

Winter 2006- 2007 Newsletter

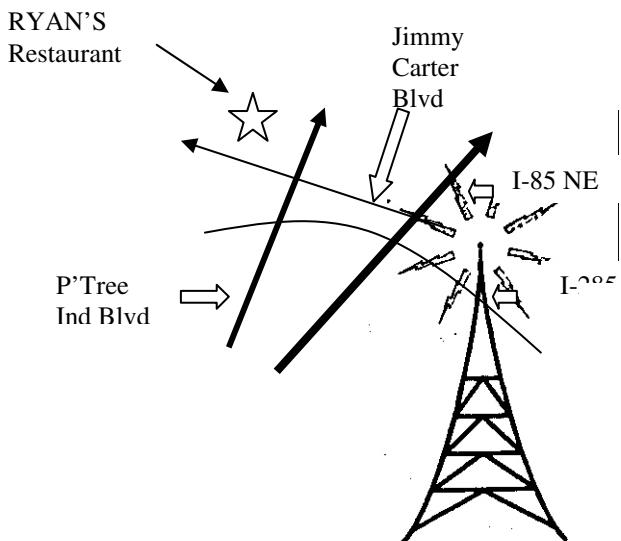
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Caution: Performing repairs on radios could be dangerous. SARS assumes no responsibility for accidents resulting from any information contained in this web site or newsletters.

JOIN SARS! Dues are \$12 per calendar year. Join after June 30 and dues are pro-rated to \$6.00 for the remainder of the year. Send payment to the SARS address above.

SUPPORT YOUR CLUB!

The Southeastern Antique Radio Society meets on the second Monday of each month at RYANS Restaurant, 7045 Jimmy Carter Blvd. Norcross, GA 30093. Meetings start at approximately 6:30 PM. Most attendees arrive early and eat before the meeting. In addition to club business, meetings have a "Show and Tell" session where members bring in items to display and discuss. All are encouraged to participate in this activity. See the monthly schedule elsewhere in the newsletter and the map below.

**ANNUAL DUES ARE
NOW PAYABLE! ONLY \$12!
JOIN OR RENEW TODAY!**



SARS RADIO CLUB

Winter BULLETIN February, 2007

Check out our website! <http://www.sarsradio.com>

GENERAL INFO

**Southeast Antique Radio Society
113 Laurel Ridge Drive
Alpharetta, GA 30004**

Club Officers:

President: Rich Rodgers

Vice President: Les Cane

Publicity & Membership: Bob Niven

Secretary: Joseph Simonetti

Treasurer: Tom Knutson

Newsletter Editor: Mark Palmquist

Webmaster: Rich Rodgers

**Next Swap Meet: February 17, 2007 at 8:00 AM at the DoubleTree Hotel,
Barrington Ballroom, 1075 Holcomb Bridge Road, Roswell, GA 30076
Telephone (770) 992-9600**

Check <http://www.sarsradio.com> for details. See directions on Page 8.

Next Meeting: Monday, March 12, 2007

RYANS Restaurant Norcross 6:30 pm (Formerly Fire Mountain)

Discussion Topic: Jim Delprincipe – Building a Radio Transmitter

Show & Tell: Test Equipment and Department Store Radios (Silvertone, Airline, Truetone, Firestone, etc.)



Do-it-yourself GLASS DIAL SCALES

By Mark Palmquist

Three times in the past year I have talked to radio repair customers who have purchased radios from on-line auctions and had them shipped by mail or truck. In each case, the seller did a marginal job of packing and the chassis/dial/knobs or whatever shifted in such a way that a beautiful multicolored silk-screened glass dial scale was broken. The saddest case was Fairbanks Morse 8A that has a stunning dial with an elliptical glass dial cover. The others were a huge Grundig table radio and a Stewart Warner "Magic Dial". On another occasion I was cleaning a filthy one-color dial scale on a Grunow console and accidentally got some water on the water-soluble paint. Oops! What am I gonna do now? A search of the only remaining glass dial scale supplier, Radio Daze (who recently acquired the dial scale business from Rock-Sea Enterprises showed no availability of any of the needed replacements. I also visited some silk screening places who could do the reproductions but the cost for artwork and multicolor screening for a one-off item was way too expensive, and most were set up only to do t-shirts.

