January 2012

SCALE DIMENSION NEWS

Official publication of the Scale Squadron of Southern California



Commanders Note
Up Coming Events
Members Gallery
Plane of The Month

Building Tips
Klingberg Recognized
Something To Think About

SCALE DIMENSION NEWS

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MEETING Monday January 9,2012 7:00 PM

Green Valley Adult Clubhouse 17250 West Los Jardines Fountain Valley, CA 92708

EVENTS





AMA Expo

January 6-8, 2012 Ontario Convention Center

Horizon Hobby Meeting

January 4, 2012 Chino Airport

Convair Arrival Party

January 14, 2012 Yanks - Chino Airport

Arizona Electric Festival

January 26-29, 2012 Mesa, AZ

PVMAC Warbird Race

March 10, 2012 Prado Airpark, Chino, CA

Gunsmoke 2012

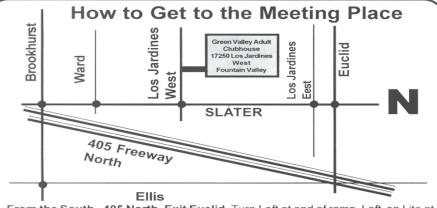
March 2-4, 2012 Mesa, AZ

1/8th Air Force Fly-In

March 31 & April 1, 2012 Cave Buttes, AZ

RCX Expo

April 28-29, 2012 Long Beach, CA



From the South - 405 North, Exit Euclid, Turn Left at end of ramp, Left on Lite at Slater, Pass Los Jardines East, Turn Right at light on West Los Jardines. Go thru Stop sign with school on left. The Clubhouse will be 1/2 block on your right

From the North - 405 South, Exit Brookhurst North, Turn Right at ramp light to Slater, turn right, Pass Silky Sullivan's on your left, FV Police Station on your right, Pass Ward, Left on West Los Jardines at the light, the Go thru Stop sign with school on your left. Clubhouse will 1/2 block be on your right.

SCALE DIMENSION NEWS



COMMANDER'S MISSION BRIEFING

Mike Greenshields

MikeGreenshields@gmail.com

Dear Scale Squadron Members and Friends,

January 2012 marks a new, exciting year for this accomplished club. I'm looking forward to every meeting, every flying event, every special event and contest we have planned. From our February "2012 Kick-Off Celebration Hangar BBQ" to our June Scale Fly-In, every event is expected to be fun for everyone.

PLEASE review the Squadron calendar of events. Don't Forget the AMA Expo, Feb BBQ, April RCX Scale Competition, June Fly In, as well as all of the other great events hosted by PVMAC, OCMA, Scale Masters, and AZ's 1/8th Air Force events. There's NO SHORTAGE of exciting events. Please keep in mind there's plenty of volunteering that is needed to make these events happen. We need YOU to ensure each event is a success!

For those reading this whom many not be familiar with the Scale Squadron, please check out our website for more details. However, I'd like to point out a couple of highlights. First, if you are interested in scale modeling in any way, WE are the club for you. From bashing ARF's to make them "you're own", to sharing advanced modeling techniques, the resources and knowledge of the Squadron are unmatched. But what makes the Squadron

GREAT is that R/C pilots who are new to scale modeling are welcome with open arms. Frankly speaking, that's what brought me here. I had an interest in scale modeling, I obviously LOVE aviation, and the club members made me feel welcome from the very first visit. I've learned so much from this dynamic and experienced group of modelers.

We fly at OCMA/Black Starr and PVMAC. To fly at the locations, you also have to be members of those fine organizations. It's a GREAT relationship we are thankful to have and both fields are simply fantastic.

Come to a meeting, check it out!

This month's message was hard to write. On one hand I know many new people may be reading this information about our club for the first time and of course. I'm VERY excited about the club activities in 2012 and am overflowing with enthusiasm for the club, new membership, and our activities. But I feel this message should be about members lost. December 2011 marked the passing of two people I'd call "Squadron Family" who we all liked very much, looked forward to seeing at meetings and at the flying field, people who I can safely say we all loved like family.

