



NEWSLETTER – January, 2014

Committee 2013/2014

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Note the meeting location.

The next meeting of BRMFC is to be held out at the flying field on **Wednesday January 22nd 2014** commencing at **7.30PM**. Please come along to the meetings and support your club and be part of the decision making process. Don't forget to bring a plate for supper.

Agenda Items for the next meeting

1. Wind Farm
2. Field Maintenance
3. 2014 Display Day
4. Xmas Function (Post Mortem)
5. Any Further General Business Items
6. Agenda for next Meeting
7. Location of next meeting

Points of interest from the last meeting

Extract of newsworthy items from the minutes of the last meeting. Note: Some events/activities may have concluded or been modified as circumstances change.

See the [December 2013](#) newsletter for the November meeting. We don't hold a meeting in December.



New Models seen at field

Mat Werner had his latest, a YAK 55M at the field on Sunday 19th January for heavy model certification.



Mat with his new 3m YAK 55M on Sunday 19th January.

As you can see it is a very large aircraft and sports a 3m wingspan. The model is by Krill Aircraft and powered by a ZDZ 180 twin cylinder petrol engine turning a 29x12 three bladed carbon fibre prop. The controls are operated by

ten Futaba S9157 servos and powered by 3 x 5Ah LiPo batteries through a power box. Radio is Hitec Aurora 9 2.4GHz. It also has a magnetic switch (ah la keyless entry) to switch it on and off.



Note the YAK's long fuselage.

It certainly has a very long fuselage with a relatively short nose moment – in a way like the F3A pattern aerobatic machines.



Wheeling the YAK out for take-off into the southerly breeze which in the morning was blowing around 30-35km/h gusting 40-45km/h. (Airport readings)

Mat put the YAK through its paces for Murri Anstis during the heavy model flight certification. As you would expect it flew extremely well with excellent performance hardly noticing the 30-35km/h SSE breeze. The model is primarily for competing in the IMAC circuit.



With a 180cc twin cylinder petrol engine the YAK gets off pretty quickly as you would expect.



The power board has a magnetic switch mounted to the side of the fuselage enabling the controls to be turned on & off by holding the key over the pickup sensor.

By the way, Mat's Katana is for sale albeit with a few bruises. A couple of weeks ago while doing some low level manoeuvres – might have been slow rolling circles when something went wrong and it kissed Mother Earth. Mat said something like "at the crucial moment he simply ran out of talent". (I can identify with that and keep my manoeuvres at a height that is inversely proportional to the square of my talent – equates to high altitude!!!)



File photo taken on 9th December 2012 of Mat's used & bruised Katana which is for sale.

Apparently it is quite repairable and would be a good buy for someone who can do that sort of work and has the time. If interested contact Mat on 0450 483 838.



In the Workshop

WACO YMF-5D

Currently I'm assembling a Great Planes WACO YMF-5D which I hope to have flying in a couple of weeks. In an effort to find out some details on the aircraft I was surprised to learn that they are being re-manufactured.



The following article has been taken from the www.wacoaircraft.com web site.

WACO Aircraft, a family-owned, American company, is the only FAA approved manufacturer of 1930's sport biplanes worldwide. Originally founded in 1983 as Classic Aircraft Corporation, WACO started off with a simple dream: To revive the Golden Era's open cockpit flying experience.

Between 1919 and 1947, in the midst of the Golden Age of Aviation, the WACO Aircraft Company of Troy, Ohio was the first family of aircraft manufacturing. Between World War I and World War II, WACO built almost twice as many aircraft as any other manufacturer, with more WACO's registered than the aircraft of any other company. The jewel of WACO's efforts, and their last open-cockpit model for the barnstorming pilots of the 1930's, was the WACO YMF. This gorgeous yet rugged biplane offered absolutely delightful flight handling qualities.

In 1983, the founders of Classic Aircraft Corporation in Lansing, Michigan were determined to reincarnate the WACO YMF. In the history of aviation, no company had ever taken a 50-year-old design and manufactured it as a new FAA certified aircraft.