One of my volunteer tasks as our church is to design awards for deserving parishioners, which occasionally puts me in contact with the talented and creative folks at the local trophy shop. Most trophy shops now have laser engravers, commonly used to engrave wood or acrylic plaques. I asked if they could somehow engrave on glass or create a mask that would allow spray-painting the different colors on the glass from the reverse side.

Case 1. The Grunow Dial Scale

In the case of the small Grunow dial scale, shown below which had only one color (white) the shop asked me to make a black-on-white drawing of the desired artwork at actual size and they would try to scan it onto the glass.

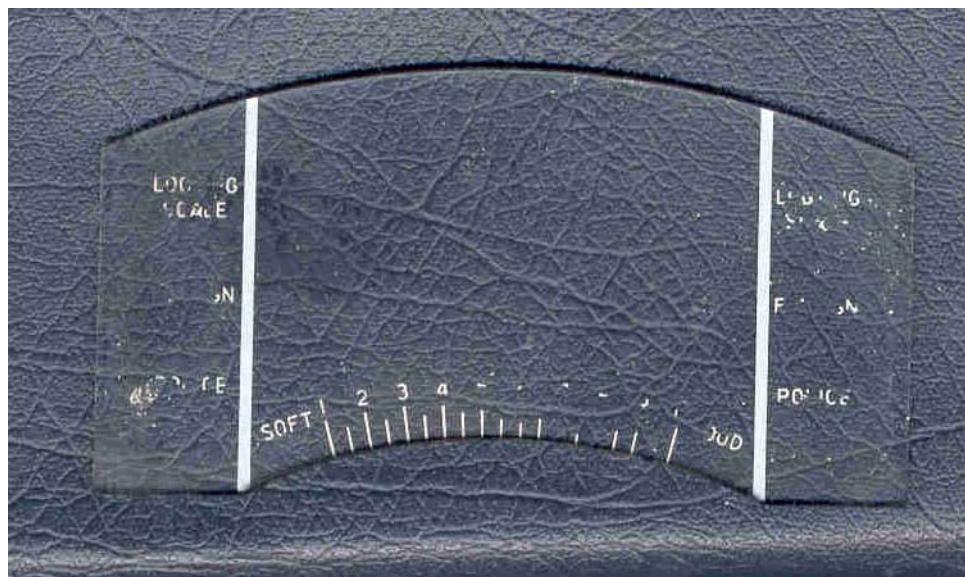


Figure 1 Small Grunow Dial Scale - One Color

The trophy shop recommended using “Corel Draw X3” software for several reasons. First it is vector based, meaning that it outputs a file that will allow their laser to precisely trace the outline of the letters, rather than outputting a bitmap file that would have to be scanned, resulting in “jaggies”. The second reason is that it can take a bitmap file and convert it to a vector file. The third is a feature called “fit text to path” that makes it easy to wrap letters and numbers in a circle, a useful feature for round dial scales. The fourth is a layer capability that enables one to put a semitransparent picture of the old dial scale on the screen and draw right on top of it so that the features are in the right place. The picture is suppressed when exporting the finished artwork.

Well, I didn’t want to lay out the \$400 bucks for Corel Draw X3 right then but did put it on my Christmas list. Since this was a simple task artistically I did some manual drafting and cut-and-paste with word processing software to make a trial artmaster for the Grunow dial. It was the same technology we used in laying out the high school yearbook in 1964 except that back then we used rub-on letters to make fancy text. The first artmaster wasn’t bad, as shown below: The imperfections made it look a bit like silk screening.