Karen Casey, Larry Casey's wife, passed a very short time after our

December meeting. We're lucky to have had this one last chance to have seen her and have spent time with her. I for one found her full of life and enthusiasm. I was shocked and saddened when I got the news she passed away and I know she will be missed by all of us.

Phil Gross was overcome by cancer at the end of Dec 2011. It was clear to everyone Phil loved modeling. It was that simple. He joined in for club events, was first in line for our "group builds" of models for magazine review, and had endless creativity. Phil was a decent guy who was liked by all.

Our sympathy goes out to their family and friends. These are people who were loved and respected. They will be missed by us all.

Just as we mourn our lost members ending 2011 with melancholy and a sense of loss, we celebrate the start of what promises to be a GREAT 2012 for the Scale Squadron of Southern California. I'm honored to be the Commander (club president) of this fine organization. I know we're all looking forward to working together to make everything we do fun and successful. I'm looking forward to seeing some spectacular airplanes built and brought in by all of you this year!

We'll see you at the January General Meeting with your 2012 projects!

-Mike Greenshields

MEMBERS GALLERY



Randy Wilber showing off his Red Lion model from BH Models



Newest Squadron member Wayne Decosa full of enthusiasm about scale airplanes.



Larry Wolfe showing off his craftsmanship with this scratch built Citabria.



Paul Lee giving us the run down on his SBD Project.

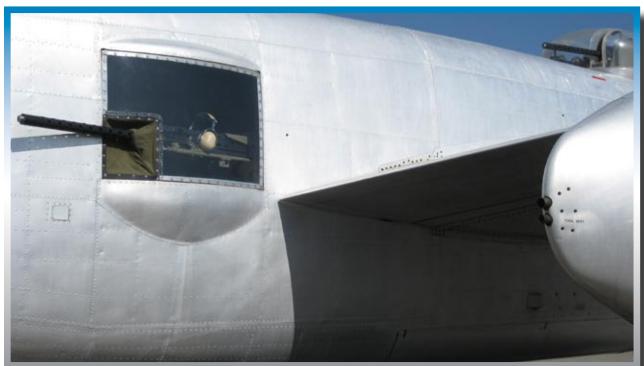


Larry Klingberg showing off his near completed Church Midwing.



The December meeting was one to not miss. Appreciation awards were passed out along with many wonderful prizes for winners.

WHAT IS THIS AIRPLANE?



Can you identify this airplane? That is great, but don't tell your buddies. At the next general meeting we will give you a piece of paper for you to write your answer on. Your answer will go in to a drawing for the night of the meeting. In the past Hobby People have donated prizes for this drawing.

The next Squadron newsletter will contain detailed information about this ariplane for your reading pleasure.



Gordon Truax and Joni Whitsitt showing the Christmas spirit.





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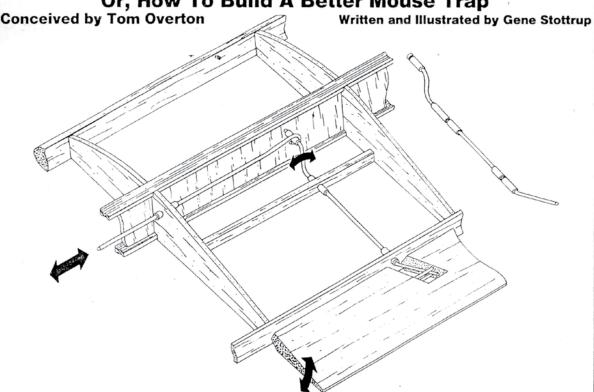


www.scaleaviatorint.com

BUILDING TIPS

INTERNAL CONTROL SURFACE—— ACTUATION SYSTEM

Or, How To Build A Better Mouse Trap



t has been said that if you can build a better mouse trap the world will beat a path to your door. Well here's the better mouse trap but don't beat that path to my door. Tom Overton, of the South Bay Soaring Society, conceived this idea and made a model which is incredibly slop-free, of a system for actuating control surfaces internally. His method uses no external control horns or visible pushrods. Control horns are unsightly and produce drag plus they require an ugly hole in the fuselage for a pushrod to exit. The geometry stays true at the intersection of the bent wire and the two parallel wires (in the control surface) as it is deflected, there is no binding!

