



The Phonographic Record

Journal of the Vintage Phonograph Society of New Zealand (Inc.)
A society formed for the preservation of recorded sound

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A recent meeting at Oxford gave us the opportunity to admire the way Roger Brown has set up the Society's machine collection as a special feature of the Oxford Museum. Prominent in the photo are our HMV 163 Reentrant, Edison Amberola 30 on Woledge pedestal and the Dulcephone with its impressive spun brass horn. We built up the collection by purchase and donation back in the 1970's when we had a display at Ferrymead Historic Park. After we left Ferrymead the machines spent some time in my garage until the opportunity came up to place them on long term loan at Oxford where they are well looked after and played under Roger's supervision.

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For your information

I must apologise for the extreme lateness of this issue due to a combination of reasons, personal and otherwise. Late in 2013 Jill Green changed the focus of her business and told me that she would no longer be able to set up and print our magazine. This was a blow as I, and Walter before me, had enjoyed working with her. Bethany and Sarah at Lincoln Digital Print and More! Ltd, which is just round the corner from my home, have been very helpful getting this issue to the printing stage and printing it so I hope to get back on track and produce another magazine soon to catch up.

At our April 2014 meeting we had a long overdue discussion on the Society's parts supply, prompted by my giving notice that I will be "retiring" from storing and packing the parts. Given that our local active membership is now down to a handful of people, this alone would set us a challenge but it is just one aspect of a situation which is becoming more and more of a problem. We are out of many popular items and can't get new stock, while in this digital age almost everything on our list can now be obtained somewhere else. So we have decided to close down the parts operation, starting with the special sales list accompanying this issue. We appreciate that this will come as a shock to many members but we have to face reality.

Gavin East
Editor

The Klingsor Restoration

By Stephen Austin © 2014

I have been a collector of gramophones for over 15 years now and have been a member of the NZ Phonograph Society for many of these years. My first major project I undertook was an Edison Model D Standard. My friend Richard provided the base machine for myself to restore and the rest was history. I became a collector of gramophones and phonographs. The cost of purchasing complete and working machines was simply out of my reach so I went into restoration of cheaper, derelict machines.

It was again Richard who found and gave me the outer case of a Klingsor gramophone and so began another project which took some 3 years to complete. As you can see it was an empty shell, we believe the box was used later as a shoe cleaning box.

The main part to produce was the lyre. Fortunately, some WA members have Klingsors. So the CSI team began to examine and when one gets involved in these machines you soon realise every machine is different in some way. The lyre for this machine is more compact than in the larger models. A lyre was fashioned and carved from wood then shortened and a resin copy made.

This went to the foundry and a metal cast was poured. This took some 6 months. The casting was rough so a lot of cosmetic sanding, filling etc was undertaken. The frame holding the lyre had a number of chambers and it was important to reinforce the areas where the 18 piano strings applied pressure. All measurements were taken from a larger version and then scaled back.

A scaled drawing was first done before building the frame. The white wood was beech and this was sourced from a guitar maker. The internal horn was fashioned from 3 parts and the motor and tone arm were found in England. Postage shall we say was overwhelming to send to Australia.

One of the most time consuming items was unraveling the wire from the thicker guitar strings as they were only thin wire until they reached the fret. The music shop thought I was mad in purchasing all their E strings. The metal spacers on the fret were gramophone needles hammered into the wood.

I was fortunate to have the original colouring on the back of the doors as the outside box was bare wood.

This Klingsor is very dark in colour compared to other machines I have seen and it has an art nouveau style.

The machine was certainly a labour of love but it is very satisfying to see the end result.

Cheers... Stephen

And congratulations on a very challenging restoration - Ed.

ROSENFELD COIN OPERATED PHONOGRAPHS

By Mike Tucker © 2014

Rosenfield coin operated phonographs are quite rare in Australia so here is a brief description of their phonograph products.

A Rosenfield brochure claims that the business was established in 1890. However the Company was listed as newly established in the New York Times of September 16, 1896, which stated "The Rosenfield Manufacturing Company of New York City, to manufacture toys, tools, and mechanical novelties; capital \$10,000. Directors William W. Rosenfield, Bertha Rosenfield, and Francis T. Gribbins of New York City". The brochure states that a large variety of coin operated amusement machines were produced and that "Over 5000 Rosenfield Coin-slot Talking Machines and 15,000 Rosenfield Picture Machines are in use".

