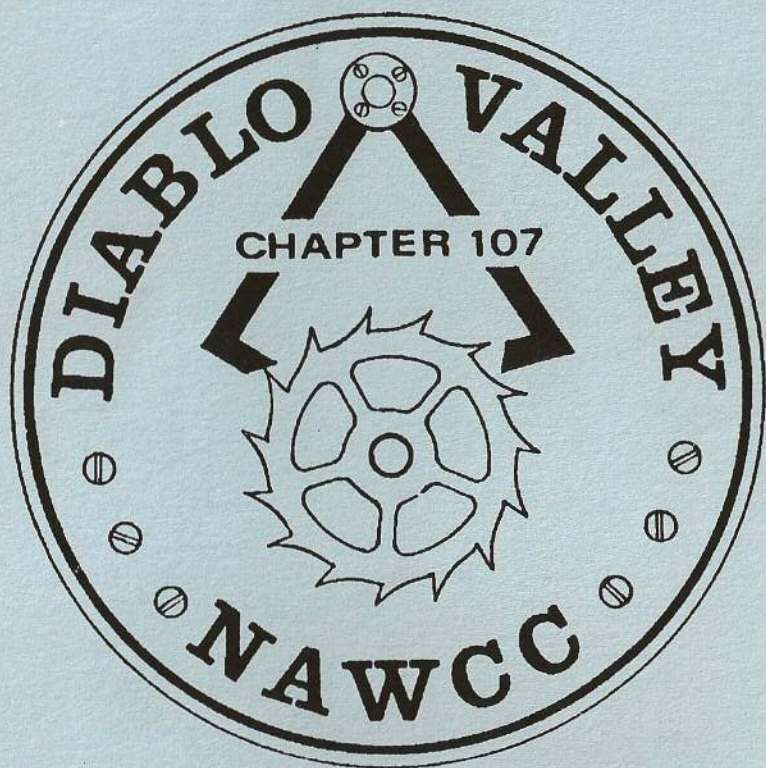


BULLETIN



AUGUST 1990

ISSUE 70

August's President's Message:

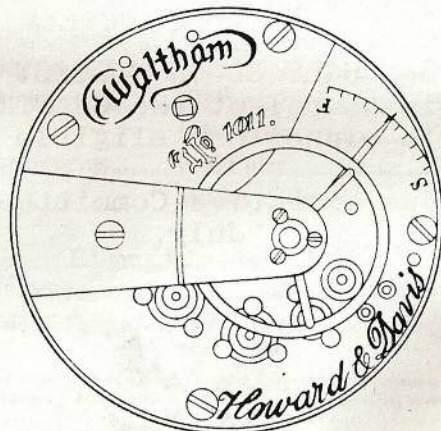
Another Bulletin, another message and still life goes on.... It's midway, well it was the last time I looked and by the next time I look it will all be over, at least for this Pres.

I am probably doing this all wrong but I have no other deep and profound thoughts and want to use this opportunity to say something about the folks on the inside of the front blue cover. Go ahead, look back, check them out, look at the functions, the jobs these good people do for the chapter and its members.

Now stop and imagine a meeting without the raffle, the library, the silent auction,...NO COFFEE!!! There are others, just read the list, all so important and so well handled by these goodhearted folks.

Next time we meet, heck anytime we meet, acknowledge them in passing, tell them you appreciate what they do--i know I do and I just have to write this message and get top billing. Who said life was fair?

Steve Fabes



WATCH MOVEMENT
Howard & Davis, Waltham, Mass. c.1855

THE TIP OFF

by Phil Russell

*** HELP! I would like to know the guarantee time period for any of the old clocks. All I can find is that the clock is warranted to keep time--for how long is not mentioned, not even for the Black Mantel Clocks.

***** How good is your new clock or watch guarantee?? The Ingersoll Watch Co. had a one year guarantee and provided a "Guarantee in back of each case." Some Ingersoll watch guarantees had an option: "It required about 10 days to repair--if instead of waiting for your watch to be repaired, you prefer a new one, enclose 10 ¢ in addition to the 5 ¢ postage and we will--if not misused--send you a new watch at once." Have you had a good option lately?? (Apparently cheaper to make a new one than the cost to repair the old one.)

Have you bought a new American-made watch lately?? How about a Timex (remember Ingersoll), an Elgin, a Waltham, a Hamilton, a Bulova, or a Benrus. Too bad, ALL are foreign made. NOT ONE major U.S. watch name is manufactured in the United States. What glory was Rome...and now, alas, the U.S.A.

