THE SLOW ROLL

CHARTERED #921
Since DEC. 1974

President—Frank Moskowitz
Vice President—John Geyer
Treasurer—Gene Peterson
Secretary—Jim McEwen
Editor—Bob Purdy K9JNB
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JUNE 2013

The Slow Roll is published by the Sun Valley Fliers By and for its membership to all others interested in the building and flying of radio control aircraft

IMAA Chapter 782

Inside this issue: **Cover Photo by Tony Quist showing Joe Balabon Ziroli SBD Dauntless**

SVF MEETING June 5, 2013 @ 7:00 P.M.

THE PRESIDENTS CHANNEL

Frank Moskowitz

JUNE 2013 SLOW ROLL PRESIDENTS LETTER

Welcome to Junes Slow Roll.

Elections are over and for those of you that weren't in attendance at the election meeting in May; the results are as follows with new officers and board members in red: **Our club officers**; Frank Moskowitz – President, John Geyer – Vice President, Gene Peterson – Treasurer, Jim McEwen – Secretary. **Our Board Members;** Charlie Beverson, Mike Peck, Tony Quist, Ron Thomas, Loren Counce, Eric Stevens, Mike Smith, Wayne Layne and **John Deacon**. I thank all of you that took the time to attend last month's election meeting to vote for your candidates and those of you that mailed in your ballots. Ken Justice will remain as our safety officer. Board member Bob Bayless did not run again this year. We will miss him at our board meetings. Thanks Bob for your two years of great service.

A few club improvements that you will be seeing soon will be the Ramada getting painting including the helicopter Ramada. We will be re-roofing both as well. We are currently seeking out a good landscaper to maintain our field. If you know of someone who would like to bid on that job, please let a board member know and we will solicit a bid from them.

Summer is moving in fast, along with our record breaking triple digit temperatures. Make sure you protect yourself from those harmful summer rays. Use sun screen on exposed skin. You can still purchase hats from Ken Justice. For a list of apparel that SVF sells, go to our website www.sunvalleyfliers.com and click on the "SVF Apparel & Prices" Link. It's located in the center of our web page under the Slow Roll link.

Our next meeting is **Wednesday June 5th at 7:00 pm. Location is Deer Valley Airport Restaurant. (7th avenue and Deer Valley Road). Lots of great food and a smoke free environment.** If you want to eat I suggest you arrive no later than 6:15 pm. The Club meetings get better every month. We will always have more than one raffle prize and the 50/50 could make you very happy $$$. You never know what might happen, and you don't want to miss it.

Have fun out there!

Frank Moskowitz

President

Father's Day June 16th

SVF MEETING JUNE 5th @ 7:00 P.M.

Sun Valley Fliers Club Meeting Minutes
May 1, 2013

The meeting was called to order at 7:00pm by **Frank Moskowitz**. There were **70 members** in attendance. *Editor: I believe that was a record for an indoor meeting.*

Frank introduced the executive and the board of directors. **Jim McEwen** was at Top Gun, **Eric Stevens took the minutes**.

Frank began by opening the floor to any members who wished to run as a write in candidate for the club elections. **Joe Balabon** indicated that he wished to run as a write in candidate for Treasurer.

Guests: **Joe Keller**
New Members: **Michael Van Heemst**
New Solo Pilots:

- **Michael Van Heemst**
- **Bill Marhevka**
- **Sean Marhevka**
- **William Marhevka (William was unable to attend the meeting, all of the Marhevka solo'd on the same day**
- **Mark Krogulski**

Secretary's Report – Frank read them a loud as there is a problem with the web site and the Slow Roll was not accessible

- The minutes of the March meeting were accepted as read.

Treasurer's Report - Gene Peterson

- Gene has extra badge holders.
- Club web site is being moved to Go Daddy as there has been problems with the current web site host.
- The report was accepted as read.

Safety Officer Report - Ken Justice/Frank Seminara

- No new incidents or issues since last month.
- Ken reminded everyone to stay hydrated and watch for snakes.
- Ken has a new style jacket sample for members to look at.