ROSENFELD CLASS M/E

Information from another Rosenfield brochure indicates that there were approximately 650 coin operated machines using the Class M Edison motor. There were also some Class E (110 volt) Edison motored machines made. At this time I know of only three complete Class M machines in Australia and the USA and one Class E machine. This type of machine is shown at Illustration 1.

These machines had the Edison patent plate moved to the front of the topworks and an individually numbered small Rosenfield Patent plate on the front right of the deck.

ROSENFELD AZ

These machines used a more modern styled cabinet and used a Columbia AZ mechanism. The coin mechanism utilised either DC or AC motors and these motors also wound the AZ spring motor at the end of the cycle via a clutch system.

It is interesting that a brochure provides an explanation for the use of the Columbia AZ wind-up mechanism in the later coin operated phonographs - "Our Talking Machine uses any standard cylinder record, is operated by a spring motor, automatically rewound after every reproduction by an electric motor, and can be connected to an electric circuit, either direct or alternating. The reproduction being given by a spring motor, insures uniform speed, an essential feature. The electric motor is only used to rewind the spring motor and return the reproducer, which it does in four seconds, using electric current for that length of time only, and does not operate the Talking Machine, the fluctuations in voltage of the current in no way affecting the talking

Machine, as in other makes of machines, where the electric motor is used to drive the record mandrel directly, during the entire reproduction, using 30 times more current than the Rosenfield Talking Machine”.

Only two of these machines are known in Australia and it is believed that these were part of a batch imported for the Melbourne Exhibition (1907?). It is relatively common in the USA. This type of machine is shown at Illustration 2.

ILLUSTRATED SONG MACHINE

This machine was an inspired combination of the well established Rosenfield stereo viewer with the AZ based coin operated AZ phonograph.

This required a different cabinet, with the phonograph mechanism in the lower section and the stereo viewer at the top.

This appears to have been a popular and long lasting machine as shown by the number of cabinets and surviving machines, with a high serial number known of 3703.

This machine is shown at Illustration 3.



Another view of the Society's machine collection at the Oxford Museum

President's Report 2013

By Robert Sleeman

On this the fourth Monday of September 2013 I am pleased to present my President's report to the 48th Annual General Meeting of the Vintage Phonograph Society of New Zealand. This report follows the same format as previous reports and is an overview of the Society's affairs in the last twelve months.

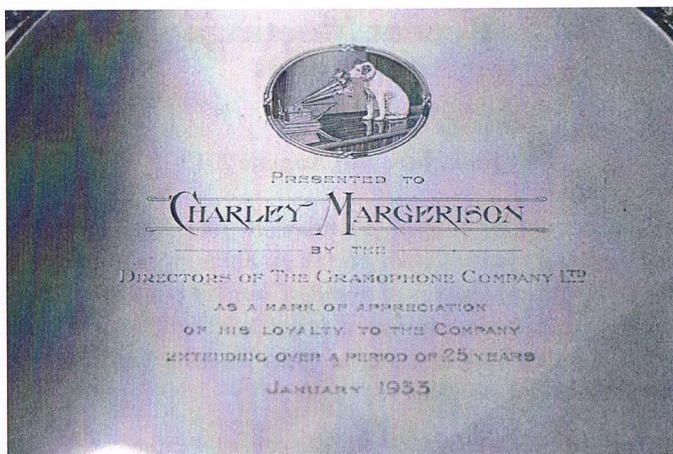
Having been absent for health and travel reasons at various times of the year, I have missed some of the meetings but have kept up with Gavin's reports on them and believe they have been successful, including visits and visitors. Over the years, thirty plus would you believe, of my membership, I have seen many changes in the Society, one of the most successful being the move to members' homes for meeting instead of formal meetings in rooms and halls. Membership has very slowly declined over the years as we all grow older with very few young enthusiasts to take our place.

Our hobby has become a retirement interest for so many of our members and machines with any kind of rarity have become more expensive in relation to less unusual varieties. This is in my opinion because long time collectors are now prepared to pay top dollar for items they have not been able to acquire, in the belief that they may not be able to find them in their remaining lifetime. Consequently cheaper machines have become cheaper and conversely more exotic ones have rocketed in price.