****Wouldn't you know it! Chauncey Jerome in 1826 got the idea to place a mirror in the lower half of the door of the clock, instead of the usual painted tablet. Chauncey was hep--mirrors (called looking glasses then) were not common in 1826. The buyer was very pleased to get both a clock and a looking glass at the same time--what a deal! The bronze (no bronze) looking-glass clock was born. Many clock makers used the mirrors until about 1837 when sales fell off because of the depression panic. What ideas have you come up with lately??



BRASS POLISHING AND LACQUERING

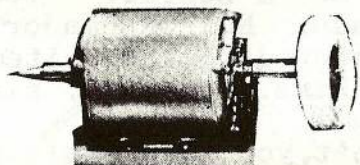
Most of us from time to time need to polish and coat brass cases, movements, pendulum balls, or other items. I have used these methods and materials for many years and they give excellent and long-lasting results.

Before starting to polish, first do the necessary repairs such as removing dents, other case work, bushing the movement, and being generally sure the movement will run after being polished, lacquered and assembled.

To get off old lacquer, I either use lacquer remover or polish it off with the buffer as described below. If you use lacquer remover, be sure to work quickly, wear gloves and eye protection, have good ventilation, and rinse the item off thoroughly because lacquer remover is CAUSTIC.

POLISHING

A good buffer motor has a shaft at each end, is a quarter or third horsepower, and turns 3450 RPM.



The motor must be fastened down to the bench securely. Work in a place where the black stuff that flies off the cloth wheel won't damage anything. Wear eye protection and clothing that won't be ruined; polishing is dirty work!

The buffer has a coarsly threaded spindle fastened with set screws onto the motor shaft at each end. These spindles can be bought from

clock supply houses (both S. LaRose and Otto Frei carry them) or from tool supply or even hardware stores, and come in right and left hand threads. The right hand thread spindle goes on the right end of the motor and the left hand thread spindle on the left end of the motor.



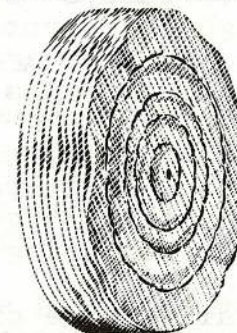
SPINDLE

This is necessary because the thread on the spindle goes directly into the center hole of the cotton or wire buff wheel, and the threading must pull the wheel toward the motor to hold it in place.

Be sure the motor is turning so the top of the wheel rotates toward you. Otherwise the debris thrown off the wheel during polishing will go right in your face and if you are holding the thing you are polishing correctly for a properly rotating motor, it will probably grab and be thrown. The edge of a six inch mop turns at about sixty miles per hour!!

The polishing or buffing wheel or "mop" is made of many pieces of cotton cloth sewn together and in the S. LaRose catalog is called a "muslin buff". I use the six inch diameter ones. You need at least two cotton mops; one to use with tripoli and one to use with rouge. Don't mix the two polishing compounds on one mop or the mop is ruined.

COTTON FLANNEL BUFF



It's critical to buy mops whose holes are correct for your spindle diameters.

Start your polishing by mounting a mop on one of the threaded spindles. This is easy, you just (WITH THE MOTOR OFF) spin the mop onto the spindle with your hand.

When you turn on the motor (WITH YOUR HANDS OFF the mop) the rotation will pull the mop on tight.

Now "charge" the mop by pushing your tripoli stick a quarter inch out of its tube and moving the tripoli gently from side to side against the rotating mop. It doesn't take much tripoli. Hold the tripoli against the mop BELOW the level of the spindle for safety so the tube won't be grabbed and so the stuff that flies off the wheel will go down instead of toward your face. If the mop gets charged with tripoli and becomes hard, a touch with a wire brush will "revive" it.

The rouge mop is charged the same way using the rouge compound.

The order of polishing is:

First.....tripoli

Second.....rouge

Third.....Brasso (by hand, not with the buffer)

Tripoli is the strongest cutting agent. Use it to remove old lacquer and smooth out the roughest corrosion and scratches. Be careful: if used too aggressively it will noticeably round off edges and dish out oil sinks.

Next wipe off thoroughly with a clean rag all remains of tripoli and then use rouge on your other mop to get a good shine. Rouge is a finer polishing agent than tripoli.