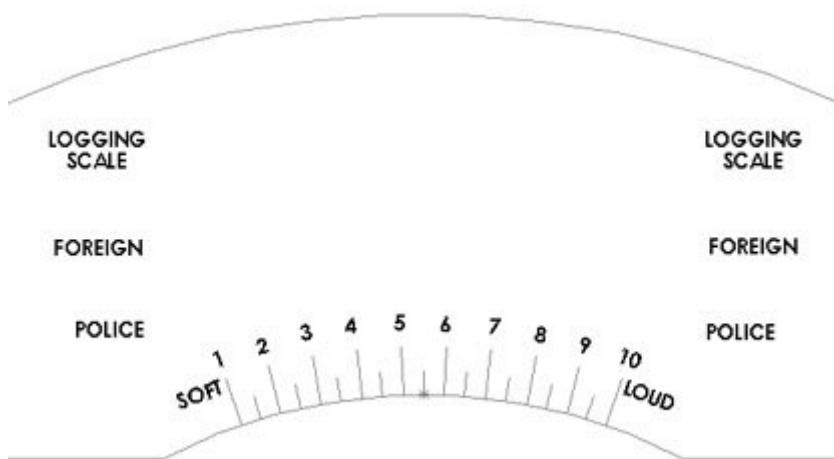


Figure 2 Trial Artmaster made with skills learned in high school.

Fortunately I didn’t break the original glass, so I cleaned off the remainder of the paint and took a scrap piece of glass, the original glass and the artwork into the trophy shop. They simply lined up the artwork with the glass and turned the laser loose, etching the letters (in reverse!) right onto the back of the scrap glass, shown below. They went slow at low power, fearing that the high temperature gradient of the laser might crack the glass. Once they were satisfied with the power settings, they etched the pattern into the original glass. It looked every bit as good as the original, and in 20 years or so if it needs cleaning, water won’t wash away the letters!

Note that this dial scale was made simply by placing the artwork on a scanner and dithering a detector that turned the laser on- and off- as laser scanned back and forth relative to the glass.

When the replacement scale was put in the radio, it looked darn near perfect. The trophy shop charged \$20 to run the job. The price was reasonable, considering the time and the capital outlay for a \$15,000 laser engraver.

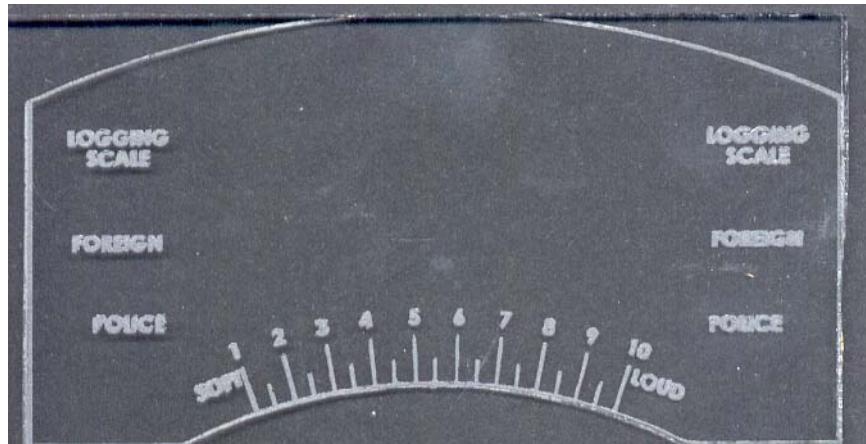


Figure 3 Practice Glass Etched with the laser-scanning method.