Our parts supplies and stock have been steadily declining to the point where in my opinion we may have to take many parts off the stock list as our suppliers with the skills are all at retirement age and are still dealing with their earthquake problems. However I do notice that many parts we produce are now being made overseas although quality and price may not be in the same league as ours.

Thanks must go to all the Christchurch and other members that have contributed to the success and longevity of the Society. We must thank those unseen members such as Shirley McGuigan as Secretary for her voluntary work which often goes unnoticed but without which the Society could not function. Every member of the Society in some way is invaluable, even those whose membership contribution alone helps the running of the Society. I could list all those who equally help in the Society's running but must particularly mention David Peterson and Gavin East, our youngest local active members (believe it or not) for their contribution, David for his organisational and methodical approach and Gavin for his many hats now including the magazine.

Thank you for giving me the opportunity to be President for the last twelve months although literally the hardest part was to write this report! I'm sure the Society will continue in some form or other for years to come in its aim to preserve and foster the machines and sounds from a bygone era.



Sterling silver doesn't usually have much to do with gramophone collecting so Robert Sleeman was surprised to find this 1933 Gramophone Company long service presentation tray recently in Christchurch. It is a foot long, hallmarked and stamped with the name of the Goldsmiths and Silversmiths Company of London. Robert has since discovered that Charley Margerison managed or worked in the Gramophone Company's Belgian branch. A few years after the tray was made, the Margerison family emigrated to New Zealand to escape the war clouds gathering over Europe.

In the antique trade an inscription or monogram on a silver tray is generally seen as reducing the value. Fortunately the dealer who had this tray for sale wasn't tempted to have the engraving erased!

Recent Meetings

By Gavin East

June, July and August 2013

For our meeting on the evening of Monday 24 June 2013 we appreciated the hospitality of Derek and Marcia Cockburn at their home in Jacksons Road, Fendalton, Christchurch. While this was a typical round of routine business followed by a most enjoyable supper and further conversation, it was a little different in that we enjoyed the company of Laurence Varlet's young daughter Natacha who found the assembled "oldies" easy to talk to and vice versa.

The July meeting can often coincide with the coldest weather of the New Zealand winter so it was very kind of Walter and Hilda Norris to invite us to come to "Waipapa" at Swannanoa.

David Peterson read out an email advertising Kevin McElhone's recent comprehensive book on disc musical boxes and offered to help Walter Norris obtain a copy. Wilf Boon mentioned having enjoyed a recent television programme featuring prominent US phonograph collector Charlie Hummel.

David Peterson has for some time been on the lookout for a good original example of the Columbia AU, the appealing little open works, seven inch turntable, front mount machine which was Columbia's "entry level" disc model. After not quite winning the bidding on a few examples on eBay, David had scored with a tidy example of this machine in its slightly different guise as the Standard Talking Machine AA for the American mail order market. As well as the Standard AA, David showed us the basis of what will be a very satisfying restoration project, the case and works of a Victor M of ca. 1903. This had turned up on Trade Me from near Christchurch as part of a large and varied collection of "collectables" being dispersed because of the owner's age and ill health. Finding all the needed parts for the Victor won't be easy but at least the internet makes a rebuild of something like this possible. We look forward to reading David's article on the completed machine in due course!

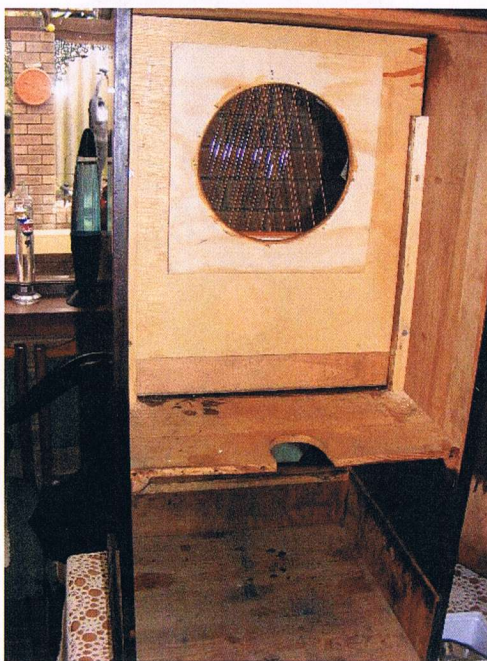
Robert Sleeman had also added to his collection through Trade Me and showed us an HMV Monarch Senior size wooden horn, particularly welcome after the damage to his collection in the 2011 earthquakes. Robert's regular tour of Christchurch's Saturday morning garage sales had yielded some 78's including operatic Polydors. Though these arrived at the meeting with Robert, they went home with me. To add to a diverse programme, Walter Norris played us part of an LP by the fine Scottish accordionist Will Starr.

