director calls "Production values" with impressive special effects. The plot line of the kids making the amateur horror movie must have caused a few chuckles among the real production crew.

Amateur Radio In The Movie

At a town meeting where the residents air their fears about strange things going on in town, an older man stands and identifies himself as a ham radio operator who has heard strange transmissions as he scans the airwaves. The hero, a sheriff's deputy, questions him further and he gives the frequency of 13,201 as one of the spots he has heard what he thinks are government transmissions.

The deputy questions another deputy about his scanner equipment and asks him to bring it to the squad room. It turns out the deputy's equipment, shown later, is a mint looking Heathkit Seneca receiver with some sort of radio/tuner sitting on top. The kids in the movie also use some sort of handheld radio, CB (?), to communicate with each other.

The DVD I saw the movie on was really a barebones disc without any extras. ■

The Last Word

Newington, CT – The American Radio Relay League announced today that the operation of Log Book of the World will be outsourced to a new computer operator.

Due to the overwhelming response from amateurs all over the world in recent weeks, the operation of LoTW has been backed up for days at a time.

A spokesperson for the League issued a statement to the effect that the new operator, CyberDyne Corporation will assume operations as soon as possible.

A recorded message returned from the CyberDyne corporate headquarters stated, "We will fix everything when SkyNet goes on line in a few days."
–NR8U

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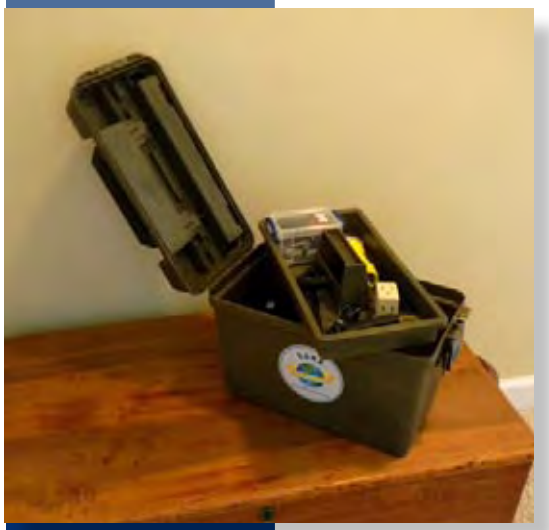
The Venerable "Go Box"

Part II of II

Paul W. Ross, W3FIS



In this second article, I'd like to extend the discussion to my second approach to the "Go Box." In particular, I want to look at a capability for HF operation, as well as the usual VHF and UHF capabilities. VHF and UHF equipment is severely limited for range unless you can deploy a good antenna on a high location. However, HF systems, depending on the band and time of day, can provide reliable communications over much greater distances. Different strokes, for different folks…

Some years back, I acquired a Yaesu FT-817ND. For those of you who haven't seen one, this is a five-watt multi-band, multi-mode transceiver that works the HF bands in addition to 2-meters and 70-centimeters. With this unit, which has an internal battery pack, you can set yourself up for:

AM, believe it or not.

FM–Primarily for VHF and UHF.

SSB–both upper and lower sidebands.

Digital–through a special jack to your computer interface.

Packet–likewise through the interface jack.

Wide-band FM for reception of the commercial FM band.

That covers a lot of ground. With an appropriate sound card interface and a computer, you are ready to do digital modes and, optionally, control the radio itself and use it as a general-purpose receiver into the bargain. Who needs knobs to twiddle, except up old codgers?

I've talked about digital modes in previous articles, so I won't explore that issue again, though there is a growing interest in digital modes for ECOM work, and a lot of our amateur radio clubs' Field Day operations center around digital communications.

"Who needs knobs to twiddle…"

For a "go box" for HF work, things are different. You are probably going to have more "bits and pieces" than is needed for deployment with the HTs we discussed in the first article. I find that a sportsman's "Dry Box" is very nice. They usually have a removable tray, a compartment or two, a good O-ring seal, and a convenient carrying handle. In addition, they are not particularly expensive, and work well as a toolbox for the car, or for transporting camera equipment. Put a piece of foam rubber, or the like, in the bottom for padding, and they are a very handy piece of equipment. If you are going on safari to Africa, there are more rugged cases, at much heftier prices, such as the Pelican cases. For most of us, that is simply overkill.

