

## Restoring a Grundig *Drucktasten -Boy-57E* Portable AM/Shortwave Tube Radio Tom Zaczek CRC Member

### A unique sort of radio

*Drucktasten* in German means *pushbuttons*, and so this radio would be called the *Pushbutton-Boy-57E* in English. Made in 1957 in Germany by Grundig, the “E” at the end of the name indicates it was the “export model”. I suppose that *Pushbutton-Boy* as a product name was ahead of its time in the consumer product arena, as *Game Boys* and *Walkmans* came along many decades later. But this radio is unique not just in its name, but also in a lot of other features.

For a small radio measuring only 10.5” wide x 7.5” tall x 3.5” deep, this radio has a lot packed into it. The highly regarded pushbuttons select between 4 separate AM bands: the standard broadcast band plus 3 shortwave bands covering from 3.16 MHz to 22.5 MHz. It uses four tubes (DK96, DF96, DAF96, and DL96) plus two selenium rectifiers. In addition, there are many, many tuned LC circuits all packed into a very small area that made this “fun” to work on.

You don’t see a lot of Grundig tube portables around these days. It is an AC/DC portable, with battery as well as mains power operation using its power transformer. By inserting screws into the desired holes in a small panel in the chassis, it allows setting for 3 different mains voltages (110, 160 and 220 VAC). As far as batteries go, it needs 90 volts for the tube plate voltages and 1.5 V for the filaments. But the 1.5 volts can come from an internal hard-wired rechargeable Nickel Cadmium (NiCad) cell, or a standard D-cell battery. There is even a jack for connecting a 6 volt car battery to charge the NiCad cell! There are no provisions to charge the 90 V batteries but the 1.5V one was probably the one that was consumed more quickly of

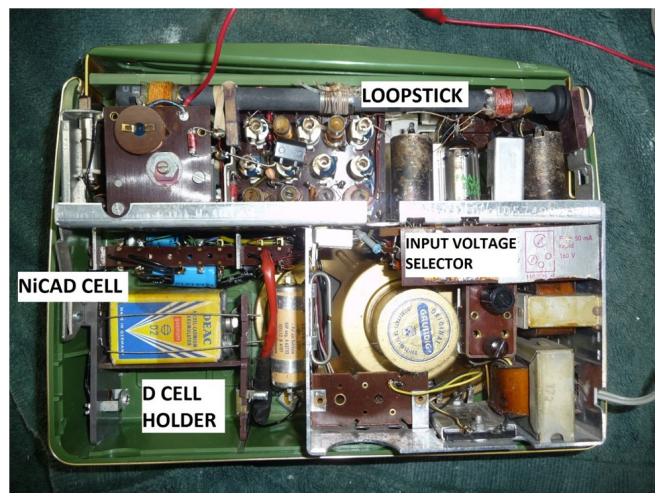
the two. That is a pretty unique arrangement of options that I have not seen in radios of this era.

It has a 3 foot telescoping antenna plus an external antenna jack, to augment the ferrite loopstick inside the case. It has a smooth rotary vernier tuning dial that is labeled in meters for all the 4 bands. Labeling in meters on the standard AM broadcast band is a little awkward for a US market I suppose. It takes some getting used to when you are familiar mainly with looking at an AM radio dial labeled in frequency. This was an entertaining and satisfying restoration for me (because I got it to work finally!). I learned a lot about a unique German portable radio design, and had to be creative to overcome some challenges. With the help of the World Wide Web, *Google Translate* and a gentleman from France, I got this sweet little portable playing again.



### The Finding

I came across this radio in a second hand store where it stood out among a handful of beat up wooden and plastic table radios. Its dusty green case with the brass trim and stylish Grundig logo caught my eye.



The case was a little scratched but not cracked at all, so I opened it up to see what might be inside and saw that most everything appeared to be there. There was a tube missing and the ferrite loopstick was hanging by only one of the several wires that used to be connected. I also saw this odd looking rectangular metal battery (the NiCad) with a bunch of fuzzy corrosion on its terminals.