August 2013 saw us back at my hideout in Lincoln. Among other business I mentioned having been able to borrow, and have copied, some interesting Christchurch photos from the early 1900's featuring gramophones. These will appear in a future issue. Wilf Boon showed us the very attractive British Kodisk children's records which were pictured on the back cover of the last issue.

I put some spring tension on the HMV 191 and played a few discs which, for no particular reason, were ten inch, made in the 1930's and with a German or Austrian connection. On green Polydor 10364-B we heard "Rumtata (Wenn der Franzel die Toni)" sung by the group Humoresk Melodios. On another green Polydor, 10599 B, a short track, the tenor Richard Sengeleitner sang "Schenkt man sich Rosen in Tyrol" from Zeller's "Der Vogelhandler". Though Richard Tauber's recordings from the 1930's still turn up frequently, I had only recently come across Australian Parlophone AR222 on which, as the labels put it, "Tauber sings a duet with himself". I played "Shimmering silver, whispering wave" composed by Melchert.



Klingsor Restoration: After and Before!



Photos by Stephen Austin

ROSENFELD COIN OPERATED PHONOGRAPHS

1.



2.



3.



The Finishing of Edison Phonographs

by Ian King and Mike Tucker.

© I. King & M. Tucker 2013

Introduction.

In Victorian times the finish of choice, for many mass produced articles, was 'Black Japan'. It was widely used on sewing machines, bicycles, kitchenware, bed heads, typewriters, phonographs and of course early motor vehicles. It remained popular until the 1920s when more advanced coating systems were developed for the burgeoning car industry.

'Japan' coatings had been popular for many centuries, particularly in Japan, where they consisted of various coloured resins and lacquers, which could be applied to different substrates, such as wood, metal and even paper, and then hardened by various levels of heat. The resulting coat was hard and also could be bright and shiny. It was also amenable to various types of decoration such as gold lining which in turn could be sealed with shellac or other clear coatings. Orange shellac gives a yellowish tinge to the paint and this was a feature of Edison machines.

Available Literature.

There is a significant amount of literature available on the formulas used for Japan finishes. However, much of the terminology and materials used are foreign to present day readers and, in some cases, extremely dangerous to use and the materials not easily obtained anyway. The Appendix gives some of the more easily accessible references and make for interesting background reading.

The most significant reference is that of the Model T Ford Car Club of the USA, which have undertaken considerable research on the finishes used, together with method of application, on the Ford Model T. Black Japan was used on the Model T for at least 20 years and Henry Ford's maxim that you could have a Ford car "any color you like as long as it's black" was not said without good reason. It was cheap, relatively easy to apply and gave a hard, glossy and durable finish. It was the finish of its day and similar formulae and methods would have been used across industry worldwide.

Making up Black Japan.

The 'Model T Club' paper on finishes gives the Ford formula, and finishing methods used, for black Japan and this can be easily replicated with material available to-day. It is also tolerant of minor errors in the quantities of the various constituents used.

The formula given is. approximately:-

Asphaltum	30%
Linseed Oil	10%
Thinners	55%
Dryers	2%
Carbon Black	2%

This can be translated into materials now commonly available.

(Note :- The trade names given are for products available in Australia. The equivalent items are easily available in other countries)

Asphaltum	30%
Boiled Linseed Oil	10% (Diggers)
Pure Gum Turpentine	55% (Diggers)
Dryers (Terebine LF)	2% (Haymes)
Lamp Black	2% (Winsor & Newton Oil Colour)

The 2nd to 4th items are readily available in any good hardware store. The 'Lamp Black' is a standard oil paint available from Art Supply stores. 'Asphaltum' needs a bit more explanation. Asphaltum is a natural hard brittle resin which, among other places, is mined in the western states of the USA. It is also called Gilsonite after a major mining company which recovers this product. Other sources of supply are known to exist and may be available. It is a relatively soft material of dark brown colour and is often available from art supply stores who specialise in etching materials. In this case it is used as an acid resist. We have found that using Google, and limiting the search to country of use, e.g. Australia, will throw up suppliers. If not, you will have to search wider. It normally comes in 1lb tins and this is a convenient size to purchase. If you intend to do a lot of painting, buy 2 tins. It is not expensive.

