

VINTAGE RADIO

By JOHN HILL



Restoring the dial mechanism

Almost without exception, the dial mechanism requires attention when restoring an old radio. The dial is usually the focal point of the set, so every effort should be made to restore it to original condition.

There are three basic types of dial drive: cord, gear and friction. All give their fair share of trouble but can usually be restored to as-new condition with a little care and patience.

With the cord-drive type, the cord either rots or wears through, thus disconnecting the tuning knob from the dial. The gear and friction drive types are frequently made inoperative by corrosion, wear and an accumulation of dust and grime. These problems must be rectified if a dial is to work smoothly once again.

The best approach to any dial problem is to completely strip the mechanism and thoroughly clean it. A common cause of stiffness in the mechanism is dried out grease on the moving parts, particularly on the track that the dial pointer slides along. Unless the dial unit is properly cleaned, this stiffness problem will remain.

Cord dial drives

In the case of cord dial drives, a sticky dial pointer may cause the cord to slip on the drive pulley. Proper cleaning really is important!

Cord dial drives can vary from the simple to the annoyingly complicated. Some have cords and pulleys running everywhere. One particular model Radiola has four pulleys, with the cord making four passes across the front of the set. This dial mechanism uses at least a metre of dial cord.

The dial cord itself is a rather special piece of string that has little or no stretch in it. This is an important characteristic because if the dial cord stretches with use, the dial pointer will gradually shift its relative position on the dial.

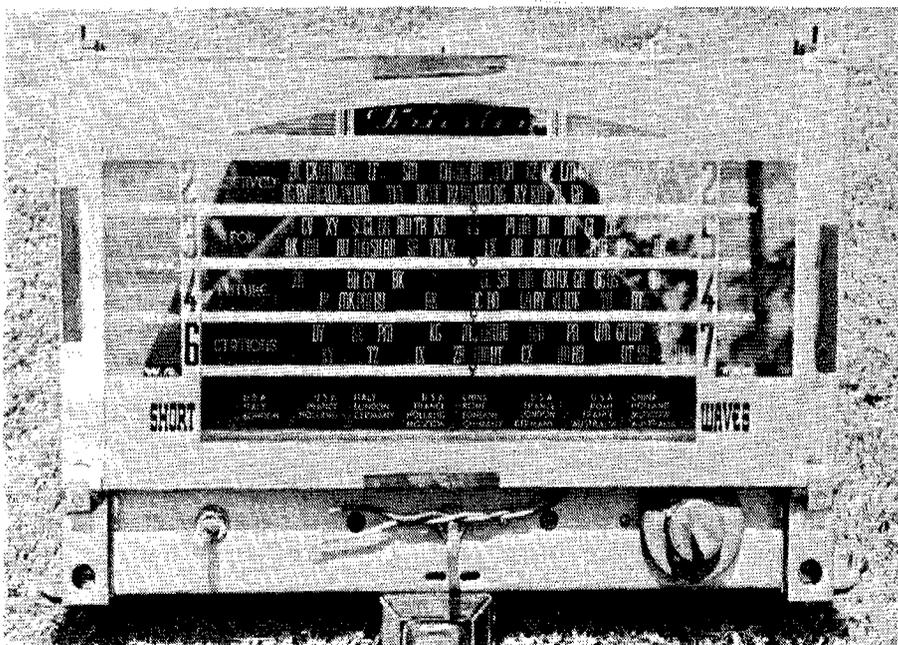
Unfortunately, genuine dial cord seems to be unobtainable these days and one has to make do with substitutes. Although string can often be used for the job, the results are not usually very satisfactory. Dacron fishing line is by far the most suitable substitute for dial cord and may well be superior to the original cord. Many sports stores sell Dacron fishing line and a cord of about 0.5mm diameter is ideal.

Perhaps the best advice one can offer regarding the restringing of cord dial drives is to make a sketch of the cord layout before removing the old cord. Such a sketch can be of great assistance and makes the task of replacing a dial cord much easier.