To accomplish this mission, Classic hired experienced engineering talent from Piper, Taylorcraft and Ford. While

maintaining the sanctity of WACO's original masterful design, this team of proven professionals modernized the aircraft with more than 300 engineering changes, redesigning over 1400 drawings and building new tooling for production.

*In March 1986, the first **WACO YMF Classic** rolled off the assembly line and received FAA certification under the original WACO type certificate. With more than 5000 labor hours of fine craftsmanship hand-built into each aircraft, it's no wonder the WACO YMF was hailed as an aeronautic thoroughbred. This unique biplane was not a rebuild or a kit plane, but a brand new FAA certified production aircraft, with such improvements as the use of sturdy 4130 steel for the fuselage frame, modern hydraulic toe brakes and advanced avionics.*

In 1991, the company introduced its first WACO YMF-5C Super. This superior modern day barnstormer boasted even more improvements, such as greater internal width, more legroom, increased useful load, a balanced rudder and large front entry door.

The company moved to Battle Creek, Michigan, in 1999, and into the current facility in 2000.

Most recently, the company's newest model, the WACO YMF-5D Super, has taken the aviation community by storm. Even with this exalted pedigree, the latest WACO model represents a new pinnacle in aeronautics. Sharpened, refined and rethought in every minute detail, this elite aircraft offers thrilling levels of performance combined with the luxurious accommodation for up to three people.

Today, owners Peter Bowers and Jon Bowers, along with a talented team of craftsmen, carries on the WACO tradition. The company is constantly re-engineering, modernizing and updating their designs to provide the safest, most reliable, highest quality biplanes available. For countless years to come, this one-of-a-kind aircraft manufacturer will continue to provide the world's finest, most exhilarating biplane.

Browsing the sales section of their web site reveals that a new YMF-5D will set you back about \$US500k plus options.

Anyway back to the model, the Great Planes ARF kit is referred to as the WACO YMF-5D Classic which I would interpret is modelled on the latest current production aircraft rather than the original 1930's version.

It has taken a bit longer than anticipated to get ready. Trouble is I always make changes with the view to improve the longevity of the finished product. As we all know changes can have a snowballing effect which drags the project out.

I decided to fit an OS155 Alpha four stroke which hopefully should give it good performance particularly in the vertical manoeuvres. A 120 four stroke or 30cc petrol are the recommended engine sizes and the kit comes with

instructions and parts for both. The OS 155 has the same mounting pattern and critical dimensions as the 120 but is still bigger around the cylinder and has a different muffler which is larger than the 120 but nowhere near the size of the OS 200. It took a while to decide on the best way to fit the muffler to the side mounted motor to minimize cutting the cowl. I have used an OS 90 degree adaptor. (It's actually a few degrees less than 90.)

Over the years I've seen many models with wheel spats that seem to give trouble. To overcome that I've fitted a frame fore and aft of the wheel to stiffen the fibreglass spat body and also an outer side plate to pick up on the axle. That has been done on my Great Planes Super Stearman & Shoestring and has proven successful after hundreds of flights. Also a piece of bicycle tube rubber sandwiched between the spat and aluminium undercarriage where it bolts on prevents chaffing.

Also beefed up some of the internal frames particularly around the undercarriage mounting plate. I think they cut out excessive material in some of the most highly stressed areas using their CAD driven laser cutting. Once again I beefed up these areas in the Super Stearman & Shoestring before they were flown.

The tail wheel wire snapped off on the Super Stearman after 25 flights so I fitted an Ohio tail wheel assembly. The WACO comes with the same wire tail wheel albeit a thicker wire and probably would be okay. Anyway I decided to fit the same Ohio assembly because it works well and takes the ground loads off the rudder. When it came to fitting the supplied tension springs you wouldn't believe it but they had very differing spring rates and I couldn't get the wheel centred. Aldi came to the rescue!!! Some months back I bought a packet of 200 assorted springs and there were some the right size and spring rate. Only needed to cut a few coils off each and they fitted perfectly providing a centred tail wheel. What's more I have a good supply of spare springs.