Asphaltum and Gilsonite come in various forms; from fine powders to quite coarse crystals. The fine powder form is the one to aim for. If not available the finest crystals available should be ordered. Where powder is not available the crystals must be broken down to a fine powder. A mortar and pestle is the ideal method of breaking down the lump material and these can be found in Kitchen shops or some "Cheap" shops. We have found that placing the lump material in a stout tin and using a hammer handle as a pestle the lumps can be easily broken down into a fine powder. Periodically the broken material should be sieved to separate the powder from the lumps. (A flour sieve is ideal) Continue until all is a fine powder and replace it into the storage tin.

You now have all the materials to make Black Japan.

Preparation of Black Japan.

You will need some form of storage jar to mix the materials and, once mixed, to store for future use. Where a lot of parts have to be painted, we use a screw top coffee jar. A 200 gram coffee screw top jar is ideal. This will make up a large amount of paint and if only a few items are to be japanned them use something smaller, like a normal sized jam jar. It must have a tight fitting screw top. The ingredients are mixed by volume so we need to know how much of each material is being put in the jar. Using a measuring beaker or other device gets a bit messy and we recommend the following:- Remove any labels from the jar, dry the outside and attach a piece of sticky tape along the length of the jar, finishing at the neck.

With a suitable measuring device add water to the jar, 100mls at a time. Mark the water level at 100ml increments up to the neck of the jar. Dry the jar and mark the 100ml increments with the appropriate number. We can now use the jar as its own measuring device.

Determine how much paint you wish to make and then calculate how much of each of the ingredients will be required to make up the total. The Lamp Black and Dryers are not critical items so these are added at the end. The ingredients should be added in the following order:-

Firstly, pour in the Thinners to the appropriate level, next, add the Linseed Oil so that the level is the sum of the two items, followed by the powdered Asphaltum. Allow the asphaltum to sink down into the thinners and oil mixture so that the correct amount is added.

Lastly, add the Lamp Black and Dryers. The amount of Lamp Black can be gauged from the tube and the Dryers can be added by means of a spoon of known capacity. These two items are not critical, but a bit more rather than a bit less, seems to work satisfactorily.

Stir thoroughly with a clean steel rod or screwdriver. The Asphaltum will not dissolve immediately and can take up to a week to fully dissolve in the mixture, Cap the jar tightly and stir, or shake, every day until you have a smooth paint like mixture.

NOTE: If the mixture is not to be used for some time, or it is being stored, after use, for some time in the future, then it is advisable to seal the jar with a piece of "Glad Wrap" or other thin plastic film, prior to fitting the screw cap. This prevents a layer of the paint acting as a bond between cap and jar. If a bond occurs the cap is almost impossible to remove.

How the Paint System Works.

Before starting, it may be helpful to understand how the paint system works.

It should be pointed out that the authors are not paint technologists but have gleaned the information from various sources. We may be all wrong, but it has worked well for us. Linseed oil will, if left in the air, slowly harden. The rate at which it hardens depends mainly on the temperature. It hardens by absorbing oxygen and slowly polymerises to give a hard, but flexible, film. Linseed oil, as it comes in the bottle, is much too thick to be applied to anything without thinning down to a less viscous material, hence the use of thinners. To speed up the drying process dryers are added. Originally it was found that certain metallic elements assisted in the drying process. Some of the compounds used, like lead, are poisonous and are not generally available. To-day, other forms of dryers can be used, such as 'Terebine', and can be bought at most hardware stores.

The Lamp Black oil paint is a dense colouring material to help achieve the colour we need. The mixture, so far, could be applied to almost anything and would harden over time to give a flexible black -brownish film. This is suitable for wood, but not for a phonograph or other industrial product. Hence the addition of asphaltum. Some sources say that the Asphaltum should be melted prior to mixing with the oil. We have found this not to be necessary. Addition of the powdered Asphaltum to the oil mixture seems to be suitable, provided it is finely ground and that at it is allowed to dissolve into the oil and thinners. The mixture must be stirred, at least, once per day. Keep stirring until all the solids have dissolved. As we have pointed out earlier, this may take up to a week. The action of the Asphaltum is to give the paint the dark black colour we want and also make the paint film much harder and opaque. You are now ready to paint.