Old Business:

- Additional GSA was put down at the field.
- New Fascia and drip rail has been installed on the Ramada and the Heli Ramada.

New Business:

- Frank explained the election process and how the proxy votes would be counted. **Mike Peck** handed out the ballots to members.
- 2013 Election
    - Election Results for Board of Directors:
        - **John Deacon, Wayne Layne, Ron Thomas, Mike Smith, Eric Stevens**
    - Election results for Executive
        - **Frank Moskowitz – President, John Geyer – VP, Gene Peterson – Treasurer**
        - **Jim McEwen – Secretary**

Community Awareness – **John Geyer Bob Bayless and Howard Kennedy** presented a check from the electric fly to the valley Big Brothers and Sisters

Door Prize Winners: **Jay Stewart** – gallon of fuel, **Lou Phifier** – gallon of fuel, **JB Bowers** - Servo

50/50 – Jay Stewart

Show & Tell: None

The meeting adjourned at 7:40pm.

Respectfully submitted by, *Eric Stevens* for *Jim McEwen* - Secretary

$ TREASURERS REPORT $ with *Gene Peterson*

TREASURERS REPORT June 2013

Snake Watch 2013----Remember …..they were there FIRST…….
We have put some granules around the South Side of the two sheds and around the kitchen a bit to keep the snakes away. A type of deterrent granule……. They say you shouldn't surround the sheds completely as that could keep the snakes in a "circle" so to speak. They need an outlet.
Did you know you can access the SVF membership on the AMA website? If you really need a quick look, this is available. It's on the members only section and if you haven't signed up online with the AMA, the AMA site has a lot of good information and would be worth your while.
The club is up to 269 members now, with two more signing up this month. We are growing back to the 300 mark slowing but surely. Last year hit us a bit with moves, retires, lost jobs, hobby changes, etc.
Welcome to all recent new members. New Members are listed somewhere else in this News Letter. Make them welcome, and offer to "call" for them if they are ready to fly. New members are a bit bash-ful, (and remember we all were when we joined the club.) so say hi and get to know them.

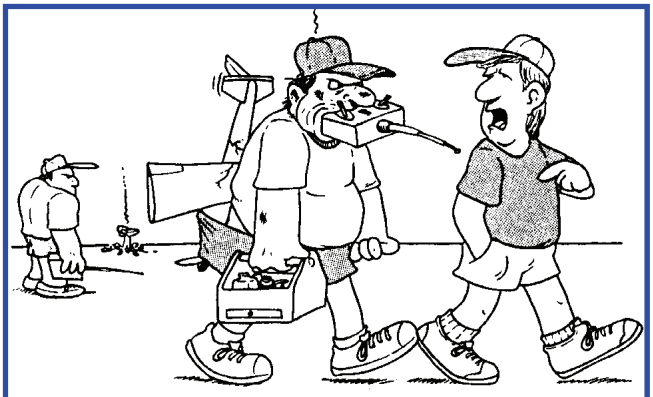
Regards *GENE PETERSON, TREASURER*
Az49er@cox.net 602-579-0925

WELCOME NEW MEMBERS

Hasnain Hasham Regular
Ralph Joksch Regular
Jason Lattin Regular
Caleb Lattin Junior
Kiel Marley Regular
Sean Pyles Junior
Tim Stocker Regular
Michael Van Heemst Junior