Because of the heavier tail wheel assembly and my experience with the Super Stearman CofG I decided to move the servos further forward just in case it might be tail heavy. So far it is looking good and the fuselage alone balances at the designated CofG. Hopefully it won't be much longer before it flies.

Messerschmitt Me 163 Komet

By Glenn White.

Many years ago (too many to mention) I stumbled onto a set of Me 163 Komet plans and that started a fascination with this rocket powered aeroplane. From memory this was only the third scratch built model I had attempted, the plans were by Denis Bryant and easy to follow. However it wasn't an easy model to build, it was very time consuming, the wings are built on a jig to ensure correct washout and every rib is different. The fuselage is essentially built in two halves (they looked more like boat keels at that stage) you get lots of practise at planking.

Once they are completed they are joined together, a 25mm tube is run through the centre; this catches the exhaust from the motor and directs it to the rear to exit the model as per the full size. The Komet used a detachable dolly to get it airborne, I cheated a little with this, made the wheels bigger with a wider stance. This gave me a little more control of the model on the ground.



This Komet was a great success and flew for many years. It was retired suffering slight wing damage after flying through a gum tree up at Mildura, with a hole in the wing back to the spar and a part of the tree sticking out of it still continued to fly. The reason I didn't repair it was that the fuselage was becoming dangerously oil soaked.



This is the repaired Komet which came to grief during the test flight at Bowes Road Ross Creek back in the late 1990's. Looks great, let's hope it flies well. Ed.

After having such a good time with the Komet I decided to build a bigger one! The original plans were enlarged by 20% taking the wingspan to 80 inches. This is big for a delta wing; with the wings being un-detachable it makes transporting the model difficult. The model was built to take an OS 60 Hanno Special rear exhaust with a tuned pipe. Conveniently the tuned pipe fitted up the central tube running through the fuselage.

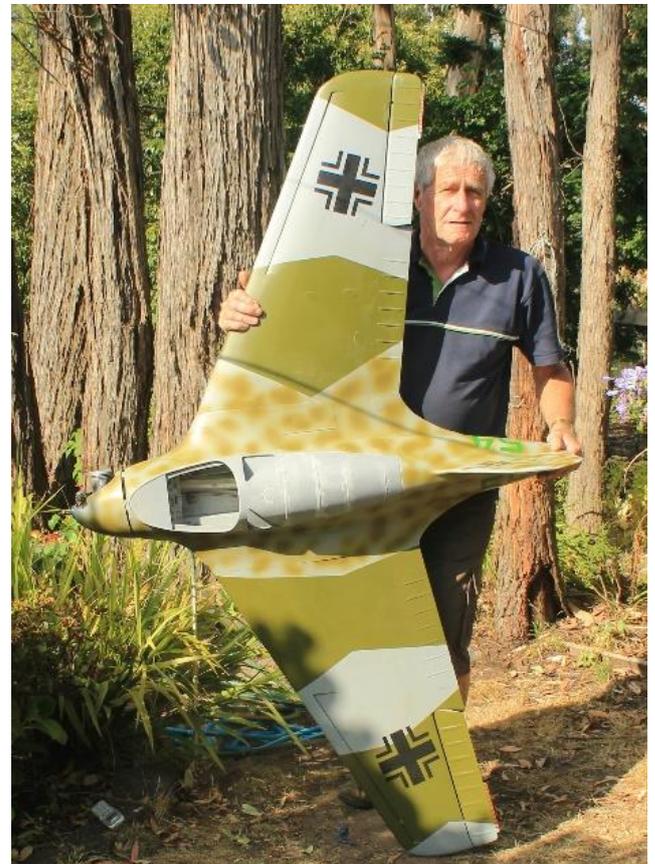
On the day of the test flight I was unable to adjust the length of the pipe and could not get the motor properly tuned or "on song". This was a big model for a 60 but I gave it a go, even down on power the Komet lifted off and gradually gained height (I was all the time hoping for the motor to pick up. What's the saying? If it's not right on the ground it won't improve in the air)! It flew around for a while without much authority so I set it up for a landing,

expecting it to come in like its smaller predecessor, a piece of cake. Wrong!