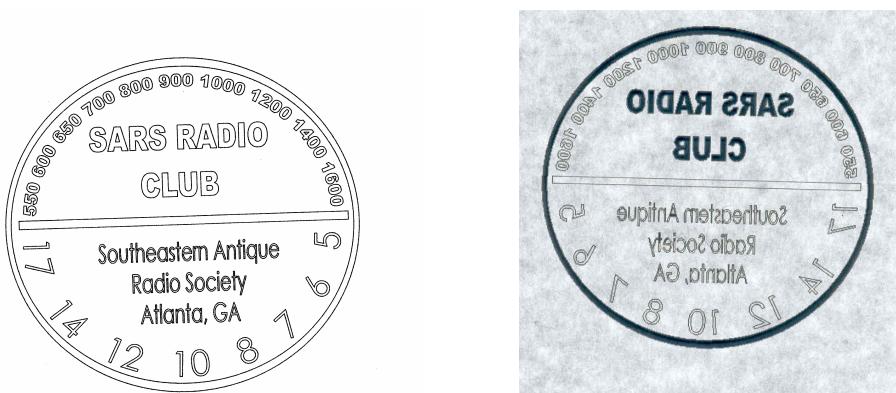
Case 2. Making a Multicolor Dial Scale

One day I had a flash of intuition that might result in making a neat multicolor dial without much cash outlay from but requiring a “labor of love” mentality. Why not put a layer of masking tape over the glass and use the laser to cut out the outlines of the letters and lines. Then I could peel off the tape where I wanted the paint to go and brush or spray the letters and lines onto the glass. After painting, the rest of the mask would come off and the result would be a multicolor dial scale.

To test this theory I made a bogus dial scale using Microsoft Word Art to make some numbers and letters along a curved path. It looked like the left picture in Figure 4 below. The trophy shop needed bitmap files so I ran it through the scanner. It’s got jaggies but I was only looking for proof of concept for the masking tape method. Note that the letters and numbers are printed in “outline” form.

I gave the trophy folks a disk with the bitmap file along with a piece of scrap glass. They put some masking paper on the surface of the glass and cut out the boundaries of the letters. On the right below is an image of the prepared glass. It was easy to lift the letters out with a good pair of tweezers. The smaller characters are a bit too rough around the edges, because again this was bitmap and not vector processing. Here is what it looked like after lifting the “Sars Radio Club” letters.

Figure 4 Scanned artwork and laser-cut reverse mask with some letters lifted



Taking a closer look at the bitmap mask in Figure 5 below, it is clear that vector artwork will be needed to give good clean edges:



Figure 5 Detail showing imperfections of bitmap artwork.

I tried masking and spray-painting the bogus dial with whatever I could find on the shelf and it is clear that I need to get the correct paint for glass. More research on that to come. Here is a scan of the prototype dial scale with a black background. One annoying task is picking out the little bits of masking tape that remain in the middle of closed letters and numbers like "A" and "8".



Well, Santa left me a package with Corel Draw X3 under the tree so I gave it a try to get the knack of laying out the artwork, using a broken dial scale as a guide. Below is a detail of a Stewart Warner dial scale with Corel Draw vector artwork overlaid on an image of the original broken dial scale. The layout is substantially sharper than the original silk screening, so I expect that a repro scale will look stunningly clear when properly painted over a clean mask. The fuzzy numbers in the back e.g. the "14" circled are the original silkscreen and the clear stuff in the front is the Corel artwork.

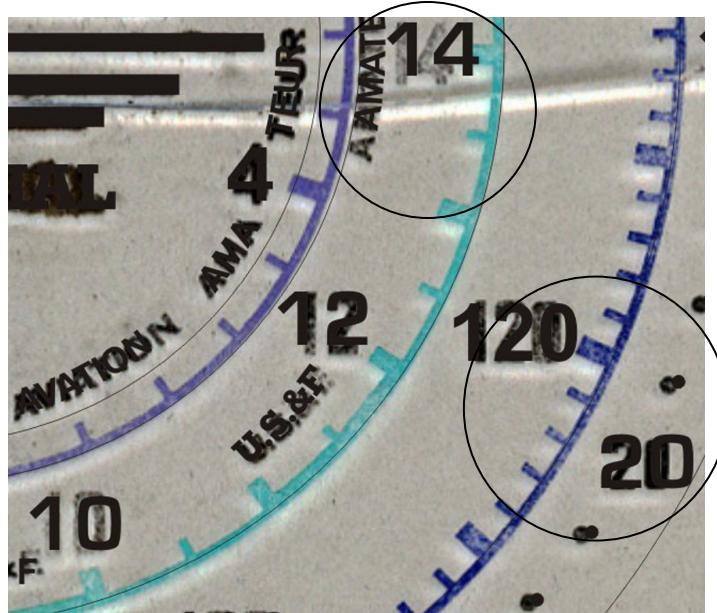


Figure 6: Image of Stewart Warner Dial Scale overlaid with Corel Artwork

It will take some time to figure out how to reproduce all the little tick marks and other details. Fortunately, Corel Draw X3 also has a feature called “step and repeat” that enables one to easily make a linear or circular array of identical features. For example, there is a circular array of 60 small dots that make up a log scale on this dial scale. It was fairly easy to overlay them and get them close to the original dots using the “step and repeat” function. See the lower circled area around the “20” in Figure 6 above. Since the original artwork was probably laid out manually by a graphic artist or draftsperson back in the 1930’s, the it might be the original that is slightly askew.