In our box, I need space for:

- The radio–I use the FT-817ND, but other modestly powered units will also work nicely, but are more bulky.
- An antenna for HF. This can be something like a Miracle Whip or other "short" antenna for short-range use. For longer range, a dipole or vertical antenna is a plus. The various helical wound antennas such as the "Ham Stick" are also good possibilities. Your problem here is the bulk of the antenna you have to transport and what arrangements you can make for setting it up. If you are not able to manage a large antenna, then a roll of hookup or magnet wire will suffice as an improvised antenna.
- An antenna for VHF and UHF. A simple whip or "rubber duck" might do the trick, but a more substantial whip or magnetic mount antenna is worth the investment. I find that an automobile magnetic mount whip can be conveniently placed on a windowsill if I am working indoors. Of course, if you have room for it, a J-pole antenna is better yet. I have seen some very nice arrangements where a flange is placed on a plank, the antenna pole fitted into the flange, and the plank placed under the rear wheel of your vehicle.

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- An antenna tuner for HF work. You need something capable of handling anything from an end-fed wire thrown up in a tree to a nicely resonant dipole. I have used both an LDG Z-817 Auto Tuner for my FT-817ND, or the MFJ-902 Travel Tuner with good results. The FT-817ND does include an SWR meter of sorts, but being a little bit paranoid, I find that one of the "CB" SWR meters works nicely for HF. I cannot get full-scale deflection on 80-meters, but have more than enough deflection for a good reading on 40-meters and up.

A comment about antenna tuners: The LDG Auto Tuner is an "L" tuner, with switched inductance and capacitance values, retained by latching relays. The tuner derives its power from a set of internal AA cells. For longer life, I have opted for the more expensive lithium cells, and expect at least a year's operation from a set. If you use conventional alkaline cells, make sure to have an extra set with you in case of difficulty. Having your tuner fail to tune is not something you want to encounter.

The LDG Z-817 tuner's "L" design seems to be capable of handing a fairly wide range of antenna impedances, but in difficult cases, the "T" design of the MFJ-902 may be found to be a better bet, but you will need the SWR bridge. End-fed wires can have exceptionally high impedance, which may exceed the matching range of the antenna tuner. I have found that a LDG 4:1 balun can be used as a convenient impedance transformer, giving me more range with the tuner.

"Cheap is good…"

With the "T" design antenna tuner, you have three variables–a tapped inductance, and two capacitors. This means that for a matchable impedance, it is possible to not have a "unique" set of settings for an impedance match. In particular, you can dissipate a lot of power in the internal inductance. To avoid this, set as low a value of inductance as will provide a match with whatever settings of the input and output capacitors are appropriate. For use at my home QTH, I have noted the setting for each band on a small card that is clipped to my operating location.

Other stuff will be needed, but not limited to:

- Necessary coaxial cables, fittings, and the like. You have to be able to connect anything to almost anything else. The plastic boxes used for fishing tackle and lures are handy for this. They often come as part of a soft-sided fishing tackle bag that you might use as a "Go" kit.

- The instruction manual or "cheat sheet" for the transceiver, as well as a pad and pencil for taking notes. Modern transceivers are not the friendliest devices, especially in the field when you need to reprogram something. If it is something you don't do frequently, that is just the time you will forget some critical step!

- Power sources, outlet boxes, extension cords, etc. If you can run on batteries, then something like a "battery box" using a sportsman's "Dry Box" is nice. The one I have has space for storing the charger, an external connection for plugging in the radio, and a microphone clip. The radio can be set on top of the box to provide a better view of the control panel.

- A key, if you plan on doing CW. There are some very nice small keys on the market quite suitable for fieldwork. Not as nice as a real "bug," but sufficient.