When I throttled off she started to descend at about 45 degrees. This was fine but I was holding FULL up elevator, rather than have her hit the ground at that angle I went back to full power. The nose gradually came up but as I banked to turn it went into a shallow dive and with full power and full up elevator continue to descend into the blue gum plantation at Bowes Rd.



To me there is nothing worse than losing a model on its test flight especially a scratch built one. On retrieval it hadn't come off too badly, the only damage was to one wing, which was completely snapped off. What was left was put at the back of the shed to be looked at later.



This shot illustrates the size of the model which is around 80 inches. That makes it about 22% scale. Glenn loves challenging models, hence the worried look!!!

I never got around to repairing it; instead I built another Komet the same size as the original. This was the Komet I was used to and it flew really well, but after several flights catastrophe, I had a mid-air resulting in considerable damage again mainly to one wing. Again what was left of the model was put aside to be looked at "later". Sometime later Graham Waterhouse asked if I would like him to repair both of them, I thought why not.

The smaller one was repaired first and test flown at Hamilton in 2012. That was a test flight to remember, I was lucky to get away with it. On close inspection the new wing didn't match the other, the washout was missing, all the fine-tuning of the control trims and packing made no difference, it was a cow to fly. Graham has since taken it back to see if he can get the correct washout built in.



The Komet is powered by a Webra 120 2 stroke this time instead of the OS 60 Hanno Special. Exhaust exits through the aluminium tube running through the fuselage.

In the meantime he has finished the wing on the larger model, I have been building a new turtle deck for it and Gavin is forming a canopy for me. Next is to install the radio, a new Hitec Aurora 9x I hope. I have squeezed a Webra 120 two stroke in so it shouldn't lack for power. All being well it will not be long before you see it out at the field. Hopefully I will have more success with it this time.



The following is a very brief description of this remarkable little aircraft.

Messerschmitt Me 163B Komet, designed by Alexander Lippisch. It is the only rocket-powered aircraft ever to have been operational. In July 1944 reached a speed of 1,130 km/h (world record).

Over 300 aircraft built but proved ineffective killing more pilots than the enemy!!!

Fuel: - C-Stoff (hydrazine/methanol) and T-Stoff (hydrogen peroxide)

Both C-Stoff and T-Stoff were toxic, pilots had to wear protective clothing as contact with either would result in severe burns. Many exploded on the runway leaving nothing but a large crater to indicate where they once were.

Their main purpose was to protect German factories from high altitude bombers; they had an incredible climb rate from zero to 30,000 ft. in approx. 2 minutes. The rocket fuel only lasted about seven minutes giving it a range of 40 km.

With no landing gear the Komet had to land on an extendable skid, if this skid failed to extend or as in some cases was simply forgotten to be operated by an inexperienced pilot would result in a broken back.

General characteristics

Crew: 1

Length: 5.98m (19ft 7in)

Wingspan: 9.33m (30ft 7in)

Height: 2.75 (9ft 0in)

Powerplant: 1 x Walter HWK 109-509A-2 liquid fuel rocket, 17 kN (3,800 lbf)

Performance

Maximum speed: 959 km/h (596 mph)

Range: 40 km (25 mi)

Service ceiling: 12,100 m (39,700 ft.)

Rate of climb: 50 metres per second (9,800 ft/min) at 1000 meters: 160 metres per second (31,000 ft/min) at 12,000 m.

