

February 2019

Adhesives

Revolutionary
War Figure



Next Meeting: Thursday,
February 21th 7:00 p.m.
Meeting Topic: Bare
Metal Madness

Tactical Notes

To contact MMCL:

President:

Stu "IPMS/USA" Cox

Email: Scox2010@gmail.com

Vice President:

Dr. Terry "IPMS/USA" Hill

Email: Thill35434@aol.com

Secretary & Editor:

David M. Knights

LOULAW@AOL.COM

Member at Large:

Randy "IPMS/USA" Fuller

Email: Glusnffr@aol.com

Treasurer:

Richard "IPMS/USA" Guetig

Email:

Webmanglers:

Mike Nofsinger (RIP)

John Sachs

Email: J3cubfan@gmail.com

"**Tactical Notes**" is the Newsletter of the Military Modelers Club of Louisville, Inc. We appreciate your taking the time to read this little newsletter. We'd appreciate it even more if you would write something. **Yes, I am talking to you!**

Cover Photos: by D.M. Knights

Editor's Note

Greetings MMCL,

The January meeting started the year off with a bang. If you missed the meeting, you missed one of the best presentations that I've seen in my 30 plus years as a member of MMCL. Doc O'Connor did an excellent presentation on rigging biplanes. It has inspired me to take a shot at a biplane in the near future.

The January meeting was very well attended. I am really happy to see this level of attendance. Members attending each month really contribute to the atmosphere and the opportunity for fellowship and learning. February promises to be just as educational. Please make plans to attend. I promise you won't regret it.

If you come to the meeting, please bring a kit for the raffle if you can. The raffle is one of the main ways we support the club, so dig deep. Also, I am almost out of articles for Tactical Notes. Please write something. I appreciate all the members who contributed to the last few issues. There is a lot of building going on, so there ought to be plenty of articles.

Finally, I want to say thanks to all the members. MMCL has been a big part of my life for a number of years, and y'all make it all worthwhile.



President's Page

By Stu Cox

Greetings Club Members!

We have our February monthly meeting coming up this thursday, February 21 at 7pm at the Kyana facility. Due to scheduling conflicts at UofL, we will have to postpone our 3-D Printing extravaganza at Speed Scientific School until April or June. Ed Tackett has offered to host a monthly meeting to help us all learn about current resin printing and imaging technologies. More to come on a target meeting date!

This month though, we have an excellent presentation and working session planned on the use of "Bare Metal Foil". Last month you saw Mark Domeck show off his Bare Metal Foil clad aircraft, with each individual panel rendered in true to life detail! This month Mark has offered to bring in some more of his work and share his techniques for applying sectional foil to simulate actual panel sized detail.

But wait, there's more! Dave Crouch is also planning to share his techniques for using Bare Metal Foil for the purpose of masking aircraft canopies and land vehicle windshields! Feel free to bring along any kits you might need to try this on, with some foil product if you have it. Check out SRI Hobby Shop for various "Bare Metal Foil" products prior to coming to the meeting!

But wait, there's even more! Yes, we'll have our usual monthly club raffle! Bring a kit to donate and you receive one free raffle ticket! We've been having some awesome raffles lately, so save a few extra bucks to give it a chance!

March will be FRIDAY NIGHT FIGHTS - Workshop Build Session! This event is planned for Friday March 22nd at KYANA. The club is planning to provide Pizza and beverages so be sure to come out and stay all night to model like the "good ole days"! There will be NO workshop or meeting at Kyana on Thursday, March 21st.

Finally, we will be coming into the home stretch for our MMCL Invitational Show and contest that is scheduled for May 18th! Please start grooming those stashes and saving some kits and supplies to donate in support of our massive show auction!

We'll see everyone this Thursday night! Bring a show and tell item, or a kit that you would like to add some foil too, and be ready to burnish your foil!

Soldier of the Second Canadian Regiment (Congress' Own)

*An easy one for the
figure freaks*

by G. Washington

Ed note This article is an update of one which originally appeared in RT in 1975. Note that the line of Airfix 54mm figures has been discontinued, but they can still be found on, e.g., Ebay. Reprinted from October 2018 BeaverTails

The 2nd Canadian Regiment, also known as Congress' Own or Hazen's Regiment, was authorized on January 20, 1776, as an Extra Continental regiment and raised in the province of Quebec for service with the Continental Army under the command of Colonel Moses Hazen. All or part of the regiment saw action at Staten Island, Brandywine, Germantown and the Siege of Yorktown. Most of its non-combat time was spent in and around New York City as part of the forces monitoring the British forces occupying that city. The regiment was disbanded on November 15, 1783, at West Point, New

York.