“Potential...” I thought. That simple thought starts the chain of events which has put a few too many radios in my basement. “Definitely restor-

(Continued on page 3)

# COLORADO RADIO COLLECTORS ANTIQUE RADIO CLUB

Founded October 1988

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## Message from the President

Well, since Scott was not at the last meeting, I guess he won't have a president's message.

Our meeting in Castle Rock was well attended. We had a fine report from Wayne Rus-sart on his project for Tiny Town. Wayne has done a lot of work on this and spent several hundred dollars. He offered the club an opportunity to have advertising on the miniature house he reconstructed for a contribution from the clubs treasury for the materials used in the project. This was approved unanimously.

Dana Cain has offered the club a chance to participate in her Modernism show for no fee.

The Byers Evans house is looking for a 1920's radio.

Auction/Club Picnic time is coming rapidly. Before you know it, October 3rd will be here. Dig out and spiff up all of the fine items that you will be bringing. The past few years there has been a huge number of very fine items. For some time now, I've

thought that we will never outdo last year's event. But, I've been wrong time and again.

We need to get coordinated for the auction/picnic at the July meeting. I will not be at the September meeting (I will be 9 time zones east of here) and Dave Boyle may not either.

Alexis Alexandridis will be taking over the roll that Larry Weide performed for the past 1/4 century. He has great computer skills and will do a fine job. I've volunteered to assist him.

Regarding volunteering, I am considering un-volunteering for newsletter editor. This is my 7th year and I don't want to monopolize this job. It must be an easy job or I would not have done it. Lets discuss this fine opportunity at the July meeting.

*Rich Kuberski*

### CRC CONTACTS

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NOTE: at = @ in email addresses

### Upcoming Events

7/10	1940 Battle of Britain begins
8/6	1945 first A-Bomb Delivered on Japan
9/6	Labor Day
10/3	Auction/Picnic

### Meeting Locations

(Unless noted otherwise)

Littleton	Castle Rock
March	January
July	May
November	September

### CRC MEETINGS

Meetings are held on the 2nd Sunday of every other month starting in January (except May is 3rd Sunday) at 1:00 pm. The meetings consist of business, "show & tell", raffles, auctions, swap meets, technical discussions and other subjects of interest

### CRC MEMBERSHIP

Annual membership in the CRC runs from July to June. Dues entitle members to attend meetings, "The Flash!" our newsletter, discount book prices, participation in our spring show and Fall auction. Current annual dues are \$20. New memberships will be prorated to the following June.



(Continued from page 1)

able....” I mused next, noting how different this radio really looked to be. “I don’t have one *anything* like this”. I just didn’t seem to get around to asking myself if I really needed another radio, and in this case I am really glad I didn’t.

So I brought it home and the first thing I wanted to do was figure out what model I had in front of me and try and find a schematic. The only label inside the case just had information about the batteries. I needed some information to figure out what the correct tube numbers were and how to get the ferrite loopstick rewired back into the set. The loopstick, which is almost as long as the radio is wide, looked like a real challenge. Not only were half the wires disconnected, one of the short turn coils had completely unwound off the stick. Here’s where the Internet always comes in to help me along, and in this case I used some new resources in ways I hadn’t anticipated.

### The search for information

Only knowing that I had a Grundig portable radio, I went to the European website, [radiomuseum.org](http://www.radiomuseum.org) (<http://www.radiomuseum.org>) and looked around at their photo galleries for Grundig and soon found out what the model was, as well as the high level specs and tube information. The tubes that were in my radio weren’t all the correct ones, and I still didn’t know where they plugged in. I needed that schematic. I am not a member of [radiomuseum.org](http://www.radiomuseum.org) (maybe someday), so I didn’t have access to their schematic; I went searching for one elsewhere. Armed with the model number now, and using a Google search, I found a wonderful website of a fellow in France (<http://egon.retro.free.fr/>) who has restored this exact same model and had posted the schematic and his restoration story out there for all to see.

Here is where I used a new (to me) web resource for the first time in restoring a radio: Automatic Website Language Translation. Since this website is written in French, I used *Google Translate* to make it readable to me. There are other ways to do this, but with Internet Explorer as my browser, I go to [www.google.com](http://www.google.com) and type: “egon.retro.free.fr/” into the Google search box. Then you get a list of search results; the first one is the website with a link titled “Translate this page”. Hit that link and the webpage comes up translated into English. It doesn’t read perfectly, but it does a decent job of it!