JUNE 2013 SVF BirthDay Boys

First name	Last name	Member type	Dob
Roy	McNeil	Senior	06/01/1939
Chris	Balling	Senior	06/01/1945
Loren	Counce, Jr	Senior	06/04/1933
Philip	Mahoney	Inactive	06/05/1950
Kirk	Welch	Senior	06/05/1945
Tom	Perkins	Regular	06/06/1964
Jared	Simmons	Regular	06/07/1983
Keven	Resinger	Regular	06/09/1962
Lucky	Mitchell	Senior	06/10/1944
Peter	Dickinson	Regular	06/10/1954
Rob	Keller	Regular	06/13/1969
W.	Georgelrwin	Senior	06/13/1946
Richard	Wildey	Regular	06/14/1971
Allen	Casey	Senior	06/15/1940
Dennis	Carrier	Senior	06/15/1945
Brian	Ford	Regular	06/15/1970
Yuri	Higuchi	Regular	06/16/1969
Paul	Donovan	Senior	06/17/1932
George	Kenerly Jr.	Regular	06/22/1952
Robert	Whipple	Senior	06/24/1932
Willard	Wells	Senior	06/25/1947
Luke	Dicksion	Junior	06/27/1998
Robert	Campbell	Regular	06/27/1949
Louis	Pfeifer IV	Regular	06/28/1952



When a really big guy crashes his airplane, it's NOT a good idea to laugh.

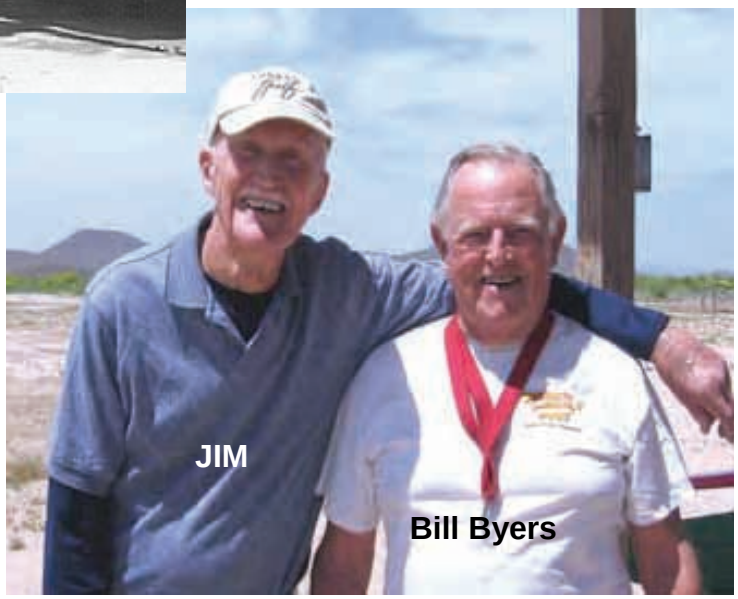
A Sun Valley Flier We Will Miss

de Veuve, James P.

With great sadness, his family announces the peaceful passing of James de Veuve on April 4, 2013 at age 91. Jim was a much loved husband, dad, and poppa and was a strong head of our family. He is missed so much already but his spirit lives forever. So much of Jim's life involved flying. On December 7, 1941 he was a private pilot flying cross country. A month later he was an army Air Force pilot cadet. WWII ranged from B-24's in 376th Bomb Group, 9th Air Force in Libya with 30 missions. Then to 22nd Bomb Group in the S. Pacific. All in all, 59 B-24 missions-moving to rank of Major with many medals including Silver Star and Distinguished Flying Cross. Out of all of his 59 missions he was proud of bringing all of his crew members home safely. The next flying years were with Trans World Airlines-first officer through the piston era and captain into the jets-31 yrs. and a wonderful time for Jim and for airlines. After retirement, building and flying model airplanes took over back east, then in Phoenix from 1971 with the Sun Valley Fliers. All in all- 4 yrs military, 31 years as a career and 30 years for fun. Other fun, too-at Cave Creek Golf Club, motorcycling, motor home trips, and hiking. Jim is survived by his wife of 56 years, Barbara Joan, their three sons, Allen, Jeffrey and Warren (Tara), grandsons, Mason, James and Zachary. Other family in CA includes daughters Lyn, Mardi(Steve) and Dorothy and seven grandchildren.

376TH HBG

22ND BOMBARDMENT GROUP



ARTICLE IN THE JULY 1997 SLOW ROLL

HERE'S THE SCOOP ON JIM DE VEUVE

by Jack Joseph

JJ: I understand you had a long and resting flying career.