The regiment was one of a small number of Continental Army regiments that was the direct responsibility of the Continental Congress (most regiments were funded and supplied by a specific state). Commanded by Colonel (later Brigadier General) Moses Hazen for its entire existence, the regiment was originally made up of volunteers and refugees from Quebec who supported the rebel cause during the failed invasion of Canada. While Hazen and his staff were later authorized by Congress to recruit in other areas to supplement their ranks, most men came from Canada and Pennsylvania.

From 1776 to 1779 the regiment wore brown coats faced and lined with white. After that, the facings were changed to red. Men of the battalion companies wore the usual black cocked hat edged with white braid. The light infantry company, however, wore a distinctive black leather cap with an upright black panel at the front. This bore the cipher COR (for Congress' Own Regiment) and the legend "Pro Arts et Focis" on a banner. These were probably done in silver or white.



Using the Airfix 54mm "American Soldier, 1775" it's a very simple matter to make a member of the Second Canadian Regiment. If you'll settle for one of the regular infantry, the kit's tricorne hat will suffice, and the only modifications necessary are with paint.

Should you want to model the more distinctive light infantry cap, this, too, is not difficult. I found that the basic round cap shape can be fashioned by cutting the upturned brim from the hat, and building up a bit with putty to give it a proper shape. The front panel can be made from a piece of .005 plastic card.

While on the subject of the Airfix “American Soldier”, let me pass along a few general thoughts which I’ve come up with while working on several of the figures. First, perhaps it’s just me, but I find the stance of the stock figure somewhat contrived and artificial. Even moving the legs together a little will provide a more realistic stance. Next, I’ve had good results modifying the facings and pockets by carving them off and replacing them with .005” sheet plastic items. This takes a bit of trial and error with a French curve till you get the proper shapes. Buttons can be made from very thin slices of the proper diameter plastic rod, and buttonholes can be scribed. It’s a tedious process, but does improve the figure considerably. Also, you may want to modify the shoes. Shoes of the period were low affairs, and were

not ‘handed’ (I.e. left and right shoe). Airfix has provided something akin to a contemporary work boot!



Light infantry cap



Light infantry cap (reproduction)



Adhesives I Use Scratch-Building

Myles Marcovitch

Scratch-building could be considered the pinnacle of model making. I started modeling when I was 8 years-old and it took until my mid-60s before I gained enough confidence to tackle a complete scratch-building project. Unlike a well-engineered kit, scratch builds will not have a nice instruction book telling you what goes in before what, and what to pay attention to. The project may not even have a drawing. Often all you have is a picture from which you must create your own drawings. Materials aren't specified, colors and paints are not called out, special parts won't exist, and what glues to use and where is a complete unknown.

One of the reasons why many modeler's don't get into scratch building is the quantity of tools and materials you need on hand. You can build a Tamiya kit with some paints, an Xacto knife, a bottle of their solvent adhesive, some decal setting solution, a small scissors and a pair of tweezers. Not so with scratch-building. Since you don't exactly know how something's going to go together before you design it, you really don't know what supplies you're going to need to complete it. Therefore, you end up with a vast supply of specialized tools, clamps, paints, and adhesives. It's the latter that I bring you in this white paper.

What follows is a list of all 23 adhesives and glues I actually use in my shop to build structures for my scratch-built 1:48 buildings and structures. This list is not exhaustive since the world of adhesives is vast, but these are mine.

SOLVENT-BASED ADHESIVES:

The list starts with the most useful cements for building plastic models, solvent cements. I predominately use Tamiya's Extra Thin and Extra Thin Quick Set for 90% of my styrene to styrene assembly. I usually apply the cement to the parts after they are assembled depending on capillary attraction to draw the cement deep into the joint. I find that if you need more than 2 applications things start getting a bit squirrely, with the plastic melting too much and the parts starting to move around and even dissolve a bit if they're particularly small.