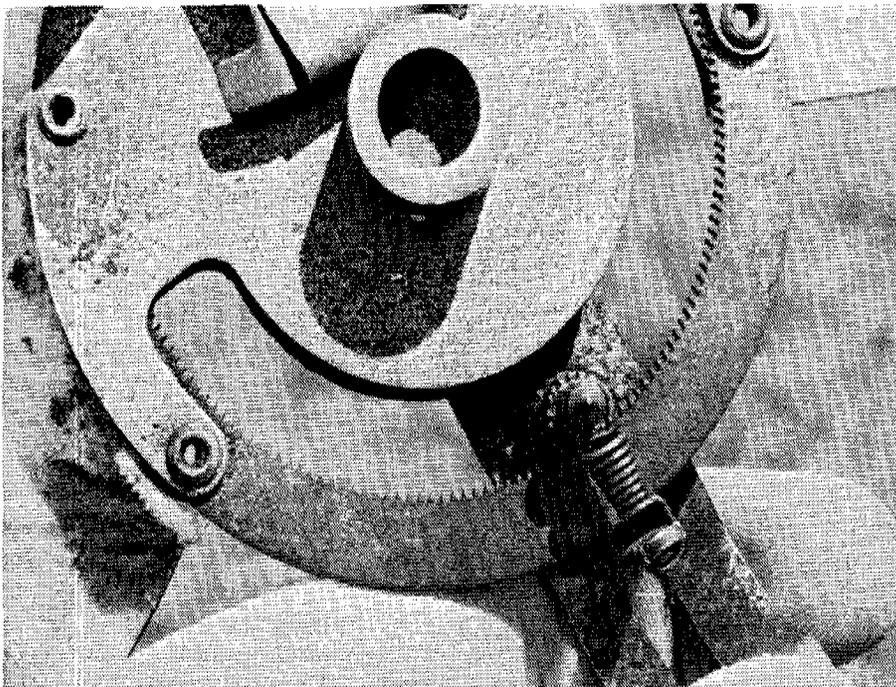
Gear driven dials

Gear driven dials usually don't give any trouble that a thorough clean and a few drops of oil can't cure, although there can be a few minor rumbles in the gear train.

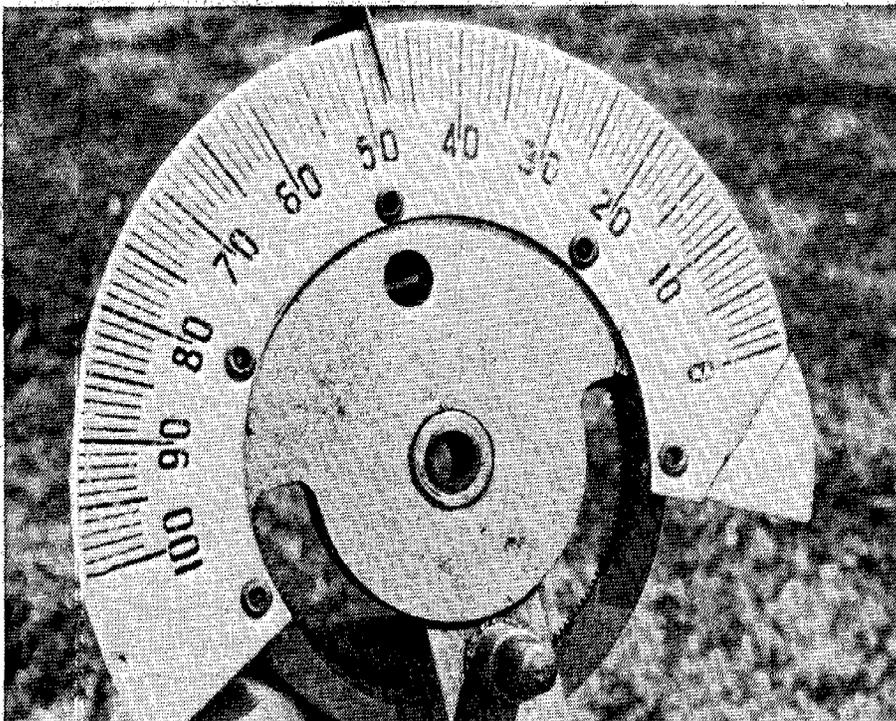
Most gear driven dials have a backlash eliminator of some type or other. This usually take the form of a split gear that is sprung in op-



This huge full-width dial is from a post-war Kriesler console radio. The black and white photograph does not do it justice for it is one of the multi-layer types with a 3-D effect. Note the cast iron flywheel attached to the tuning spindle.



Gear driven dials don't usually cause much trouble but should be given a thorough clean-up and lightly oiled. The spring on the pinion shaft acts as a backlash eliminator.



This numbered gear driven dial is from the early 1930s and requires a lot of work to restore the lettering to original condition. Dials with station markings took over after about 1935.