Cast Iron Preparation.

The majority of Edison painted parts are cast iron, but the same rules apply to the sheet metal parts which were painted. It is not necessary to strip back old paint to bare metal. New 'Black Japan' will bond satisfactorily with the old finish. Firstly clean the part with Methylated Spirits to remove any shellac coating used to seal gold lining and old transfers.

Depending on the state of the casting, use 'Wet & Dry' paper, about 600 grit, to rub back the old paint to a smooth matt surface. Any rust areas may need to be treated with a coarser paper. If the rust is very deep some grinding may be required and subsequent treatment with a rust remover. If a rust removing agent is needed then it must be thoroughly washed and dried before further work is carried out.

If the surface is very rough and pitted then this area will need to be filled. Suitable filler is obtainable from most car accessory stores. (JB Weld, with a heat resistance up to 315°C has been found to work satisfactorily) There is only one stipulation.

Whatever is used it must be temperature resistant to at least 200 deg C. DO NOT use Muffler Putty or similar products that contain isinglass. These just make a difficult to remove mess. Finish off the rubbing back with 800 or 1000 grit paper. It must be used wet. Wherever possible use

a rubbing block to retain a flat surface. As with all painting jobs, the better the preparation, the better the job.

Masking Off.

Use standard automotive masking tape on any areas that are not to be painted. Trim off the excess with a sharp knife. Stanley knives are ideal. Tapped holes can be masked off with suitable size screws. They don't have to be exactly right, just so they go in a couple of threads. Make sure the masking tape is adhering well. Use good quality masking tape which is temperature resistant. Car re-finishing shops can advise on suitable brands. Using cheap brands causes problems when removing the tape after baking. The tape leaves a sticky mess which is hard to remove. More on this later.

Painting Preparation.

The painting process is not only about applying the paint but also how to hold the job whilst painting, how to hold whilst drying, and finally, how to hold in the oven when baking. The answer may be the same, but not necessarily so. A little time thinking through these stages pays dividends in not having to worry about such matters when the part is painted, all sticky and gathering dust.

Holding whilst Painting.

The part will go through three process stages so the method of holding must be suitable for painting, initial drying and baking. Essentially there are two ways to hold parts.

Firstly. By hanging from a wire. The wire needs to be reasonably stiff but thin enough to allow bending into various shapes to get the right part orientation.

Reproducer arms, gates and gear covers fall into this category. The part has to be suspended so that it is as flat as possible, e.g Reproducer arms need to be held in approximately the same orientation as they are when assembled on the machine. The aim is to prevent the paint from flowing to a single point on the part. If this happens, then we will get some very thin layers of paint and some very thick layers. If it is too thick then a bubble may occur and form a lump where it is not wanted. Experiment, and find the best arrangement.

The wire should be about 2mm in diameter and preferably not plated. The diameter gives the stiffness, and not being plated ensures that there is no plating to come off under the effect of heat during the baking process.

Having decided on how to hang the part, decide where to put it during the initial air drying cycle. After this, at least, 24 hour drying, the part will be transferred to the oven, so check how to hold it in the oven.

Secondly, by supporting on 3 pins. Decks and upper body parts are difficult to hang from wires as the centre of gravity always seems to be in the wrong place. During painting the large flat surfaces presented need to be as horizontal as possible. The ideal method is to have 3 sharp cones available. Put these in an old baking dish of sufficient size for the part and support the part on the 3 cones. Alternatively, it can be supported on nails hammered through a piece of aluminum or steel sheet will do the job equally as well. You may need to drill undersize holes to get the nails through but also give a tight fit, Nails with large heads are to be preferred. The details are left to your imagination.

Having decided on the method of holding, carry out the experiment of moving the unpainted part from "painting", to "initial drying" and then to "baking". If you are satisfied that you have it right, then proceed to painting.

Applying the Paint.

Black Japan paint made to the formula above is a messy substance, so careful handling is advisable. Prior to applying the paint, the part should be wiped over with a clean rag and thinners to remove any residual grease or dirt. In Edison's time paint was applied in one of three ways; by brush, by dipping or by pouring the paint over the job. The last two are certainly not suitable for anything other than very small parts and we don't recommend trying these methods. They also need lots of paint.