All solvent glue bottles can tip and spill with often disastrous results. In fact, my very first model building experience was traumatized by solvent cement. It was my 8th birthday and my first model was the Revell Missouri (BTW: it was first model Revell made with their own molds). I couldn't wait to start building it and did so one the living room floor with the bottle of Tes-tor's Liquid Cement sitting in the box top. The bottle spilled, and in



my panic, picked it up and sat it on a finished wood table on top of a piece of Kleenex. It spilled again...of course... but this time wrecked the table's finish. I headed upstairs to hide in my room, but it didn't work and I deserved the spanking that I received. Regardless: it didn't stop me from becoming a real model builder. I've recently built a holder to keep Tamiya Cement upright at all times. The bottles are further secured by some RC Servo Tape.

If I have a large surface or very long joint that needs glue applied BEFORE the parts are put together I resort to old-school Testor's Tube Cement. With its longer drying time it provides and its ability to bridge some small gaps, it works well in these situations. It tends to leave strings, and if applied too heavily, ooze out onto the surface, and it's very easy to get where you don't want it.

Another solvent cement sold by MicroMark is G-S Hypo Cement. It smells like a typical solvent based gel, but comes in a tube with a capillary nozzle facilitating very precise placement of the adhesive, so it good for working with clear parts where you want precise control. Being solvent based, it will craze plastic.

POLYVINYL ALCOHOL (PVA) AND ACRYLIC GLUES:

PVA is typified by Elmer's white glue which I don't use. I do use Aleen's tacky glue, a more gel-like product that has good initial grip so you don't necessarily require clamping. Although like most glues in this family, when you can clamp, do so. Full-strength drying time to is overnight, but it will set up pretty well in an hour or so. However, since I'm impatient, after using the Aleen's I will run a little thin CA into the joint. The moisture in the Aleen's (it is water-based) sets the CA quickly, locking the joint so I can de-clamp sooner. Then the Aleen's will continue drying at its normal rate. Another product which I started using recently is Pressure Sensitive Adhesive from MicroMark. It's a very fluid produce that is water-soluble until it sets, so brush cleanup is easy as long as it's wet. When dried, I soak the brush in acetone. You apply a thin coating to one part, let it haze over and then stick the two parts together. It makes a very clean joint with no oozing or excess, and is particularly well-suited for gluing dissimilar materials together where neatness really counts. This is especially useful when gluing on acetate or clear styrene window glazing to non-styrene window frames, or any kind of lamination or signage.

Closely related is MicroScales Foil Adhesive. They apply and work the same, but MicroScale's viscosity is even lower so it forms a thinner film better suited for thinner foil applications on models. MicroMark's product also works as a foil adhesive, but I would only recommend it for heavier foils where surface finish is not as critical.

The last products in this group are produced by Woodland Scenics specifically to glue scenery materials to layouts and dioramas. The fluid variety is applied with a sprayer to ground cover or ballast after they are wetted with "wet water" usually water mixed with a few drops detergent, window cleaner or isopropyl alcohol so it breaks the adhesives surface tension. It takes a few hours to dry, dries clear and really holds stuff in place. The thicker variety is used to hold tress, bushes or other bulkier materials in place, and it too dries clear. These products are almost identical to other "white" glues on the market.

CYANOACRYLATES (CA)

To the layman they are all super-glues, and came on the scene in the 1950s as Eastman 910 as a specific glue for optical lenses invented by Kodak. They found their way into all sorts of industries. They were even being used in metal working to glue very thin pieces of metal to the work tables of surface grinders where you couldn't hold the parts any other way. In the 1980s, they invaded the modeling market, and revolutionized the art of building balsa aircraft. No longer would you be using classic Ambroid airplane glue and waiting for hours to set up. Now you could build a wing structure almost as fast as you could put the the ribs in place. CA on balsa works fantastically!

You can use thin CA to turn balsa into a composite solid by just letting it soak into the fibers. The surface area cures the CA almost instantly. It's a great way to harden threaded holes in wood where you want to be able to repeatedly remove screws and don't want the threads to disappear.

Thin CA is the best way to hold E-Z Line Lycra elastic thread when rigging models. E-Z Line is actually a multi-stranded product made of extremely fine fibers. These fibers wick the thin CA and, again, due to large surface area, cures it almost instantly. You can attach an E-Z Line strand to another at 90 degrees with just the tiniest touch of thin CA. It will join immediately.

For modeling, we now have many varieties, including classic thin, medium and thick, tube gels, and CAs specifically for foam and plastic. There are special varieties which include rubber compounds in their formulation which eliminates the one problem with cured CA... it is brittle. Shock will easily break the joint. If the joint is going to be stressed in ways that introduce shock, it could fail. In this case, you turn to the Epoxies. But you can use these new semi-flexible CAs. Two drawbacks: they're expensive and they're black. If you need a transparent glue joint, this won't work.