Below is an illustration of the system in a built-up wing but it can easily work just as well in a foam wing. This can also work inside a fuselage to actuate a rudder very easily. Here are several things to keep in mind as you build:

- (1) The angled bend in the wire (at the control surface) must occur at the hinge line. You could put two wheel collars on the wire (and the brass sleeves) before bending. Instead of wheel collars you could put on two additional pieces of brass tubing and after the bend is on the hinge line just instant glue the two inner tubes to locate the wire. See the illustration.
- (2) The angled bend in the wire (at the control surface) is 30 degrees. This translates to 30 degrees deflection each way.
- (3) It is important that the bends in the ends of the wire be at 90 degrees to each other. In other words, when the crank is vertical the angled bend should be horizontal. Differential throw (which counter adverse aileron yaw) could be introduced here but I feel it is best created at the servo where the motive force is greatest.
- (4) The sleeves (bushings) should be of different material than the wire. This is to prevent a phenomenon known as galling. The wire will probably be steel and the sleeves brass. Secure the main rod (coming from the servo) to a brass sleeve on the crank very well --- no slop allowed. Consider capturing this sleeve on the crank with collar or tubing to prevent "walking off."
 - (5) It is important to lubricate "metal to metal" interfaces to reduce friction. Use grease.
- (6) The two wire rods in the control surface need to be parallel and glued in very well. Put in one and let the glue dry, then install the second using two pieces of scrap rod temporarily as spacers. The two wire rods that get glued in could be sleeved with NyRod tubing or something other than metal if you are concerned about radio noise or galling. How about Delrin rod?
 - (7) Don't mar the ends of the wire as you bend it and be sure to have everything slipped on before bending.
 - (8) Put a hinge in the immediate vicinity. This is a good idea near control horns too.

This system is being used to actuate the ailerons in the wings of my Sea-Gull slope soarer. Having seen Tom's model I am very impressed with the straightforward concept for internally converting linear motion into rotary with a pushrod. Torque rods can do this, but with two part wings or gull bends, a pushrod which can be flexible has some nice advantages. Congratulations Tom and thank you.

PLANE OF THE MONTH Macchi C.202



The Macchi C.202 Folgore ("Thunderbolt") served as one of the top Italiandesigned fighters during the critical middle years of World War 2. The C.202 series, powered by an inline engine, was a further Macchi development of the radial-engined C.200 Saetta monoplane fighter. The C.202 was instantly improved by way of a license-produced version of the German Daimler-Benz DB 601 series engine with Alfa Romeo handling local Italian production as the RA-1000-RC-411. Alongside the Fiat G.55 "Centauro", the Macchi C.202 "Folgore" proved one of the best Italian fighter designs of the war.

C.202 Origins

The original Macchi C.200 "Saetta" fighter series developed by Macchi engineer Mario Castoldi suffered from an underpowered radial engine, hampering performance and still using an open-air cockpit from a bygone era of flight. As such, Castoldi took to improving his design as early as 1938 while production deliveries began in 1939. However, it would not be until 1940 that a better powerplant became available - the German Daimler-Benz DB 601 A-1 series inline engine - and this was fitted to a base C.200 Saetta body with some modifications to the airframe. The cockpit was now enclosed and the fuselage refined over that of the original model. The wings, undercarriage and tail section were all retained from the original C.200 design. Resulting evaluations shown the new design to be quite

promising with excellent performance to boot - proving Castoldi's original design sound just lacking in a suitable powerplant. First flight of the prototype was recorded on August 10th, 1940 and subsequent testing ensued. The new model was shaped under the new designation of C.202 "Folgore" and the Italian government quickly ordered the type into production using an Italian license-built version of the German engine (importing the German engine was a difficult proposition under the ongoing Allied bombing campaign). To facilitate production efforts, both the C.200 and the C.202 were produced side-by-side in Italian factories - the C.202 essentially the direct successor to the C.200.