Now that I had the schematic, and some key information from someone who had already restored this model, I was really excited that I could get to work on the electrical restoration. The Grundig schematic has text on it in German, French and English for the most part. There are a few scattered words in just German around it. I used the translator up in the cloud again to work through this. Now I know that “stutzpunkt” means “socket-point”. (I probably won’t remember that next week). But a schematic is sort of a universal language anyway, and I can read this one sufficiently; only some of the symbols on this one were a little unfamiliar to me (like an indicator lamp being a circle with an “X” in it).

4 BANDS LABELLED IN METERS ON THE DIAL



### Getting it working

So knowing a bit now about the wiring and what the voltages should be, I disconnected the corroded NiCad battery, pulled out the tubes, plugged it in and slowly ramped up the voltage using my variac. I didn’t get any smoke, but the high voltage output of the transformer was only getting to about 50 volts and it should have been up around 85 volts per the schematic. The filament voltage should have been around 1.5 volts and it was way too high, around 7 volts, without the NiCad battery in the circuit. Using the schematic and with some tedious disassembly of the chassis, I was

able to isolate the mild short on the high voltage supply to a defective capacitor on the plate of the output tube. After replacing that capacitor, the high voltage was fine, but I still had to get the filament voltage down around 1.5 volts before I could put a tube into the radio.

So I used a small DC power supply to supply the filament voltage, and with some substitution with American equivalents for the tubes I didn’t have, I was able to inject an AM signal at the grid of the RF tube through the radio and get it to come out the speaker. That was great, it was a radio! Sort of.... But I didn’t have the loopstick hooked up at all, so I wasn’t able to get any tuned signals to come in from the antenna input. Even with the schematic, I was pretty lost on which of the 4 coils around the loopstick should be wired to which of the 15 or so little variable capacitors that were sticking up like a little intimidating forest of components. I supposed I could eventually figure this one out, maybe like the million monkeys at a million typewriters eventually coming up with something that could be read in a million years. Maybe with a few educated guesses I could shorten the time span.

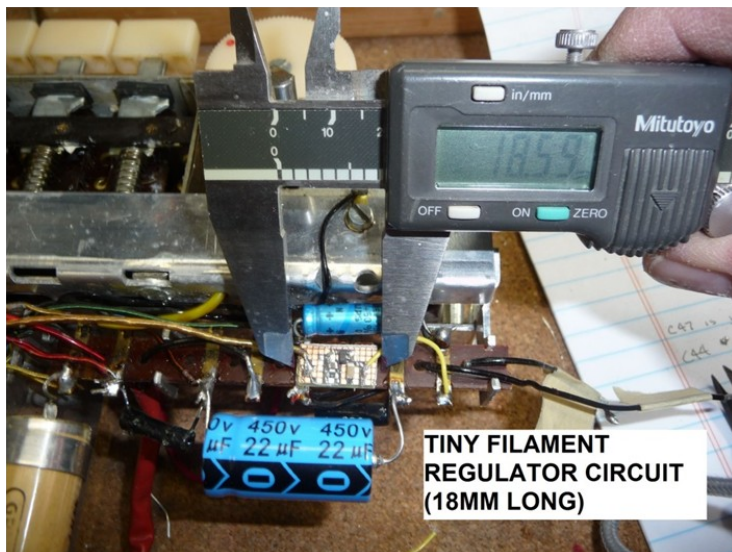
So a bit dismayed that the schematic wasn’t helping with the loopstick problem, I put that on the back burner and set off to find some proper tubes. The DK 96 was the hardest to find, but after few weeks I got what I needed. While I was waiting for the tubes I replaced all the film and electrolytic capacitors and set to work on coming up with a small regulator so the filament voltage would be 1.5 volts when running on the mains power without the NiCad battery installed.