Below is an image of the entire dial. I hope to complete this task sometime soon, but I thought it would be good to publish this so graphic artists with actual talent will contact me and tell me that I’m an idiot and there is a much easier way to go about making a repro dial scale! Here is an image of the entire dial, showing the progress so far. I hope to show a picture of the completed full color dial scale in a future issue of the newsletter. Corel also has a “wireframe” display mode that will hopefully provide a file with only an outline of the letters and lines.

If you want to make 100 dial scales, this process would be way to expensive. If you want to make only one and have some “labor of love” time on your hands, you might want to give it a try.

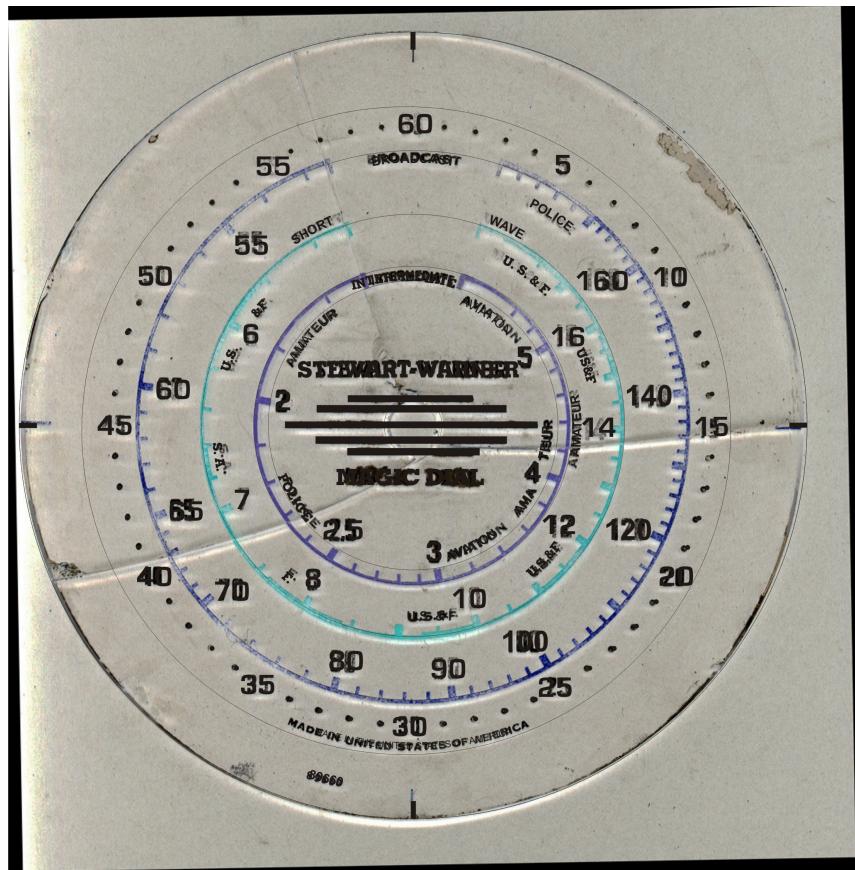


Figure 7 Scan of broken dial scale with partially complete Corel Draw artwork overlay.