CA like liquid solvent cements, work best with the first try. If the joint isn't holding and you end up with repeated applications, things usually go from bad to worse. Once the CA is no longer sticking to the substrate, but instead is sticking to previously applied CA, the joint loses structural integrity. It's best to scrape off all the old glue and start over (if that's possible). CA works fair on styrene especially if you can rough up the surface. I use it when I need to give a little extra push to specific joints especially where solvent cement isn't working well.

It is also the go-to glue for putting photo-etched (PE) parts on styrene models and holding PE assemblies together. For this, where I used to use thin CA, I was given a tip by Brian Bunger to use thick CA, since you can place a very tiny drop on the model and it will stay put. After placing the part, use a tooth pick with a small drop of accelerator and just barely touch the joint. The CA cures instantly and the application is very neat. Try not to actually get the tooth pick into the CA since it will glue itself there and when you try and release it, more often than not, it will pull the PE off with it (experience talking). That being said, when I have to hold PE to other PE, I try and solder it whenever I can. Solder is the most permanent and trustworthy means of sticking brass to brass.

CA has a shelf life! It cures by moisture in the air and it will gradually start to thicken and lose its ability to set quickly. When you see this happening, throw it out and get some new stuff. If you need to store it for any extended period, put it in the freezer. Freezing stops CA from reacting. That's how it's made. The processing equipment where its produced is held at below freezing

temps, otherwise the stuff would glue the machines together.

One last thought about CAs. They can develop a static charge which reacts with the styrene. This can pull strings of CA off your applicator towards the model's surface in unintended places. Once CA does this, it's very hard to impossible to clean it off. Cured CA is tougher than the surrounding styrene so sanding and filing it off involves lots of care and refinishing. If you see this happening try and de-static the model, possibly by a damp toweling or some other anti-static material. Or... use a different adhesive.

EPOXIES

For those joints that need special attention regarding strength and shock resistance I turn to epoxy. Most epoxies are a two-part affairs with an epoxide and a hardener or catalyst. Epoxies have very complex and varied chemistries with an infinite variety with varying cure times from minutes to hours, room temperature to heat cured, with mechanical and chemical properties to meet many applications. Generally, the longer the cure time and/or higher heat curing the stronger the epoxy. For hobby epoxies you trade speed for strength. With my work, where I'm not building engine mounts for RC planes, I go with the short cure kind. Clean up un-cured epoxy with isopropyl alcohol. Cured epoxy is very chemically resistant. There's a special breed of Epoxy which is metallic-filled made by J-B Weld. I have been using J-B Weld as a substitute for solder when building brass and PE structures. It is another 2-part product and has a long (24 hour) cure time, but it's very stable, very strong, even in small quantities. I have used it in holding together elaborate mast assemblies after I can no longer solder them. It is much stronger, less brittle and more stable than metal to plastic assemblies using CA. Guy wires in the below image are held to the island with J-B Weld. Guys are high E guitar string.



U-V CURED

If you've to a dentist in the last 20 years or so and you've had a filling and it was where it would show, you've probably had it filled with a light-curing composite. After a few seconds of exposure, you're left with a solid that approaches ceramics in durability. These too are classified as

an epoxy with light being the energy that polymerizes the un-cured chemical. This material is now available for the DIY market in clear form from an outfit called Bondic.

It is an ultra-violet cured gel that comes in an applicator tube on one end and a small U-V LED light on the other. You put the gel where you want it and hold the light close to it and in five seconds or so you have a clear, rock-hard solid. I've seen this stuff advertised on Amazon for a while and couldn't understand where I'd use it, but finally decided to try it. For specific applications it is exceptional. Since it's transparent, and NOT SOLVENT-BASED, it is great for holding clear parts to models, such as canopies and light lenses.

Its caveat, and why it can't be used as a general purpose adhesive, is that the U-V light must be able to reach the material to cure it. So it can't be used in blind joints. But if you're putting on clear parts, the U-V shines right through and cures the material. I've used to to make very convincing search lights on model ships and where I first coat the back surface with the Molotow Chrome Pen and then apply the Bondic to form the lenses. It's a great plastic filler and works best if you fill the hole with a couple of applications curing each before next. I even used it to form tiny canopies in 1:350 model aircraft when the kit canopy was lost or broken.