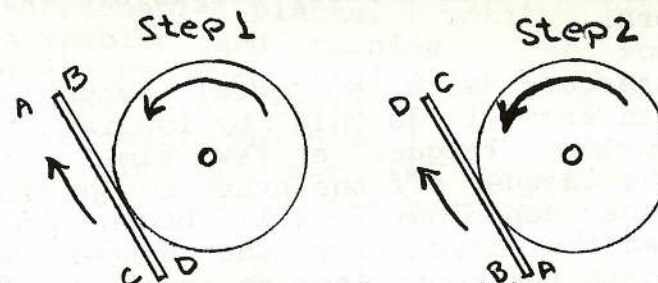
Finally, wipe off all traces of rouge and use Brasso by hand with a fine cotton cloth such as old sheeting to get the ultimate shine. Brasso leaves a film that must be removed before lacquer is applied. Use hot soapy water and an old toothbrush, then dry the piece thoroughly so no water marks remain.

From this point on you must not get any finger oil and acid on the clean polished brass; touch it only with a cleanly gloved (cotton or

nylon) hand. Lacquer before the brass starts to dull from exposure to air.

Both rouge and tripoli can be obtained from the clock supply houses. Rouge comes in several grades, each of which has a different color. I use yellow rouge as it seems to work best for this purpose. Brasso is a commercial metal polish that can be bought at most hardware stores.

When buffing, be sure to hold the piece firmly, and touch it to the mop below the mop's center line. Never let the top edge of the item touch the mop or it will be snatched out of your hand. It's tricky business to hold the piece correctly and not get it caught and thrown. In polishing a flat piece such as a clock plate for instance, polish from it's center to bottom edge, then reverse the piece and do the same again.



I suggest you practice with some junk stuff. The work will get hot, so you may have to do it in sections. Polish till its hot, set it down and work on another piece, and start again on it when its cooled off.

A fine wire brush shaped like the mop can be bought and is great for cleaning up steel parts or for brass where you want a matt finish. Don't forget to do the visible ends of the winding arbors, either with the wire brush or tripoli.

Always polish the long way on clock plates. You can't avoid some "grain" to your polish and this way looks best. Polish the edges of the clock plate before the faces.

Polish the flat center part of a 400 day clock base front to back between the columns, not from side to side. The deep ring for the glass dome will have to be done by hand with Brasso, as will any "pie crust" type of embossed or cast brass, because the buffer will smooth out such fine detail too much.

LACQUERING

Again, we need good ventilation, and a dust free place to work. Acetone, the main solvent in lacquer is heavier than air and explosive, so don't work where it can travel across the floor to a pilot light.

I have used H and R Superior lacquer and thinner for years with good results. I haven't had good results using spray lacquer from cans. Any good brushing lacquer should work, just be sure to use the same brand of thinner as all lacquers aren't fully compatible with all thinners.

Thin the lacquer with an equal amount of lacquer thinner. I do this by loading the brush from the lacquer a few times and scraping the lacquer off the brush on the side and into the container I will brush from. Then I load the brush from the thinner and scrape it into the container an equal number of times, then mixing thoroughly with the brush. It is necessary to thin the lacquer considerably so that it will flow easily and leave no brush marks.

I use a three quarter inch flat camelhair artist's brush. Flow the lacquer onto the piece smoothly, overlapping the brush strokes. For round objects, a turntable is useful; hold the brush against the object and rotate the piece by means of the turntable. You can lacquer wheels in the lathe, using it as you would use a turntable, but spin very slowly. Never put any lacquer on the teeth themselves, the pinions, or the pivots. Peg out the pivot holes after the lacquer is dry. You may have

to carefully use a broach to clean pivot holes. Take care not to remove brass, only lacquer. Don't remove the lacquer from the "oil sinks" as there should be no oil there anyway, and the lacquer is required to keep them looking good. It works well to lacquer half of a piece, set it aside to dry for a few minutes, and then hold it by the lacquered part to finish. A helpful trick is to cover each freshly lacquered part with a small box to keep it dust free while it dries.

On carriage clocks, mark each piece as you disassemble, brass columns and glasses. Be sure to include which is up and which down. Only clean the bevels on the glass when assembling. Remove the label and clean the rest after assembly. Be sure to polish the glass channels thoroughly: they will show through the glass.

Don't oil a clock, with exception of unreachable places, until it is fully assembled and running. If you have to disassemble an oiled clock which has just been cleaned, it should be rinsed again before reassembly, which will not damage the lacquer. Otherwise oil gets in the wrong places and will wick out of the bearings.