JDV: Oh yes. On December 7, 1941, I was a private pilot flying a cross country. A month later I was an Army Air Force pilot cadet. I flew PT-22s and PT-13s in primary and AT-9s, a Curtiss twin engine plane, in advanced training. Then I went to Tucson for B-24 training. Then we flew from Topeka to West Palm Beach, Florida, to Brazil, then across the Atlantic to Ascension Island and on to British West Africa, and Cairo. I was assigned to the 376th Bomb Group in Libya and flew 30 missions over Sicily and Italy and was part of the low attitude bombing mission to Ploesti in Romania.

I was reassigned to the 22nd bomb group on the tiny island of Biak off the coast of New Guinea. Then we moved to Palau Island and Leyte and Clark Field in the Philippines from which we bombed Formosa. All told, I completed 59 missions in the B-24.

JJ: You make it sound uneventful. was it?

JDV: You bet it wasn't. I came close to being shot down. I had one airplane so shot up we had to land at Malta. It had well over 140 bullet and shrapnel holes in it, and the engines were destroyed. It was a miracle that not one of us were hit. On other missions my bombardier was killed and my tail gunner, with another crew, was shot down and taken prisoner of war. We were doing so much damage in Italy that Goring sent down his elite squadron of FW-190s to get us. They gave us a lot of trouble. I was lucky. I didn't get a scratch.

JJ: When you came home you went right to the airlines?

JDV: No, I couldn't get a job, the market was very tight so I flew in the Air Force Reserve and as a civilian. I went with TWA in 1951, and spent 30 years with them. I flew international for eight years through the piston era into the jets. I flew as a copilot and five years passed before I had chance to up-grade and be promoted to captain. The airline went by seniority. When I was promoted to captain I got on a different seniority list and ended up on the short, domestic flights.

It was a different ball game. Martin 4404 was a beautiful airplane. It was fun to fly. We made a number of short hops to Peoria, South Bend, Chicago, Columbus, Dayton, etc. You get a lot of practice that way. Eventually I worked my way up the ladder and was first officer on the major jet routes.

JJ: You retired in 1982, what have you been the last 15 years?

JDV: Building model airplanes. I started modeling on Long Island about 30 years ago. My oldest son was a little boy, and I thought he would be interested, so we build a free-flight Taylor Cub. We got one good flight, then I goofed. The only way to limit flight time was by the amount of fuel in the tank. I made a mistake and filled it. The plane circled up higher and higher. I asked Allen if he could see it. He said, "I think I can, but it's just about out of sight." It did go out of sight and as far as I know it went out to sea. Then I heard there were people flying radio control, and I told Allen we needed to find out about RC, so we can bring the airplane back. That's how I got into it. Allen still flies U-control. He was on the AMA team that went to Shanghai for the World tournament four years ago. He's in the design section of Boeing at Wichita, so he doesn't get to much flying time.

JJ: So you've been flying RC since the 60's?

JDV: Yes and no. I don't want to exaggerate because I had a terrible time. I made a few planes and immediately crashed them. Things didn't go well in that department, and I gave it up for a little bit. When I moved here in 1971, I contacted the ARCS club and flew with them.

JJ: Have you done any competitive flying?

JDV: The most fun I had was War Bird racing. I started with a number of other people just when it got started, and I would do it again if I was younger. Recently I have competed in IMAC contests at the sportsman level.

JJ: Where do you think RC flying is going?

JDV: It will get more sophisticated. I think radios will become discreet so your receiver will only recognize your transmitter. That will eliminate the interference problems. Unfortunately, the hobby will get more expensive because of the sophistication of engines and larger airplanes. Also, If we are going to get young people into this, and that is vitally important, we have to have smaller planes and less expensive ways to get started. I started out with a $40.00 engine and a cheap kit, and now it's becoming more expensive.

JJ: What should we do to get more young people involved?