- A set of comfortable headphones for a more peaceful vicinity and better performance in noisy environments. Cheap is good here, especially if they get dropped.

- Some basic tools, such as screwdrivers, pliers, and special wrenches for knobs, etc. A roll of plastic electrical tape, spare fuses, and some duct tape are not out of order.

I'm sure you can think of more stuff, but rapid deployment and having all the things you need is paramount. I keep a copy of the inventory list in the top of the "Go" box including all the important items. In addition, I have marked everything with labels that include my call sign, which is important, as stuff seems to grow legs and walk off during Field Day. ■

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Continued - Night Flight from Page 1

The radio operator (actor, Leslie Fenton) in Clark Gable's plane wears an otherworldly-looking, hinged microphone. The microphone at rest sits vertically, when needed it pivots down to face the operator's mouth. Operating CW (to battle QRN) he uses a flameproof leg clamp key. It's difficult to tell from the print, but the key resembles the U.S. Army Signal Corps J5A or the Brelco CAQZ-26026. Aeroposta's radio dispatcher has at his disposal and clearly pictured on his desk, both a bug and a straight key. The code heard in the film is not gibberish, but what is sent does not reference the scene.

Gable's radio operator is several times depicted reeling in and unreeling the trailing antenna complete with tail-end weight (fish). Also shown are several period wire antennas including flattop and cage types located at airstrips along the airmail routes.

Paul Mantz, famed Hollywood stuntman pilot and Amelia Earhart's technical adviser on her 1937 flight (*K9YA Telegraph*, November 2009), appears in the film as an uncredited stuntman. ■

http://www.imdb.com/title/tt0024381/

http://www.youtube.com/watch?v=InMAlgLl9dg

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The Moment You Knew…

Of course you remember the defining moment when you had to get your ham ticket. Your eyes opened wide and you couldn't soak it in fast enough. Tell us about it—your Elmer—your first contact—your first rig, etc.

Send us an e-mail at: telegraph@k9ya.org

Continued - Field Preparation from Page 3

The whole generator needed to be disassembled to get access to the steel plate. The plastic plinth was bolted to various things above and beyond the steel plate and they all had to go. The main item is the engine and alternator assembly that sits on rubber shock mounts on a tubular steel support frame. I ended up using my shop engine hoist, which worked perfectly. It needed three different sets of straps to lift it fairly evenly.

Buying a twenty foot stick of square, 1" x 1" x 1/8" thick-wall steel tubing, a frame was fabricated under the steel plate to help support the machine that was now missing the plinth.

In addition, this frame was also welded to parts of the wheel kit frame, and with a minimum of added steel, the plate alone was sturdy enough to support the full 800 pound rating of the wheel kit itself.

Once the wheel kit was on the plate and the whole assembly spray-painted, it took less than a day to get the whole generator back together and boxed in.

The acid test was not running the generator, but moving it around. With the wheel kit under it, the set was able to climb the step into the storage barn with no difficulty, and is able to roll up and down the ramp into the back of the pickup truck. A surplus wooden crate was found to haul the wiring and breakers, and, of course, the battery already has a handle. Total time to set up:

Less than thirty minutes, and the only tools needed are a Crescent wrench to tighten the LP gas fitting, a big screwdriver to tighten the mechanical ground clamps and a railroad hammer to pound in some ground rods. ■

Continued - Red Barger from Page 4

The first car my dad owned was a Hupmobile. I'm quite certain some of the old timers remember that car. The Hup had gas-lit headlights and whenever we were to go driving at night my job was to light them.

The old Hup was a good car and we had many enjoyable tours in it. In those days there were not many cars on the road. Hupmobile, Ford, Stanley Steamer and Apperson Jack Rabbit were some of the most popular. Most of the transportation was via horse and buggy and many runaways occurred. Some of them resulted in serious consequences. Dirt roads were the only means of travel and you had to be very careful when it rained, or else the car would get stuck in the sticky Iowa mud. ■

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