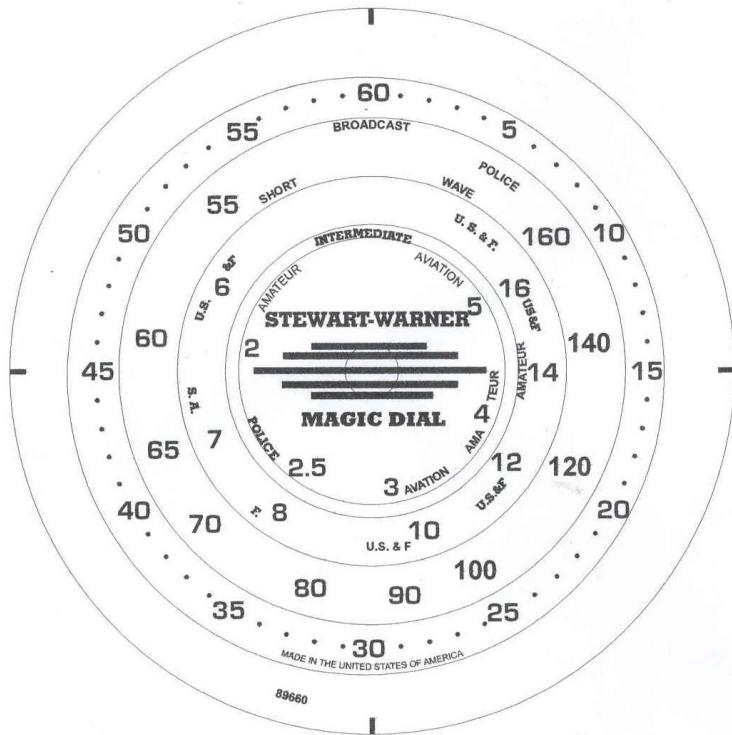


Figure 8 Scan of partially complete repro graphic layer of Stewart Warner Magic Dial Scale

SARS Meeting Dates for 2007 - Mark Your Calendars!

Date	Show & Tell Topic	Meeting Topic	Speaker
Feb 12, 2007	Transoceanics and Clones	Basket Case Radios	Les Cane
Mar 12, 2007	Test Equipment and Department Store Radios	Building a Radio Transmitter	Jim Delprincipe
Apr 7 2007	Visit Frank Lindauer's Home	Frank's Stuff	Frank
May 14, 2007	Bakelites, Bakelites, Bakelites	TBA	TBA
June TBA	Summer Picnic at Rich and Teresa's Home	TBA	TBA
July 9, 2007	Coin Operated Radios Phonographs, Radio Gadgets	TBA	TBA
Aug 13, 2007	Military Radios, Headphones Microphones, Antennas	TBA	TBA
Sept TBA	Meet at John Wynn's Home	TBA	TBA
Oct 8, 2007	Transistor Radios, TV's Tape Recorders	TBA	TBA
Nov 12, 2007	"S" Radios Sparton, Steward Warner etc	TBA	TBA
Dec 10, 2007	"F" to "P" Radios Farnsworth to Packard Bell	TBA	TBA

Upcoming Radio Events

Date	Event	Location	Contact
Feb 12, 2007	Monthly SARS Meeting	RYANS Norcross	http://www.sarsradio.com
Feb 17, 2007 8:00 am	SARS Winter Megameet	DoubleTree Hotel Roswell	http://www.sarsradio.com
Feb 24, 2007	Dalton Hamfest	Dalton, GA	http://www.w4drc.com
March 17, 2007	Kennehoochie Hamfest	Marietta, GA	http://www.w4bti.org
March 23-25	Spring Meet in the Carolinas	Charlotte, NC Sheraton Hotel	http://www.cc-awa.org

**Directions to DoubleTree Hotel, 1075 Holcomb Bridge Road,
Roswell Swap Meet Feb 17, 2007 8:00 AM
~~ Barrington Ballroom ~~**

**From I-285 North of Atlanta, Go NORTH on GA-400 to Exit 7B
Exit 7B WEST toward Roswell, Turn LEFT onto Dogwood Road
Go to top of hill and turn LEFT into hotel parking lot**

**From GA-400 SOUTH, take Exit 7
Exit 7 WEST toward Roswell, Turn LEFT onto Dogwood Road
Go to top of hill and turn LEFT into hotel parking lot**