Wing loading: 213 kg/m² (43lb/ft²)

Thrust/weight 0.42

Armament

Guns 2 x 30 mm (1.18 in) Rheinmetall MK 108 cannons (60 rpg)



Tips & Tricks

Ryobi Scroll Saw

I (Editor) have a Ryobi scroll saw which was bought back in 2000. It has an inbuilt blower which keeps the dust away from the cutting line. This ceased working some time ago when the rubber bellows perished. It wasn't a big deal that the blower didn't work but annoying at times when the cutting line is obscured by dust.

I searched online for the replacement part and the only sites I found that stocked them were overseas (USA & UK). Fortunately the sites had a parts breakdown of the scroll saw which enabled the part number for the bellows

to be located. They were cheap enough like \$US1 but the postage from US was ridiculous. I then found the Ryobi Australia web site and it said to order spare parts for Ryobi equipment through Bunnings Special Orders Desk.



Armed with the part number (S16011019) from the parts breakdown I went down to our local Bunnings store and ordered a couple of the rubber bellows through the Special Orders Desk. This was on Monday 23rd December and on Saturday 28th December I received an SMS from Bunnings to say the order had arrived. I thought that's pretty fast over Christmas break and all.

After fitting the new bellows which is an improved version of the original (has four sections instead of three) it blows the dust away and keeps the work piece nice and clean so you can see the line.



Replacement dust blower bellows for Ryobi scroll saw ordered through Bunnings Special Orders Desk.

I also wrap masking tape around the top of the blade to prevent cutting fingers when releasing the blade. What

made me think of that you ask? A cut thumb taking out the blade to do a hole. This happened while holding the top of the blade and pushing down on the blade upper attachment – the whole arm pivoted down and the blade cut into my thumb – ouch! And guess what, that's the sharpest part of the blade because it rarely if ever gets used. The tape also identifies which way the blade is fitted.

Secondly, I replaced the flimsy plastic table insert around the blade with a piece of aluminium. Stops the work piece bouncing around and improved the cut out of sight. Of course the table can't be tilted more than about 10°, but I find the majority of cuts are with the table flat anyway.

The third improvement is to have a piece of plywood handy that can be clamped to the table and used as a fence. A few graduations using a marking pen on the table also helps to align it straight with the blade so that the blade will track true. Works great for balsa and thin plywood. Anything heavier then I use the free standing band saw.

While I was replacing the bellows I thought why not try and straighten the alignment of the safety guard. Ever since new it has been at an angle to the cut direction. It didn't matter that much but you tend to sight along it as you feed the work piece. Everything seemed to be in alignment with the slider post, i.e. the machined flats but as the thumb screw was tightened it swung around a few degrees. Anyway, I took the screw out and ground a cone shape on the end of the screw so contact would be central. I put the screw back in, tightened it and to my delight the guide was now straight in line with the cut direction – nice to have a win occasionally.

Servo Y-Lead defective

Whilst setting up the four aileron servos in my WACO YMF-5D I came across a defective Y-Lead that had never been used and just out of the packet.

With the servos mounted to their installation plates and sitting on the work bench I plugged in a Y-Lead to the receiver aileron channel and set up the throws for the bottom wing making sure the servo arms are central and the same for right and left. Next the top wing which requires another Y-Lead and a slave channel which I chose Aux4 on the JR receiver. I set up the programmable mix with one servo plugged into the Y-Lead and made sure that the Aux4 channel switch is inhibited and the throws were in the right direction and the same as for the master aileron channel. All good I thought.

Now for a final check with the four servos plugged in – two servos for the bottom wing plugged into aileron channel via a Y-Lead and two for the top wing plugged into Aux4 channel via the other Y-Lead. Aux4 (slave) is not working – what has gone wrong with the mix, so back through that to work out why it stopped working. Then in frustration I plugged one servo directly into Aux4 and it worked.