At this point I decided I wasn’t going to restore this to run on batteries as I wasn’t going to make up a replica 90 Volt battery or find a rectangular NICAD battery to wire back inside. I decided on restoration to mains operation only. I liked the look of the original long-dead German NiCAD made by DEAC, cleaned it up and put it back inside (without wiring it up) to preserve that part of the radio. Without a real NiCad in the circuit, I needed a way to get 1.5 volts from the unregulated 7 volt transformer output. I needed something that would act like the NiCad to regulate this voltage at 1.5 Volts. So I settled on a *solid state* regulator design. I know... It’s not *authentic*. I felt a bit weird about it at first; almost like feeling guilty about not restoring something to its original configuration. But I had no time for moral dilemmas; I was intent on getting this thing to work in my near future so I got on with it. It’s the first time I’ve used a modern solid state circuit in a restoration.

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Well, besides using a single solid state diode as a substitute for a selenium rectifier. But that's really just substituting solid state (silicon) for solid state (selenium). And so I just rationalized that I was again substituting solid state (silicon) for solid state (Nickel Cadmium) to achieve the regulator function. The regulator works real well, it's tiny and hidden, and it got this radio working again.



### Back to the web...

Now I had a working filament power supply, and feeling good about having this radio *almost* working, I turned again to the problem with the disconnected loopstick wiring. I came up with an idea: I'll contact the fellow in France that has restored this radio and just ask him how to hook it up. It seemed worth a try. I went back to his website. His name is Pierre Barrat and he has a "Contact" page on his website from where you can send him an email. Simple... if you can write an email in French. In my case, it's like the old song goes... "Don't know much about the French I took..." I did take 4 years of French in high school but that wasn't helping me get going off my derriere to write him an email. (My French teacher Ms. Oliver would not be proud of me here). I went to *Google Translate* for help. For the second time in this restoration I employed a new (to me) internet tool; this time to translate my words so I could ask someone for some restoration help in another language.

Going to the free Google Translate site, (<http://translate.google.com/>) I typed out my short letter to Pierre in English, complimenting him on his great restoration website, and explaining that I was a fellow restorer who had this problem wiring up the loopstick antenna of this same model Grundig that he has. Out popped the French text in another window as I typed my letter into the translate window. I took that text and pasted it into Pierre's website form; hit the send button and hoped for the best. The next day I was really pleased when I got an email back from Pierre (in French) that had a file attachment! This was very cool! I could understand the gist of a few of the sentences, but I just went and used Google translate to do the rest. He understood my letter, and had sent me a detailed sketch of how to connect the wires of the loopstick! He also requested to send him a photo of the label inside my radio, so he could make a reproduction for his radio.

With Pierre's diagram I went to work hooking up two of the loopstick coils and soon was receiving radio stations on 2 of the bands! I was elated. I got my camera and took a picture of the label he requested, and sent it off that night with words of gratitude.



After another email exchange to help with figuring out how many turns and what direction to wrap the missing coil, I got the last 2 coils hooked up and was soon receiving signals on those bands. I mounted the loopstick securely using some rubber bands and grommets. I now had all the bands working; it picked up a lot of stations, seemed very selective, and it sounded good!

### Making it shine

Next I needed to clean up the green plastic and the brass trim. The plastic was in good shape and needed some scratch removal with *Novus* polish in a few areas. I used *Meguiar's Plast-X* polish overall as a finishing step along with some elbow grease to get it shiny. For the brass I used *Simichrome* polish which brought the trim to a nice gleam. I even touched up the gold paint in a recessed groove around the front, using some *Testor's* gold model paint with a small brush.



After putting it all back together it looked very nice and clean, showing off the sophisticated styling of the 2 tone green plastic with the brass trim and logo. However the tuning knob was missing its brass "nosecone". I dug through a pile of old knobs and found a "donor" knob that had a brass nosecone insert that luckily was almost the same size as the missing one. The donor



knob's glue was old and brittle and gave up its insert with no trouble at all. Using some contact cement, I glued the brass cone onto the tuning knob, and I was finished!



MISSING "NOSECON" ON TUNING KNOB;  
DONOR KNOB AT LEFT

I took a few photos and sent them off to Pierre, thanking him again. He congratulated me on my effort. It was a nice accom-


plishment, and it felt a bit special that I had a fellow restorer from another land pitch in and help me bring this radio back to playing again. I learned quite a bit during this effort, and now I have some more skills and internet tools to help me along as I go off and find that next radio that I'll be restoring.