JDV: Well, it is very difficult. I have three sons and tried to get them all involved. One son flies RC in Wichita, when time allows. Another son was doing RC quite well until he crashed a couple of times, then he quit. The other one never really got motivated. We need more competitions that kids can enter. They feel that RC is a sport dominated by older people. We have to get something going in school. They must be motivated to build. Giving them an ARF is probably not a good idea. When you build, you put something of your self in the plane, and I think that is a good idea.

JJ: Are electric motors coming into use?

JDV: I go to the quarter-scale meet in Las Vegas. People come from all over the world. For a number of years they had a special trophy for the top electric plane. Last year there were no electrics. I don't understand it. All the magazines show electric, but who is flying them? I don't know where electric is going. It must be pursued somewhere.

JJ: What enjoyment do you get out of modeling?

JDV: I do it for the creativity of building something. I like to scratch build and create a flying machine. That is a great source of satisfaction to me. I like to build sport scale because I am not a precision builder. I love to build equally as well as flying. I think it a lot of fun, and I'm finishing a Ryan PT-22, the same plane I flew in primary back in '42.

I like to fly because I enjoy being able to control that bird reasonably well and relax. When I fly I don't think of any thing going on in the world or my personal life. To a certain extent, I flew War Birds because I liked the competition. It was an adrenalin rush. I still get that feeling when I fly a new airplane. It is a real thrill. It is a fine feeling, concentrating on that bird and enjoying the day and being able to do a few things with it and making a good landing. Last, not least, is the company of good friends. It is great to get out with the guys. Everybody's friendly. That is a great feature of RC flying.

Two of Jim's greatest attributes do not appear in this profile.. They are his infectious laugh, and the ear to ear smile that appears on his face as he talks aviation. Sorry about that.

New SVF Solo Pilots & Instructors

John Geyer and Pilot Mark Krogulski

PilotsBill & Sean Marhevka, missing was Sean brother William. All three of them Solo the same day. John Geyer, Howard Kennedy and John Dean seen in the background.

Pilot Michael VanHeemst
With Howard Kennedy &
John Deacon

Congratulations

SVF Sun Valley Fliers

SVF *FLIGHTLINE SAFETY*

Welcome to the June 2013 **"*FLIGHTLINE SAFETY*"!** Well, the summer heat is upon us! And with that, this past week one of our members ran across one of our "slithering friends" at the field! So this takes me back to my April 2013 ***Flightline Safety*** article. "***Beware of the bite, rattlesnake season slithers in***", as the old saying goes! Please be aware that this is "prime time" for running across rattlesnakes around our area…peaking during July and August when the new-born baby Western Diamondback rattlesnakes are out in full swing. This is when most of the 150-200 annual bites are reported in Arizona, followed by mid-March thru June. So be on the lookout especially in and around the port-a-john, kitchen and any shady area! And let's not forget about when we may be out wondering around looking for a downed airplane! Be diligent!