After painting the coated part needs to be dried in a warm and dust free atmosphere for at least 24 hrs. Determine where this will be early in the piece. More on this later. Warning! If you attempt to bake a part before it has dried adequately, the paint surface will crack and you will need to clean off the part and start again.

Using a brush is certainly OK for small parts. The brush used should be of the type with very fine filaments at the tip. The brush should be well loaded with paint and 'flowed' over the part. Avoid excessive brushing.

Hold the part the way it will be suspended, do the underside surfaces first and then the upper surfaces. We are attempting to flow on the paint so excessive brushing is to be avoided. Needless to say clean brushes are essential.

Our preferred method is by spraying. Not an Edison method we hear you say! If spray guns were available in Edison's time he would have used them. In any case it is the finish we want, not the method.

Spray Painting Guns.

We have tried various types of spray guns and finalized on two similar types.

An automotive touch up spray gun with gravity feed These are readily available in big hardware stores and quite cheap. The air supply needs to be about 200Kpa (up to 50 psi) The air tank does not have to be extra large as we need very little air to get the job done. The reason for a gravity feed gun is that it needs less air to get the paint onto the job and reduces the amount of overspray, Remember that the paint is fairly thick and we want to keep it that way in order that we reduce the possibility of runs on the job.

Secondly, we have used an airbrush type gun. The larger type of airbrush compressor(1/4 H.P) is recommended as it has to provide enough pressure to blow the relatively thick Black Japan. A "Paasche VL or similar air brush has been found to work satisfactorily.

Note! When airbrushing or spraying this mixture a thin mist of oily black residue (or overspray) spreads over anything nearby. We have found that a homemade spray booth (a large cardboard or plastic box helps considerably and also prevents foreign bodies from falling on the job. OH and S considerations indicate that a mask and goggles should be used.

A simple spray booth like this is certainly suitable when an air brush is being used but may be too small when an "automotive" gun is used.

If spraying partly in the open, make sure it is a wind free day and that the adjacent area has been sprayed with water to hold down dust. Some form of catching overspray is desirable.

Another useful adjunct to the painting process, particularly if you are painting large flat pieces such as 'Decks', is a 'Lazy Susan'. This allows the larger parts to be supported on our '3 nails' and then easily sprayed from various directions. The three nail method allows both sides of a 'deck' to be painted at one time.

An alternative method of support is a tin can set in the middle of the 'Lazy Susan'. Parts should be about 100mm from the 'Lazy Susan'. Smaller parts that are hung by wire can usually be held in one hand and rotated around as they are sprayed.

If the paint is too thick and cannot be sprayed properly, a small amount of thinners can be added to the paint. Add only a small amount at a time and mix in thoroughly. Apply only the minimum of paint to cover the job with a smooth finish. Too thick a coat will cause problems in the baking cycle.

Drying.

Having applied the paint to the part what next? We have to air dry the part in a dust free atmosphere. The authors have used both a large cupboard and hanging high in the garage with the doors closed. The objective is to do a preliminary drying cycle in a warm, clean atmosphere, free from dust. Temperature should be at least 20°C and preferably about 25°C. The time can be extended to 2 or 3 days if necessary. The paint film should not run if the part is rotated or tilted in some way, however it will still be tacky to the touch.

Baking.

This is the critical part of the cycle and should be done with care. The authors have used both an oven set up for the job and an ordinary domestic oven. If the latter is to be used ensure that the "Lady of the House" is either extremely tolerant or is visiting her Mother. Not that we will damage the oven but the smell can be a bit overpowering. A range hood is a necessity when using a domestic oven. The reason for this precaution is that the baking process gives off dark smelly fumes. The

smell is similar to that produced when laying bitumen road surfaces.

We will also need a separate oven thermometer to accurately assess the oven temperature. So, with parts in the oven, we can start the baking process.

The following cycles can only be given as a guide as the cycle time depends on the thickness of paint, the effectiveness of the initial drying cycle, and also the initial mix of the paint.

For small parts a pre bake at 50°C for 1 hr followed by 150°C to 200°C for 1 to 1 1/2 hrs is satisfactory.