POLYURETHANE CRAFT GLUES

I spent a lot of years working for a German company, Henkel. Henkel is now the biggest adhesive maker in the world (actually bigger than 3M) and they produce a huge line of adhesives for the home, industry, electronics, automotive and aviation. They are actually the largest producer of CA, and much of what you buy in the hobby shop is actually Henkel's product repackaged for private labels like Pacer Tech, etc.

I was given a big gift sampler of all their household products as a going away present when my German assignment ended. That was in 2002. I still have many of those products, and just recently found that their Pritt clear craft glue is very good for gluing mixed media parts together. An example of this would be gluing styrene trim to a building made of medium density fiberboard. Not many glues work in this case since styrene is so smooth and non-porous. Pritt is not that brittle when it dries which is an advantage in this application. It is not recommended for styrene to styrene joints since solvent-based adhesives are the only ones that work by actually welding the plastic together.

SPRAY ADHESIVES

In specific instances, I have use for 3M spray glues, especially when securing plans to a material that I'm going to cut out. I've used them to glue Bristol Board simulated road surface to foam substrate in making streets for my layout. However, in this instance I used 3M77. It did not hold up well and started letting go. It works best when both surfaces are paper-based. Another version is 3M 99. This is a much stronger, more stable product and can actually be used to laminate skins for RC scale aircraft. I've switched from 3M 77 to the 99.

STRUCTURAL ADHESIVES

While not a glue you'd use for a scale model, if you building a model railroad or large diorama, you might find these to be very helpful. I use Liquid Nails to hold my railroad track to a vinyl foam roadbed which, in turn, is held to the OSB sub-roadbed with the same general purpose structural adhesive. It comes in a caulking-style tube applied with a caulking gun. Gluing the track and not screwing it down, prevents sound from being transmitted directly to the wooden platform and reduces noise a lot. O'scale trains are big and heavy and can make a lot of track noise. After my streets failure, I "repaved" them with new Bristol Board surfaces, but this time held them down with Liquid Nails making sure first that it was compatible with green insulation foam, which it is. So there you have it. A lot of different adhesives, each with its own strengths and weaknesses finding use throughout the scratch-building processes I use in my shop.