The first production batch of C.202s entered active service with the Italian Air Force in the summer of 1941, serving with the 1st Stormo at Udine. This group moved with their C.202s to operations over Malta out of bases in Sicily November. First combat action for the C.202 occurred in North Africa, also in November. Operational forces ultimately included Italian squadrons based in the Aegean, Italy proper and Russia along the Eastern Front in Russia. The type would soldier on in the post-war world up until 1951.

While the C.200 was underpowered, the C.202 - in its originally fielded production form - itself suffered from being under-armed when compared to her fighter contemporaries. As such,

an additional pair of heavy machine guns were later added to the wings (one to each wing) to compliment the pair housed in the upper engine cowling. Additional measures were taken to improve the Folgore's hitting power at later dates including the fitting of underwing machine gun gondolas. Underwing hardpoints were introduced to allow the carrying of bombs or fuel drop tanks.

Folgore Production Marks

Major marks in the C.202 series included the original C.202-designated production models, the C.202AS for tropicalized operations in North Africa, the C.202CB fighter-bomber with underwing hardpoints, the C.202EC with added cannon armament, the C.202RF modified reconnaissance model, the C.202D prototype with new redesigned radiator, the C.202 AR.4 radio-controlled drone and the C.202bis engine test platform. Production continued until Italy's capitulation in September of 1943.

When in action, the C.202 Folgore reportedly matched up well performancewise against top-flight performer such as the Supermarine Spitfire Mark V. Where her guns failed her, Folgores could make due with equalized performance from their airframes. Her lack of potent armament always remained a sticking point, proving hardly enough "punch" to bring down enemy fighters let alone marauding Allied bombers.

Like other top Italian fighter mounts of the war - especially those depending on German-based engines for their aerial successes - the Folgore suffered from a shortage of powerplants throughout her tenure, severely holding back quantitative production of this fine system. As such, the C.202 was never grown into any potent numbers during the war, production hitting a ceiling of about 1,200 machines. Most were produced by Breda while Macchi delivered just 392 systems by war's end.

PLANE OF THE MONTH

The C.205 "Veltro"

The definitive aircraft in the C.202 family became the C.205 but only 66 of these improved types would become available by the time of the Italian surrender and only six of these were in active service with the Italian Air Force at the time. The C.205 operated under the nickname of "Veltro" (meaning "Greyhound") and was fitted with a more powerful Daimler-Benz DB 605 series engine. The C.205 retained the same basic airframe and undercarriage of the C.202 but improved its armament to 2 x 12.7mm Breda-SAFAT machine guns with 2 x 20mm MG 151 series cannons. The prototype C.205 first flew on April 19th, 1943 and production model deliveries began in mid-1943. These, however, were once again hampered by slow deliveries of the license-produced DB engines. The Germans took over production of the type after the Italian surrender and produced 205 more examples to be fielded across the Fascistcontrolled northern territories. About a dozen were also fielded by the Luftwaffe with II/JG 77.

Macchi C.202 Walk-Around

The Macchi C.202 was one of the more pleasing Italian aircraft designs of World War 2. From nose to tail-end, the aircraft was streamlined and contoured to the highest degree. The inline engine sat in a forward compartment powering a three-bladed propeller system. The cockpit was held well back of the nose assembly, providing limited views when taxiing. The cockpit was situated about amidships along the cylindrical fuselage and covered over in a framed, slab-sided canopy with a raised spine - defeating views to the critical "six". The empennage tapered off to a point and held a conventional wing arrangement featuring a single vertical tail fin and mid-mounted horizontal planes. The main wing elements were situated just ahead and below the cockpit and aft of the engine compartment. Wings were straight low-wing monoplanes with rounded tips. Tail surfaces were equally rounded at the edges. The undercarriage

was typical of the "tail dragging" breed of aircraft used throughout world war, made up of main landing gear legs and a tail wheel. The single-wheeled main legs retracted inwards towards the fuselage centerline.

Power

Power was derived from a single Daimler-Benz 601 series liquid-cooled supercharged inverted V12 engine delivering upwards of 1,175 horsepower. Of course these were delivered under the Alfa Romeo brand label for localized Italian production. Maximum speed was listed at 372 miles per hour with a service ceiling of 37,730 feet and a range of 475 miles. Rate of climb was measured at 3,563 feet per minute.