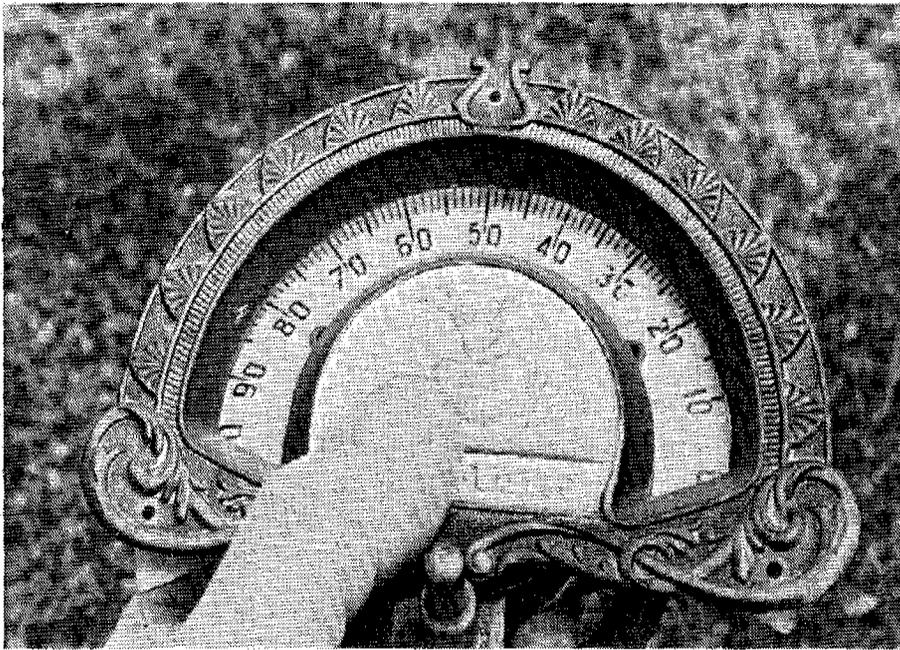
posite directions. When such a gear meshes with a normal gear there is no backlash at normal operating pressures.

It is important when restoring a gear driven dial mechanism to make sure that the backlash eliminator is functioning properly. It could be locked up solid with dust or corrosion. When this is the case the eliminator must be freed up if it is to work as it was designed to — smoothly and without backlash.

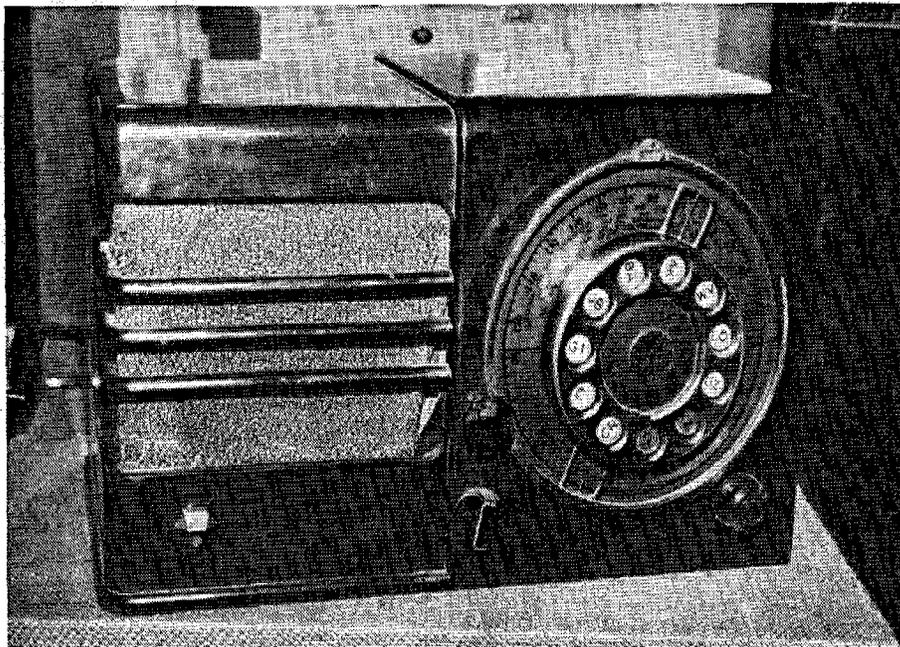
Friction drive dials

On the other hand, friction drive dials can be very troublesome and quite difficult to repair.

Most friction types consist of a large semi-circular disc driven at its periphery by a pair of small spring-loaded driving flanges or washers. These washers eventually wear and this causes slip in the drive mechanism. Most old radios with friction dials will have slip problems somewhere or other.



They don't make them like this any more — an ornate escutcheon from the early 1930s. If only the rest of the set was still attached.