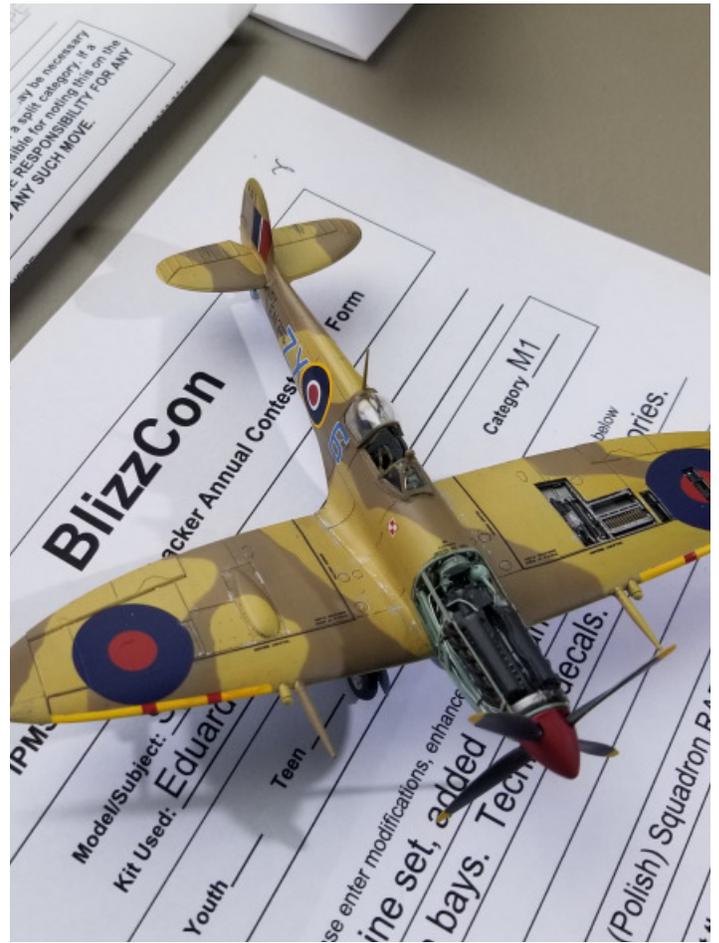
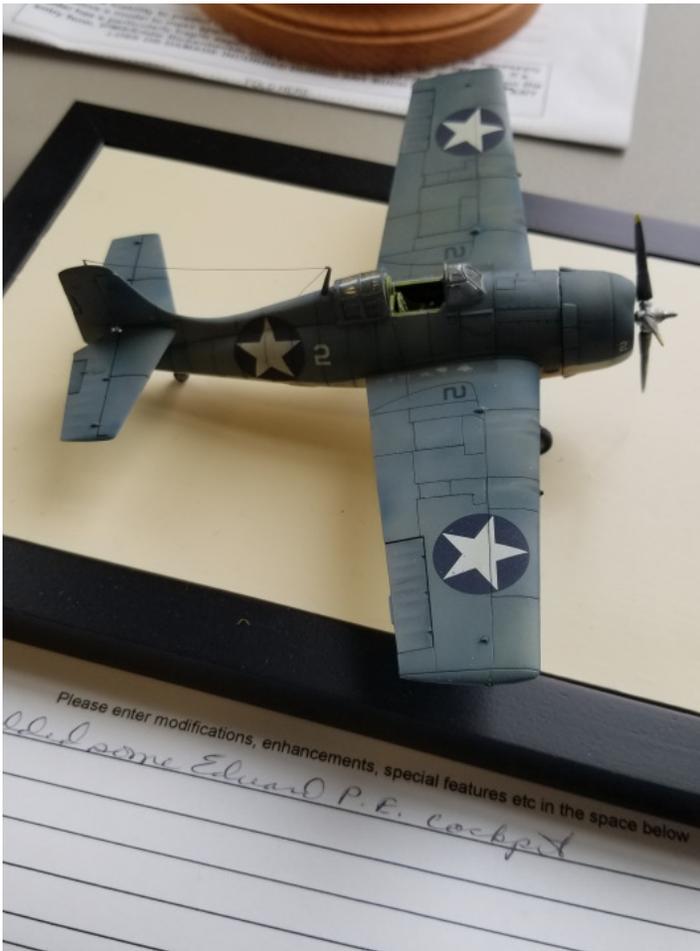
Columbus Show Report

By D.M. Knights

This past weekend, Feb. 16, 2019, IPMS/Columbus held its annual Blizzardcon. The show gets its name from being held early in the year (Feb.) and having experienced significant snowfalls on show day. Luckily, this year there was no snow, though it was cold enough for it. A number of MMCL members were in attendance, including Dr. Terry Hill, Rich Guetig and Lee Fogel. Terry and Rich both entered and walked away with awards. The show was well attended, though the number of models on the table appeared to be down a little from previous years. The vendors room was nearly full and there were deals to be had. A brisk business was done by the vendors. I can say that it was a good time as usual, topped off by a good dinner at Hofbrauhaus Newport. The following are some photos of some of the entries.







Financial Report

By Rich Guetig

| | | | |
|--|----------------|--------------------------|-----------------------------|
| Starting Cash Balance: | | <u>\$6,864.08</u> | |
| Cash Receipts | | | |
| | Date | | |
| Workshop | | \$334.00 | |
| PayPal | | \$84.69 | |
| Raffle | | \$125.00 | |
| Item | | | \$0.00 |
| Total Cash Receipts | | \$543.69 | Total Reimbursements |
| | | | \$0.00 |
| TOTAL RECEIPTS | | \$543.69 | |
| Cash Or Debit Expenses: | | | |
| | Date | | |
| Check # 7077. (E) KYANNA Rent | 1/14/19 | -275.00 | |
| 2019 MMCI Show Awards (Medallions) | | -712.85 | |
| Item | | | 0.00 |
| Total Cash Expenses: | | | (\$987.85) |
| Reimbursable Expenses: | | | |
| | Date | | |
| Item | | 0.00 | 0.00 |
| Total Reimbursements: | | | 0.00 |
| TOTAL EXPENSES | | | (\$987.85) |
| NET Monthly Increase(Decrease): | | | (\$444.16) |
| ENDING CASH BALANCE: | January | 2019 | \$6,419.92 |

WAS IT OVER WHEN THE GERMANS



Mike Matthews

BOMBED PEARL HARBOR?

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IPMS-USA National Convention
Chattanooga, Tennessee
August 7-10, 2019



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