GOOD LUCK and HAPPY LACQUERING

Jack
Jack Ford

Jack Ford, of San Jose, long time clock restorer and professional instrument man, gave us a most useful and interesting brass polishing / lacquering talk and demonstration at our June meeting. Jack graciously agreed to let me write up his information based on his talk to us and on a previous talk to Dr. Stevens Chapter. I did so, sent the result to Jack for editing, and the result follows.

John North

THE ARCHITECTURE OF HOROLOGY
Part I - In The Beginning



In the beginning man knew enough to sleep when he was tired, find something to eat when he was hungry and put on a fur when he was cold, and he got up when it was light. All that changed very quickly as he became more civilized, found himself permanent shelter and formed himself into families and more social groups. Before long he knew about weather and seasons and began to plant crops, domesticate animals and make some smarter guys leaders and others "blue collar" laborers. By observing movements of the sun, moon and stars, he learned about directions, to judge heights of objects and to create a mathematical concept of his world. Time telling became inevitable; a semi circular dial with a stake or pointer noted the shadow of the sun between daytime and dusk and a changing angle as the seasons changed. It would seem natural, as in Japanese timekeeping before 1870, to divide the day into daytime and nighttime (temporal) hours, but, as the Japanese discovered, that notion necessitated constant alteration of a time keeping device as the months and seasons changed. A sundial is probably still our best time keeper if its seasonal adjustments are correct and if the sun is shining.

I refuse to get into the ideas of sidereal, solar, lunar, temporal or mean time. That is for the complex mathematician, which I am not. I have yet to understand why we divided our day into 24 hours, except that 24 is a nice, easily divisible number and it fits well into 360 degrees but not very well into our 365 day, 5 hour, 48 minute and 45 second year. I suppose this is the reason that there have been so many mathematicians on earth, to try to figure out all this mess. And I never could figure out why we simply don't have alternations of 30 and 31 day months and knock off Dec. 31 every 4 years. Most people knock off Dec. 31 anyhow.

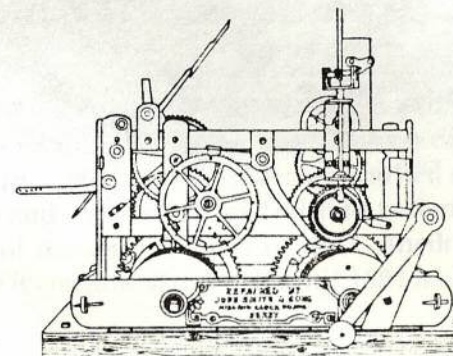
Seriously, in the B.C. era, perhaps when people began to divide up the day into accurate periods for paid labor, there was a need for accurate time keeping. Our planet's steady rotation about the sun seemed most logical when we began to understand our universal pattern and the fact that our orbit was elliptical.

Many early cultures studied these planetary movements with much sophistication such as the Mayans, Druids, Egyptians and Orientals and left their observatories for us to see and interpret. Our western culture is only just beginning to understand the depth of scientific knowledge known to ancient man.

This ancient history poses several questions: Why was there little interest in time keeping in Greece and Rome or with Su-Sung's great astronomical time piece, date 1066, which I will talk about in the next episode? And why then did it take us another almost 1000 years before we were to create a mechanical timepiece? And when it was created, it was in the image of our architectural dwellings.

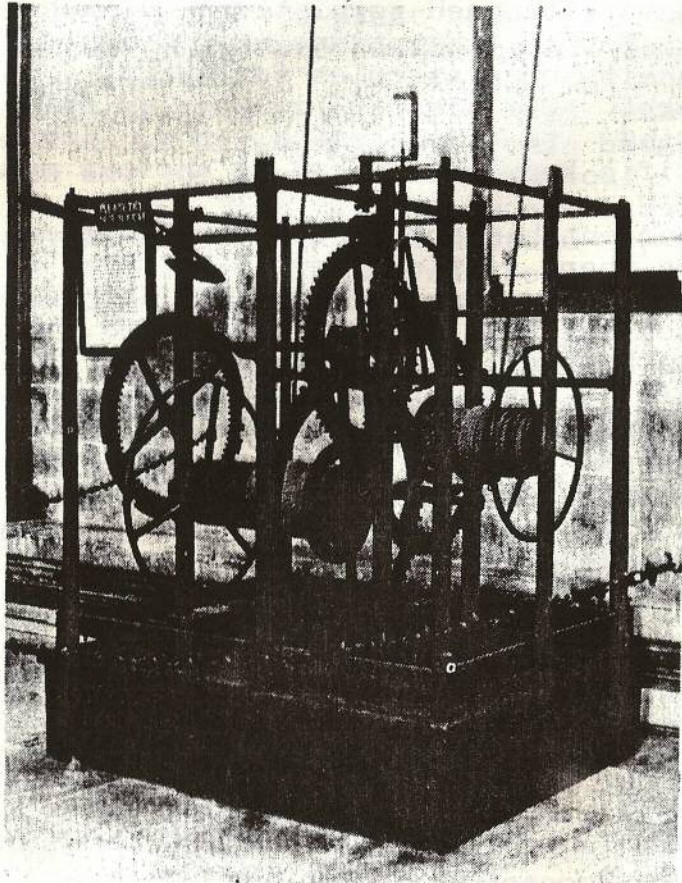
Part II - the Rebirth of an Idea....