For medium to large parts, place the part in the oven and set the temperature to 200°C and turn on the oven. Using the oven thermometer, when it reaches 200°C adjust the control to hold it at this temperature for 2 hrs. When the time is up, switch off the power and allow the oven to cool naturally. If it is felt that the paint film is rather thick then a slower heating cycle can be used, like holding the temperature at, say, 50°C for 1/2 hr, raising to 125°C for 1 hour and a final bake at 200°C for 1 1/2 hrs.

The objective is to allow the volatile elements to evaporate off without the outer film curing and forming a bubble. Periodically open the oven door a crack and allow the gases to escape. Turn off the power and allow the oven to cool for, say, 30 minutes. then remove the part or parts. Look-out they will still be hot !!

Gloves are recommended and hold by the suspension wires. Don't drop the parts on the floor, particularly if you have vinyl !!

Suspend in a suitable place and allow to cool. The parts can, of course, be allowed to cool in the oven with the door open.

You should now have a part with a shiny black finish.

Problems.

We have encountered problems along the way, most of which have been solved, but not all. Readers may have additional information that may be useful to other practitioners.

Micro Cracks.

These are hairline cracks which appear after baking. Possible causes are too high a baking temperature or too long in the baking process. As far as we are able to determine there is no rectification possible. Rubbing down with wet and dry and re-spraying will not cure the problem. When the part is re-baked the micro crack re-appears. The only thing we have found is to completely remove the paint coating to bare metal and start again.

Blisters.

These are formed either by too thick a coating in one area (more on this later), Insufficient air drying prior to baking or too fast a baking cycle. It seems that the bubble or blister is formed by solvents being trapped under a soft outer coating and being vapourised, thus forming the blister. The blister may, or may not, burst. The remedy is to rub back with wet and dry to a smooth even finish and re-coat. Ensure that before doing this that the coating is fully dry and hard.

Runs and Bubbles.

Runs and bubbles are very often caused by incorrect orientation of the part when spraying and drying. This is mainly a problem with curved parts such as reproducer carriages. Parts should be orientated so that wet coatings cannot flow down to one low point. Wire hangers can be made to avoid this situation.

Too thick a coating will also cause the same problem. Two thin coats may be the solution.

Not satisfied with the finish?

A close look at original Edison parts shows that the finish was not perfect. Small runs and other minor blemishes were frequent, particularly in areas which were not seen. If you are not satisfied then rub the part down to a smooth finish and recoat. The re-coat film can be quite thin, just thick enough to smoothly cover the first coat. Then follow the drying and baking cycle as before. After a few practice runs you should be able to reproduce the Edison finish without too much trouble. If nothing else it is satisfying to reproduce a finish which was commonplace 100 years ago.

APPENDIX.

References.

There are many references to "Black Japaning" on various web sites and these are all helpful in getting background information. However, the most useful we have found are:-

www.mtfca.com/discuss

Go to Model T Forum: Japan Black Enamel

www.en.wikipedia.org/wiki/Japan_black

www.ebookhelix.com/a-guide-to-japanning

Appendix 2.

Spraying Equipment.

Gravity Feed Detailing Spray Gun.(Typical)

Pressure required. 10-25 psi (70 to 170 Kpa)

Air consumption, at 25 psi, about 80 Litres per min.

Material output. 75cc per minute.

Air Compressor.

Minimum output to suit gun above.

Inbuilt air filter is desirable and strongly recommended..

Airbrush Equipment.

An "Artlogic" 1/4 H.P. mini compressor providing 35-40 Litres of air per minute has proven satisfactory. So, a compressor with this output should be adequate.

Note! 1/6H.P compressor was found to be inadequate

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Please email: vandrbrown@xtra.co.nz or phone 064 3 312 4477 (NZ)

Wanted to Buy or Exchange:

HMV No.4 soundbox, gold finish and early style with "His Master's Voice" printed on front. Record dusters with New Zealand shop names.
Gavin East, 4A Lyttelton Steet, Lincoln 7608, New Zealand,
email: Gavin.East@lincoln.ac.nz





We have often included musical boxes in the magazine so I make no apology for sharing this photo, taken by David Peterson, of the Victorian musical automaton, with the typical rocking ship etc., which was sold at auction near Christchurch recently. It was fresh to market and offered with no reserve but a combination of telephone bidding and the presence at the auction of two of our members ensured that the hammer price of \$2,000.00 was a fair result for the vendor. The member who won the auction is very pleased to have the automaton since they don't often come up for sale here

- Ed.