Plugged the Y-Lead back into Aux4 and one servo into one of the leads and it worked, unplugged and connected to other lead and it didn't work. With both servos plugged in I squeezed the leads under the heat shrink and one of the servos jumped erratically so something definitely wrong. A check with a multimeter suggested that one of the black wires was open circuit.

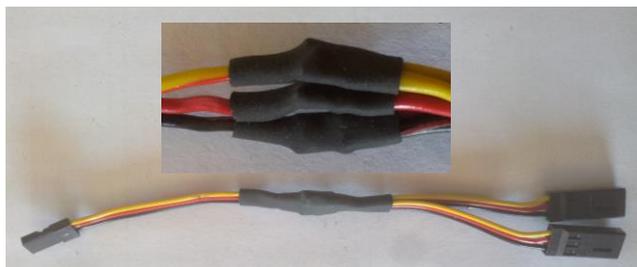


Inset, you can see the open joint on one of the black leads. With the heat shrink tubing everything looks peachy but beneath one never knows how good the soldered joint is.

I removed the outer heat shrink; all looked okay then the inner heat shrink around the black wire which revealed a dry joint – well more than that, it wasn't joined at all.

After seeing that, I don't really trust Y-Leads anymore and wonder whether they could be responsible for some unexplained disasters at flying fields. I will repair this lead and it will then be the only one I have that I'm sure is okay.

I don't think the brand will make any difference – to my knowledge they are all soldered rather than crimped. A crimped wire joiner would be much more reliable in a mass produced product. After all the plug connectors are crimped not soldered. These small wires aren't easy to solder as I found out; trying to get three ends together with a length of heat shrink tubing in place while applying sufficient heat to ensure the solder flows into the wire strands without melting away the insulation. To do the job properly on this lead I had to strip off the heat shrink on the other two wires as well. That meant unsoldering two good connections as it turned out (and expected) so the heat shrink could be replaced.



The repaired Y-Lead with individual wires insulated by heat shrink tubing and then wrapped with an outer heat shrink tubing for mechanical strength.

The obvious danger here is that it might have worked for a while and failed in flight. In this case the ailerons on the

bottom wing would have worked and hopefully saved the day.

The really concerning aspect is that it stopped both servos from working when only one lead was open circuit. When the servo connected via the open circuit lead was disconnected then the other servo worked.

Fortunately the faulty joint was bad enough to fail right from the start rather than working initially and failing in flight.



Fire Safety Awareness

This is a modified reprint of last year's fire safety awareness message.

With the recent fires around the state still fresh in everybody's mind it is a timely reminder to be extremely careful when attending the flying field in these hot and dry conditions.

Remember our club has a no activity or flying on days of total fire bans but we need to be doubly cautious during the summer period. Usually fire ban days have strong wind but last week during the heat wave there were a number of total fire ban days that would have been quite okay to fly due to the light winds.

If any mowing is taking place the knapsack needs to be on the mower!!!! If it is hot and windy then leave it for a cooler day.

Smokers please use the sand buckets!!!!

When driving into the flying field stay on the short cut grass.

Please use extreme caution when flying electric, petrol or methanol, make sure your batteries are in top condition so as to keep any unwanted arrivals from happening!!! And always do a "range check" at the start of each flying day.

Just remember we all need to be careful and vigilant as one careless act can have serious ramifications.



Coming Events

Don't forget we have two events at our field over the next couple of months.

VFSAA Scale competition – Sat. March 8th

BRMFC is hosting a round of VicScale (VFSAA) scale competitions on Saturday 8th March. Yes it is Saturday, that way it doesn't interfere with normal Sunday flying arrangements.

Basically for us it means we want our members to compete. Secondly the field needs to be prepared –

fortunately (and unfortunately) the grass is not growing now due to the dry conditions.

Thirdly, we need a small team to run the canteen. Normally we provide sausages, hamburgers, hot & cold drinks.

Annual Open Day – Sun. March 30th



This quite possibly will be our last open day at our Yendon field with the looming construction of the wind farm rumoured to be underway by this time next year.