Dorothy Waldrip
The Hoary Horologist



TURRET CLOCK
St. Mark's Church, Worsley, c.1840

The Medieval Clock of Salisbury Cathedral



THIS CLOCK is the oldest existing clock in England and almost certainly the earliest remaining mechanical clock in virtually complete and working condition in the world. It was made in or before 1386 as the cathedral accounts for that year include a document concerning the provision of funds for maintaining a "clocke". At the time Ralph Erghum was Bishop. He was translated to the see of Bath and Wells in 1388, and four years later there is a record of a clock in use at Wells. A careful comparison of the two clocks has revealed that they were almost certainly made by the same craftsmen. It may, therefore, be assumed with some confidence that craftsmen employed by Bishop Erghum to make the Salisbury clock were later re-employed by him after his translation to Wells and made the clock for the Cathedral. Both clocks were constructed entirely of hand-wrought iron. They were originally controlled by a verge escapement and foliot balance, but to increase their accuracy were altered at some later date by the provision of a pendulum escapement. They had no dials, but while the Salisbury clock struck only the hours the later Wells clock also struck the quarters.

The Salisbury clock was originally housed in the detached Bell Tower which stood near the churchyard wall opposite the north porch of the Cathedral where it struck the hours on one of the bells. In 1790 the Bell Tower was pulled down by Wyatt and the clock moved with its bell to the first stage of the central tower of the Cathedral itself. There it continued to work until 1884 when a new

clock was installed. The old movement remained in the tower unnoticed, no particular interest attaching to it owing to the erroneous belief current at the time that there were several older clocks in existence. In 1929 the clock was "rediscovered" and thoroughly investigated. It was not long before it was established without doubt as being the earliest clock in England. In 1931 it was cleaned and set up in the north transept, but not in working condition. In 1956 it was completely repaired and was also restored to its original condition by the replacement of what was left of the pendulum part by a verge and foliot balance such as it originally had. The balance can be recognised by its alternating "fly wheel" action. The newly made parts, hand-wrought like their predecessors, are coloured dark green so as to distinguish them from the original parts. New weights were made in the Cathedral workshop. The clock was then set up here in the nave and connected to the Bishop's Bell which in former days was used to warn the Bishop of the approaching times of services in the Cathedral. The cost of this restoration was met by the Friends of the Cathedral, and the restoration was carried out with great skill and care by Messrs. John Smith & Son of Derby.

Thus this clock which was made nearly 600 years ago and struck the hours for 498 years is now after a lapse of 72 years, once more in complete and working order. It has been calculated that it must have ticked more than 500 million times — a great tribute to the workmanship of those who made it.

Thanks to Harold Montaro for this article.



UNION, 30 Hour Lever Timepiece.

Jerome clock

PEARL INLAID.

NOISY STRIKE TRAIN IN EARLY AMERICAN STYLE CLOCKS?

There is no easy cure. Even when new, they were not too quiet (so I am told). As teeth, pinions and bearings wear, they get noisier.

What to do? There is a need to rework the high speed (fast) end of the strike train to new tolerances. This means accurate re-bushing, replacing worn pins in the lantern pinion of the fly and reversing the last wheel in the train to present unworn teeth to the fly arbor.

Next, look to see if the strike train can be slowed down. Causes of fast striking could be too strong a strike mainspring, too small a flay, and too loose a friction drive on the fly. (There must be some slippage to allow the train to get up to speed to make the strike intervals even.) Also, try balancing the vanes of the fly (static balance).