Armament

As stated, the C.202 Folgore suffered from being under-armed, putting her just a notch below the celebrated war-winners fielded by other nations. Armament centered around a pair of 12.7mm Breda-SAFAT heavy machine guns in the upper engine cowling with 300 to 400 rounds of ammunition per gun. A second pair of machine guns was featured as single fittings in each wing in later marks. Each of these guns was given 500 rounds of ammunition. Cannon armament was featured in the C.205 design. Once fitted with "plumbed" underwing hardpoints, the Folgore could now make use of a pair of bombs - either 110lbs, 120lbs or 350lbs each bomb. This could be replaced by a pair of fuel drop tanks for increased operational and ferry ranges as needed.

The Post-War Folgore

At least one C.202 was returned stateside to America, specifically to the Wright-Patterson Airfield in Dayton, Ohio for testing. A preserved example of a C.202 is on display at the Smithsonian Air and Space Museum in Washington, D.C. Egypt became a post-war recipient of the C.202 when some thirty-one systems were fitted with the Daimler-Benz DB 605 series engine and delivered as the C.205 Veltro. Eleven such systems

followed, these with cannon armament in the wings. Another operator of note became the Independent State of Croatia.

Dimensions:

Length: 29.04ft (8.85m) **Width:** 34.71ft (10.58m) **Height:** 9.97ft (3.04m)

Performance:

Maximum Speed: 370mph (595kmh;

321kts)

Maximum Range: 475miles (765km) Rate-of-Climb: 3,563ft/min (1,086m/

min)

Service Ceiling: 37,730ft (11,500m;

7.1miles)

Armament Suite:

ORIGINAL:

2 x 12.7mm Breda-SAFAT heavy machine guns in engine cowling.

LATER:

2 x 12.7mm Breda-SAFAT heavy machine guns in engine cowling. 2 x 12.7mm Breda-SAFAT heavy machine guns in wings.

OPTIONAL (LATER):

2 x 110lb, 220lb or 350lb bombs OR 2 x fuel drop tanks underwing.

Structure:

Accommodation: 1 Hardpoints: 2

Empty Weight: 5,181lbs (2,350kg) Maximum Take-Off Weight: 6,636lbs (3,010kg)

Powerplant:

Engine(s): 1 x Alfa Romeo RA.1000 RC 41-I inverted V-12 piston engine (Daimler-Benz DB-601A) delivering 1,175hp.

Information from Military Factory



KLINGBERG RECOGNIZED



October, 2011

3

The S-29A two engine airplane is the first aircraft Igor Sikorsky built in the United States in 1923.

The aircraft could carry 14 passengers at a cruise speed of 100 mph. After a number of productive revenue years, it was sold to Howard Hughes in the 1930 time period. The S-29A was modified to look like a German Gotha bomber and was accidently crashed in a simulated shoot down in the Howard Hughes World War I epic movie, Hell's Angels.

Lawrence Klingberg is an award winning model builder who completes one new model every year. He previously built an S-35 model which was reported in the October 2009 newsletter. His most recent is the S-29A Gotha bomber shown in the photos.



S-29A original aircraft



S-29A Gotha Bomber version

The model specifications are as follows:

- --Scale: 1:6
- -- Wing Span: 13 feet
- Wing structure material is balsa, pine and plywood, wrapped aluminum covering
- --Fuselage structure material is balsa, pine and plywood wrapped with Solartex covering
- --Finish is Rustoleum paint and primer



The end of the S-29A in Hell's Angels













The photos above show the S-29A in various stages of construction, and with the builder Lawrence Klingberg with his prize winning S-29 Gotha Bomber



Battle of the BUILDERS Static Display Contest



Who is the best?

Bring out your masterpiece, show off your detailed customized ARF, present your awesome scale park flyer. Put your best aircraft up against the best scale aircraft on the West Coast and see who comes out on top!

Don't miss YOUR chance to win BIG at

the RCX Battle of the Builders. Enjoy the West Coast's best static scale airplane contest! Every entry will be judged! The RCX Battle of the Builders will be organized by the Scale Squadron of Southern California, founders of the Scale Masters Championships.