### Postscript


Since I restored this Grundig, I found an impressive repository of European radio schematics and model numbers : <http://www.nvhr.nl/gfgf/schema.asp> . It is in the Netherlands (.nl domain) and not in English, but now you know how you can use Google to make it appear in English. On this site you will find this page: [Link to Grundig radio schematics page on site](#) .


Here is where my radio and all the *Drucktasten Boys* (1953 through 1958 models) reside. They are not orphans; along with them you will find listed: AutoBoy, AutomaticBoy, BoyJunior, CityBoy, ConcertBoy, EliteBoy, EuropaBoy, ExportBoy, FarmBoy, HeimBoy(HomeBoy), HitBoy, MelodyBoy, MickyBoy, MicroBoy, MicroTransistorBoy, MiniBoy, MotoBoy, MusicBoy, OceanBoy, PartyBoy, PhonoBoy, PrimaBoy, RecordBoy, SoloBoy, StandardBoy, StereoConcertBoy, TashenBoy(?), TeddyBoy, TimeBoy, TopBoy, TransistorBoy, UKWBoy, UniversalBoy, and last, but not least: YatchBoy and all his model years. Who knew that the Grundig marketing department was so creative?

**TIP:** Have a record player platter that has worn flocking? Give this a try.



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Adhesive: 8 oz., Fiber: 3 oz.

### TECHNICAL DETAILS

- Manufacturer Part Number: 935
- Weight (lbs): 0.1600

### TECHNICAL DOWNLOADS

- [Technical Document for 28035](#)

## Photos from the last meeting.



Scott Thomas was gone and Tom Zaczek our V.P. filled in, doing a great job.



Yuiry Yedidovich demonstrates his blue tooth transmitter/receiver



Tom Pouliot demonstrates his soon to be legal low power "vintage" transceiver



Dave Boyle shows of his 1954 Philco 54-9658



Wayne Russert demo's the radio he built for Tiny Town house that he restored



Tom auctions off a few radios



Rich Dennison, visitor



Dave Boyle offers MARC news letters to share



Merrill Campbell brought his wife Donna to help with collecting dues



It looks like everyone is paying attention



Tom Zaczek describes the raffle table items



It's the last item on the raffle table—  
Do I really want it?

**Hey guys, some of you have web sites with very cool stuff. Send Rich Kuberski the link to your site with a brief description and he will publish the information in the newsletter so club members can admire your hard work.**





## The Open Trunk

Member submitted advertisements



### REPAIR SERVICE:

Radio repairs for club members. Reasonable rates. Good references.

**Call David Boyle**  
**303-681-3258**

11/09

### For Sale: by Dave Boyle

Most of the following instruments have been completely refurbished, repaired as needed, and calibrated  
Most have manuals and test leads.  
Prices are negotiable so please make an offer.

1) Philco Grandfather Clock Radio ..chassis and clock only.. Completely repaired/refurbished chassis with VG .original speaker. Works great, Clock has a new motor. Ready for installation. At give away price since customer did not ever pay for the repairs. **Make offer ( cheap!)**.

2) HP 608 F VHF Signal Generator, with scope cart, also spare special tubes, and manual. **Free to a good home!**

3) Eico 5inch oscilloscope, Model 425 Completely gone-thru, new hi-voltage caps, all out of spec parts replaced,  
**NEW CRT!**, etc. \$68.00

4) Eico "Professional" VTVM.6 inch wide meter. \$45.00

5) RCA Institute RF Signal Generator All standard frequency ranges and 400 Hz audio frequency too. \$30.00

6) Heathkit TV Alignment Generator, Model IG-52. \$25.00

7) Lamda regulated power supply. 0-14Volts. Solis state, 5 VDC @ 2 amp, as an example. 2 available. \$7.00 ea.

8) Ballantine Labs. Model 321 VTVM.true RMS and p-p measurements. Rack mounting with manual. **Make offer!**

9) Philco Model 91 *complete working* radio chassis with two good speakers and a working tuning shadow meter! Original VG 12 inch speaker. **(cheap!) Call with offer.**

**Call David Boyle,**  
**303-681-3258**

01/15

Wanted: 1920's Wooden Horn Speakers and a Crosley Musicone Speaker.