If the movement mounts directly to the backboard, try insulating or damping the mounting arrangement to prevent the backboard from amplifying the fly sound but not the gong or strike sound.

If all else fails, a noisy fan isn't really all that bad.

John Stohr

THE IMPOSSIBLE 31, 47, or 63

Clock wheels with odd number of teeth are not difficult to lay out.

Try this trick.

Use a length of band saw blade. Count the number of teeth, or multiply to get enough length, then carefully cut blade. Mount cut blade on a round of plywood. To use, simply turn tooth points down and tap lightly with a hammer. Lay out spacing is complete and accurate.

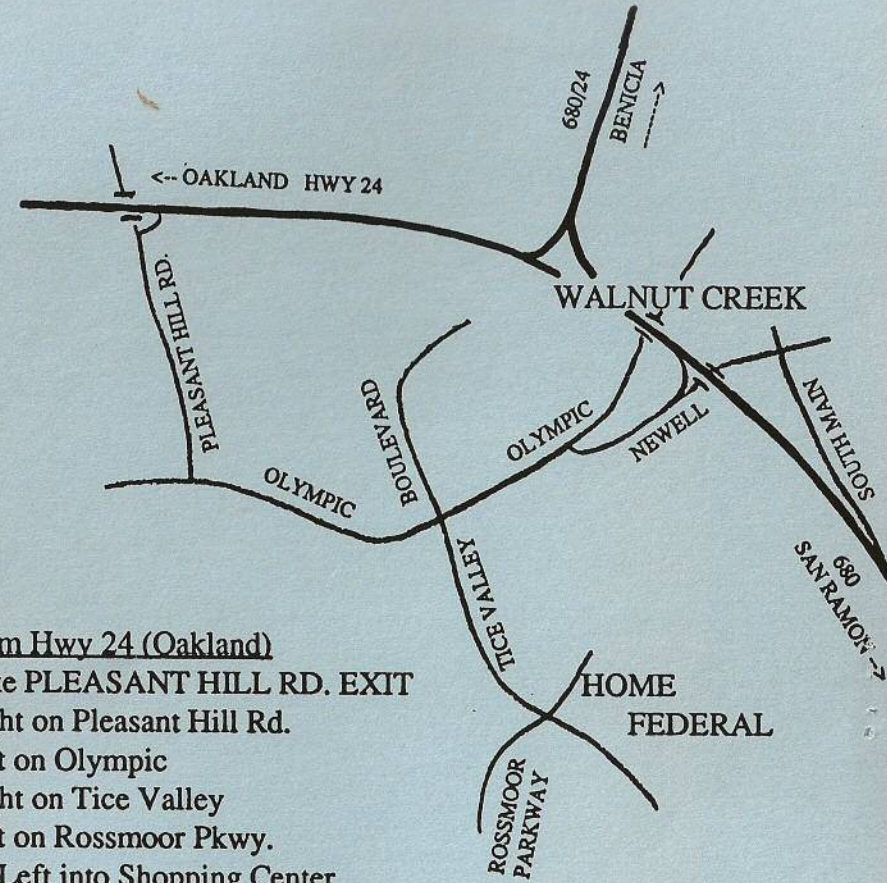
Royal English

MART

FOR SALE

Cuckoo Clocks.
Most not complete but repairable. Most movts good running order. 20 price \$10.00 each, all for \$150.00 incl 3 musical types--all as is.
229-2462 Phil Russell

DIRECTIONS TO CHAPTER MEETINGS



From Hwy 24 (Oakland)

Take PLEASANT HILL RD. EXIT
Right on Pleasant Hill Rd.
Left on Olympic
Right on Tice Valley
Left on Rossmoor Pkwy.
1st Left into Shopping Center

From Hwy. 680 (San Ramon)

Take SOUTH MAIN EXIT
Left On Newell
Left on Olympic
Left on Tice Valley
Left on Rossmoor Pkwy.
1st Left into Shopping Center

From Hwy 680/24 (Benicia)

Go South on 680 in Walnut Ck.
Take NEWELL EXIT
Right on Newell
Left on Olympic
Left on Tice Valley
Left on Rossmoor Pkwy.
1st Left into Shopping Center

Home Federal is between American Bank & Trust and First Interstate Bank. Meeting Room is at rear.

Annual Chapter Membership \$15.00

Non Member Meeting Donation \$3.00

Guests are most welcome, but due to our tax exempt status, only NAWCC members can participate in the MART.