Whether you've built a giant-scale museum quality masterpiece, or a customized foam park flyer you're truly proud of (or anything in between!), enter it in the RCX Battle of the Builders! This event is open to everyone.

April 28-29, 2012

Long Beach Convention Center Long Beach, CA

Battle of the Builders has become a must-attend contest within RCX! Whether you're competing or viewing, you're sure to see some of the best scale aircraft on the West Coast! RCX, the ultimate expo for radio control enthusiasts, is celebrating its 10th consecutive successful event in southern California.

Here are just a few highlights:

- Professional aerobatic airplane show
- Helicopter stunts
- High-speed drift track racing
- Radio control rock climbing
- Interactive "try me" exhibits
- Hundreds of exhibitors
- The latest and greatest radio control gear and technology.







Go to RCX.com for event details, rules and to register.

Categories

■ Best Detailed ARF

■ Best Park Flyer

■ Peoples Choice

■ Best Military

■ Best Civilian

SOMETHING TO THINK ABOUT



RICHARD KOEHLER, FOR THE REGISTER

Members of the Costa Mesa Fire Department's search-and-rescue team work to rescue a model-airplane enthusiast who chased his craft over the edge of a cliff Wednesday at Fairview Park.

Firefighters rescue man stuck in cactus

By DOUG IRVING THE ORANGE COUNTY REGISTER

COSTA MESA · A model-airplane enthusiast who chased his craft over the edge of a park cliff Wednesday morning slid into cactus and had to be rescued by firefighters.

The middle-aged whose identity was not released, suffered what appeared to be only minor injuries, Battalion Chief Fred Seguin said.

dio-controlled airplane at Fairview Park, a popular launch site for the hobby planes. When his plane landed over the lip of a cliff, he went to get it and slipped, Seguin said. He called friends on his cellphone to say he was stuck in cactus. His friends contacted the Fire Department, which sent an engine company and, later. search-and-rescue team mem-

Seguin estimated that the man was about 120 feet down a The man was flying his ra- "pretty substantial slope." A

few fellow airplane fliers had scrambled down the hillside to help and were able to climb back up. The man, though, was stuck in the cactus. Firefighters rigged a rope system and lowered a search-and-rescue team member down to the man. He clipped onto the rope and was hauled up.

His remote-controlled airplane was also recovered.

714-704-3777 or dirving@ocregister.com

Hobby People Review Nobbypeople.net

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Happy New Year!

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The Scale Squadron of Southern California



MEMBERSHIP APPLICATION

Membership in the Scale Squadron is open to all AMA members who are interested in safe, formal, and informal flying, including the research, building and flying of Scale R/C Miniature Aircraft. Membership Annual Dues are \$30.00 covering January 1 through December 31. Membership begins after verification of your current Academy of Model Aeronautics (AMA) Membership Card and receipt of Scale Squadron membership dues. Membership in the Scale Squadron includes a monthly newsletter and Squadron name tag. Meetings are the second Monday of each month at 7:00pm

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| Home Phone | e | Work | Ext Mobile | |
| AMA# | NASA | USSMA | FCC/Ham | EAA |
| MODELING INFORMATION | | | | |
| Years in R/C Modeling Level: New _ Intermediate _ Expert _ Need Help _ | | | | |
| Interest Area: WW1 WWII Golden Age Civilian Vintage Jets | | | | |
| Private or Commercial Pilots License & Type Rating | | | | |
| Are you interested in Scale Competition? Yes No Would Require Assistance | | | | |
| How did you hear about the Scale Squadron? | | | | |
| GENERAL INFORMATION Meeting Preferences. Check all areas that you would like to see at the monthly meetings | | | | |
| How To | Videos Gues | st Speakers Scale | Techniques Scale | Contest Prep |
| Your Ideas_ | | | | |
| Would you b | e willing to assist at Gate Flight | Scale Squadron Events? | Yes No May | |
| | | or the Scale Squadron Data Ba used in a Scale Squadron Mer | | |

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