Hopefully the weather gods will be kind to us this time. From memory last year we endured a fairly strong NNW wind which abated somewhat during the afternoon otherwise it was a pleasant day.

Once again the club needs the support of the members to run the event and also invites members of other clubs to bring their models and have a great day.

Hopefully we will get more event advertising this year and hence better attendance from the public.



Event Calendar

- Dec 28th – Jan 6th MAAA 67th Model Aircraft Championships – Albury/Wangaratta
- Feb 2nd 2014 VFSAA Scale competition – State Field
- Feb 15th (Sat) VFSAA Training day – State Field
- Feb 22nd (Sat) VFSAA Scale comp – GMAA, Dog Rocks
- Feb 28th-Mar 2nd Fun Fly weekend – Warrnambool
- March 8th (Sat) VFSAA Scale competition – Yendon.**
- March 30th 2014 BRMFC Annual Open Day – Yendon**
- April 6th Model Engines Day – P&DARCS
- April 12th/13th F3A Pattern Aerobatics Ballarat – Yendon (Model Engines Trophy)**
- April 25th ANZAC Day War Birds Hamilton – HMAC
- April 25th-27th WW2 & Military Scale Event – Wagga
- May MAAA Council Conference – Northern Territory.
- May 3rd/4th VFSAA State Champs – BRCAC, Bendigo
- May 17th/18th Autumn Scale Rally Albury – TCMAC.
- June 7th/8th VicScale Trophy weekend – Shepparton

That’s all for now. Good flying.
G.W & R.C.

Time for some Frivolity – the sealed section

Note: If easily offended please skip this item. It contains adult themes, but no crude language or nudity.

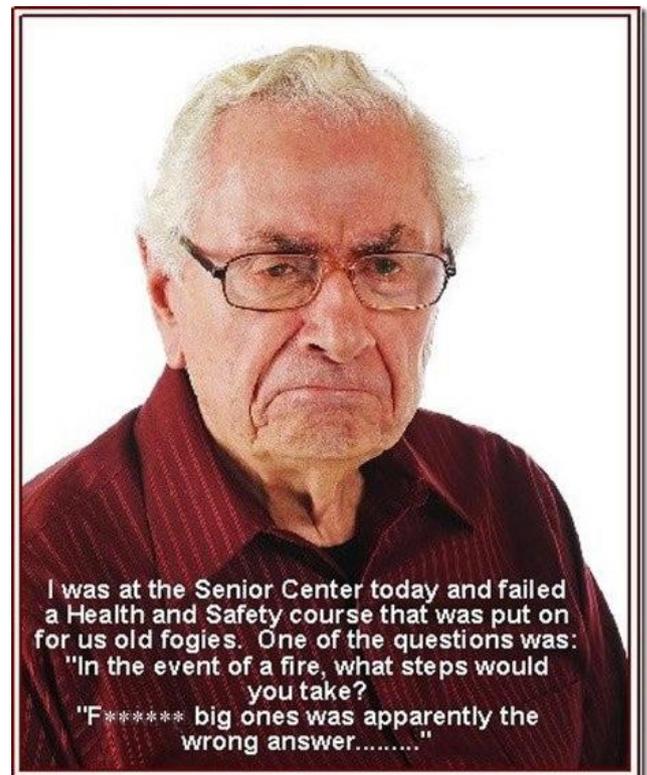


This Contains Adult Material. Read It, Delete It, But Don't Give Me Any Crap About It!

A man approaches a young woman in a shop. He says "I can't find my wife, can I talk to you for a few minutes?" The woman says "Sure, but do you have any idea where your wife is?"

"Not a clue," he says, "but whenever I talk to a woman with assets like yours, she appears out of nowhere!"

Fire drill for Seniors



I was at the Senior Center today and failed a Health and Safety course that was put on for us old fogies. One of the questions was: "In the event of a fire, what steps would you take?" "F***** big ones was apparently the wrong answer....."