Also 1920's battery sets, especially Neutrodyne sets, Pre 1930 AC Radios and a Crosley Widget Console Radio

Michael O'Leary 602-354-7011  
[moleary9@cox.net](mailto:moleary9@cox.net).

WANTED: To buy: 1948 Motorola 5A9B portable radio, Maroon color. Good condition only.

Dewey Reinhard 719-596-5516  
[deweyfly30@gmail.com](mailto:deweyfly30@gmail.com)

**WANTED:** Broadcast or recording mics, especially from 20's to 1950's.

Crosley Pup Info

NBC chimes, all eras.

**Tom Keeton**

**303-797-8073**

I have collected radios of all types for 30 years and now it is time to let them go to new homes.

Please call me for an appointment to see if any of them would fit in your collection.

I have tube radios including Tombstone, Cathedral, and Novelty etc.

I also have a large collection of transistor radios both shirt pocket and Novelty type.

Please call

303-238-1384

Thanks in advance,  
Ron Smith

**[RADIOS4US@aol.com](mailto:RADIOS4US@aol.com)**

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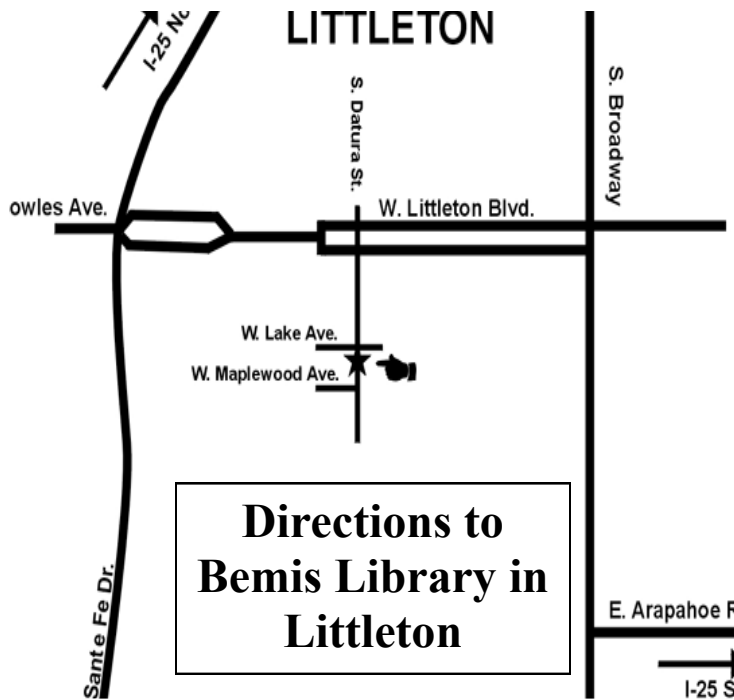
**Castle Rock, Co.**

### SUBMISSION OF ARTICLES & ADVERTISEMENTS

Classified Ads for The Open Trunk and articles of any radio/electronic or historical related subject to be published in the Flash are encouraged and welcomed. The article(s) should be submitted in Microsoft Word, RTF, or as text cut/paste into your email. Submit to Steve Touzalin by email at: [stevetou@comcast.net](mailto:stevetou@comcast.net) or by postal mail to 417 So. Queen Circle, Lakewood CO 80226.

Formatting isn't necessary, but if you do, set the font to Times New Roman, size 10, left justified. If you have graphics (.jpg files) to be inserted, please name them and be specific about how you would like them placed. We will do our best based on space limitations.

The July 12th 1:00 meeting will be at the Bemis Library in Littleton



## Directions to Miller Library in Castle Rock

From I-25: Take the Plum Creek Parkway, exit #181.

Turn East onto Plum Creek Parkway.  
Turn Left (North) onto S. Wilcox Street  
and continue north 2 tenths of a mile.

The Philip S. Miller Library is on the east  
side of the street at 100 S. Wilcox St.

The building is towards the back of the  
parking lot, past the Dairy Queen.

Topic for this meeting

Prepare for Auction/Picnic—Find a Volunteer to continue with the Newsletter



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