A "dial-a-station" dial from the late 1930s. Like the pushbutton dials later used in car radios, these novelty tuning devices gave trouble and were not popular due to their additional cost.

Once again, a thorough clean of the mechanism is an important first step and could free up the works enough to overcome the slipping problem. Nothing could be more detrimental to a friction drive mechanism than to force it to operate while all the parts are clogged up with dirt and corrosion.

The previously mentioned driving flanges are usually the source of a slipping dial problem. If the flanges have not worn too much, they can be reversed and the dial will be good for years to come.

However, in many instances, the

amount of wear both on the driving flanges and the semi-circular disc doesn't allow such an easy repair. When this is the case, a pair of slightly larger flanges are required and these will grip the worn disc in an unworn section and the dial will work once again.

Friction drive dials often require considerable modification to bring them back to working order again. If you have access to a lathe, you can turn up special driving flanges of any size as well as doing other jobs that can get a radio restorer out of trouble.

The dial glass

So much for the dial mechanisms. Now for the dial itself — ie, the glass plate with all the stations marked on it. There are several variations of the theme.

Vintage dials vary considerably depending on their age. Early mechanisms (up to about 1935) usually have a numbered dial graduated from 0 to 100. The dial is usually mounted behind a small escutcheon (dial surround or trim) with a pointer in it. The numbered dial itself is made of translucent plastic material similar to thick celluloid and will probably be backlit by a single lamp.

Numbered dials were superseded by dials with the stations marked in their appropriate positions. The tuned station was indicated by a rotating or straightline dial pointer. These early glass dials were rather plain but that was soon to change.

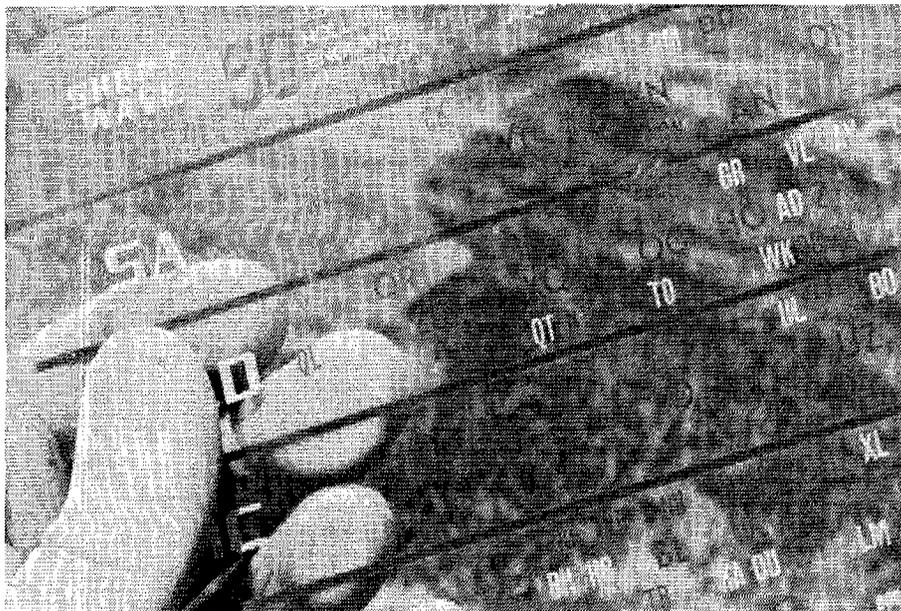
Later glass dials made use of colour and were much more attractive than earlier dials. The stations and other markings were placed onto the glass with a multi-coloured transfer so it's important to treat the glass with great care when cleaning it.

During the late 1940s and early 1950s, the glass dials were replaced with plastic dials. These were very similar to the glass dials except for the use of acrylic sheet instead of glass. Unfortunately, acrylic sheet is inclined to craze and crack after 30 years or so and a radio of this type frequently shows its age for this reason.

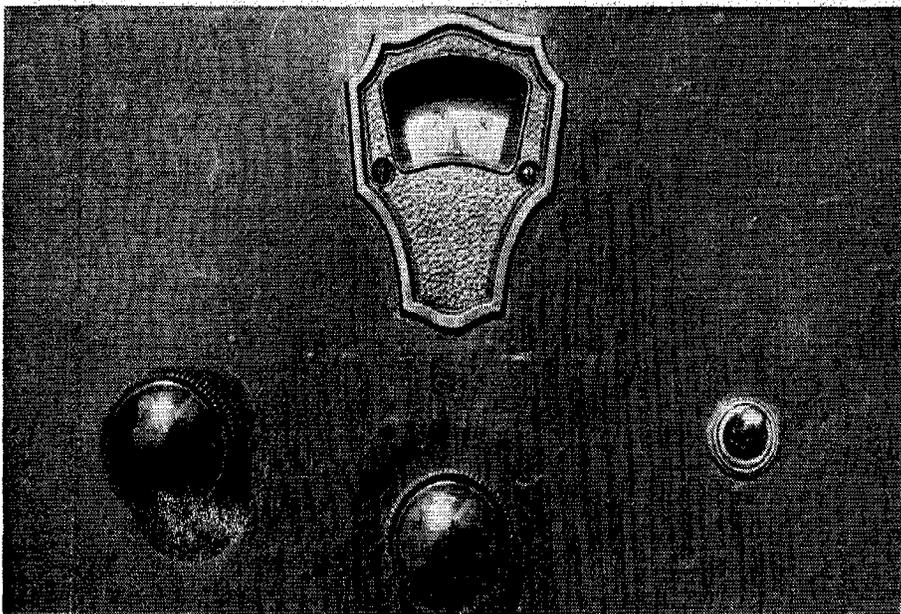
By far the most appealing dials are those of glass. Provided they have not been broken, they will look good for a long time.

Some of the glass dials from the 1940s era were most spectacular. In some instances, they consisted of multiple layers of glass with various parts of the dial printed on different sections of glass. When all the layers were assembled, this technique produced a very pleasing 3-D effect where some markings of the dial seemed to stand out in front of other markings.

It is obvious when looking at such elaborate dials that the dial was meant to be the focal point of the set. Restorers should keep this in



Glass dials should be cleaned with care as some station markings can wipe off quite easily. If the markings are fragile, the best approach is to clean the glass with a moist cotton bud. It may even be safer not to clean the inside surface if it is reasonably clean.



This view shows a numbered "peep-hole" dial on a set from the late 1920s. The dial was made of translucent material and backlit with a single lamp.

mind. If one goes to the trouble of restoring an old radio, then every attention should be given to the dial in order to make it look as near new as possible.

This means that everything should be clean and tidy and that includes the dial glass, its background, the pointer and the dial surround (or escutcheon).

Cleaning the glass

Cleaning the dial glass can range from an easy job to a most difficult one depending on how well the station markings are attached to the glass. Some dials are so tough they can be washed under running water and dried with a towel

without doing damage. But do this to other dials and all that will be left is a sheet of plain glass.

The best approach is to test clean the dial on an outside edge that is out of view when the dial is installed. Be careful — some dial markings are so fragile they can be removed with a single wipe.

It is often the older, more valuable sets that have these super delicate dials — so don't say you weren't warned. Believe me, it's a rotten feeling when you discover that the station call signs have relocated themselves onto your cleaning rag.

Perhaps the best way to clean some of these touchy dial glasses is

to gently dodge around the markings with a moist cotton bud. It may even be safer not to clean the inside surface if it is reasonably clean.

Many dials are mounted on thin rubber strips which become hard and brittle and usually break up when disturbed. Bicycle tube rubber is an easily obtained replacement. If the glass is remounted on fresh rubber strips, there is less likelihood of breaking the glass due to uneven pressure.

When replacing a dial glass make sure that it goes back in the correct position in relation to the cabinet. Few things look worse than a crooked or poorly positioned dial.

Dial pointers can always be brightened up with a touch of paint. Red, black and white seem to be the most common colours. Once again, a simple job such as repainting the dial pointer will give the dial that new look and make the set more presentable.

The dial's background is also an area that can require attention. This can vary from a simple wipe with a damp cloth to a dust down with a fine brush, a coat of paint or replacing a sheet of coloured paper. Once more, it is these little details that make all the difference.

To finish off the job, the escutcheon will need to be cleaned and polished, whether it be metal or bakelite. Cleaning with hot soapy water and a nail brush should be sufficient in most cases.

A bakelite escutcheon can be polished by giving it a good rub down with "Brasso" or some other fine abrasive metal polish. The Brasso treatment will restore bakelite and other plastics to new again. The fine abrasive action of the polish removes surface oxidation and brings up a good lustre.

Brasso is also a useful cleaning and polishing agent for those moulded cellulose acetate dial "glasses" that are common on many old radios. Great care needs to be taken with these old dial covers because after 40 years or so they become very brittle and are easily cracked or broken if handled roughly.

Next month's vintage radio topic will be on IF transformers and coils.