Also during May, we had an incident that could have ended much worse than "just" a crashed, out of control aircraft! From all reports to me, this aircraft narrowly missed a member while he was flying, his spotter and a couple of observing members by mere inches! We need to look at a couple of items here actually! **1)**…what caused this aircraft to be "out of control" and **2)…** take a look at one of our club's Safety Rules. One…It's reported that the post-crash observation found the Futaba 2.4 receiver's antennas were secured in a "parallel" position to each other in the fuselage! NOT GOOD!!! The manual clearly states to position the two antennas at a 90 degree angle to each other for best performance. In other words, you should form a 90 degree "V" or have one antenna straight out, the other one at 90 degrees to that one. And that means the end of the two antennas which does not have the heavier sleeve on it, needs to be at 90 degrees to each other. The gray, covered part does not need to be 90 degrees but should be free flowing with no kinks. These coaxial wires extend the actual antennas past the case of the Futaba receiver. While the wires are 126mm long (measured from the case), only the last 30mm is the actual antenna. (see photo) For those of you with Spectrum or JR radios…the satellite antennas need to be installed 90 degrees to each other. And please, don't forget to set up your radio's FAIL SAFE. AND LAST BUT NOT LEAST….**DON'T FORGET TO "RANGE CHECK" YOUR AIRCRAFT'S RADIO!!!** It's a REQUIREMENT. And now let's look at the second part. That would be us taking a look at item number 7 of our SVF Field Safety Rules. "**FLIGHT LINE PERSONEL:** Personnel who have no direct contribution to the flight operation of aircraft shall remain within the spectator area; defined as under the Ramada and/or areas south of the fences." It would have been bad enough for the flying pilot at the other flight station and/or his spotter to have been hit by the out of control aircraft, but a few others were closer to harm's way by being seated at the flight station as well. I observe this much too often! So please folks, let's keep this in mind when we feel we need to be engrossed in discussing the events of the world while being seated at or near a flight station. There is plenty of room back under the Ramada to "hangar fly" with a little bit more room for safety! That is also why I repeatedly keep asking folks to fly from either the right or left side of the station's "start-up pad", behind the fencing and to keep ALL maneuvers except for take-offs, landings and touch and go's performed to the north side of the runway. Let's be pro-active and not reactive after someone might have an equipment malfunction or an "oops" that could result in injury to someone because we didn't keep this margin of safety in between us and our aircraft. "Things" will and do happen folks! "Murphy" sits on ALL of our shoulders!

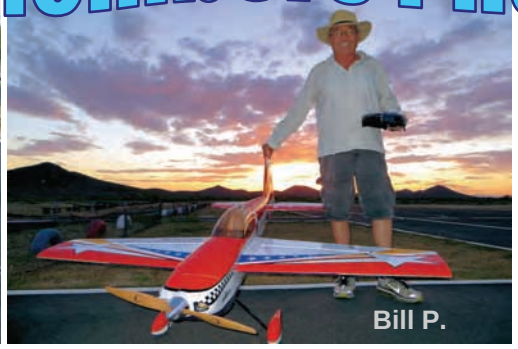
Well that's it for this month's article. For the most part, everyone seems to be doing a great job of keeping safety in mind! ***THANK YOU ALL!!!*** Let's all look out for each other and work together, so we can safely enjoy our hobby at our great SVF field now….and into the future! Please don't hesitate to call me at 602.315.4707, if you have a safety concern

Stay hydrated…it's a "DRY HEAT" and remember…**"*Safety Is An Attitude*"!**

And Safety IS *everyone's* responsibility! *Ken Justice*, **SVF Safety Officer**

Your SVF Members Photos


Dave M.


Bill P.


Ken M.


Ken J. Howard K.


Ron P.

Bill Marhevka and his son Sean!


Steve M.

George M.

Bruce B. Mr. G.V.


ME-262 heading for Calif.

Beware the “Hun” in the Sun

The phrase ‘Beware the Hun in the Sun’ dates back to World War I. Allied pilots used this idiom to remember to watch for enemy airplanes using the glaring sun to mask their diving attacks. It remains a standard combat tactic to this day.

What does this have to do with safety? How often have you heard the dreaded, “I haven’t got it,” while standing in the pits or on the flightline. Although these are often mechanical or radio issues, sometimes they are not. We have all experienced the temporary loss of orientation in flight and with those new to the RC skies, it is more common than we’d like to think. Loss of control is one of the most common reasons cited in severe crashes. Therefore it becomes a high-priority safety concern.

Although we usually don’t have to worry about gun toting RC airplanes diving on us spitting bullets, the glaring sun can be a problem to even the most experienced RC pilots when our airplane flies across the orb of the sun. For those few seconds and the time it takes for your eyes to recover, you have lost control of your aircraft.

What can we do to minimize the problem? First, given we aviate mostly for recreation; we can choose when and where we fly. We can choose to postpone flight until the sun is in a more favorable position or find a spot of sky that does not bring our line of sight across the sun.

But at a contest or a fun-fly sometimes we don’t have a choice. Anything else we can do? On bright, sunny days, wear good-quality polarized sun glasses (they should also be ANSI-rated safety lenses as well—see a previous safety column). Remember that even the best sunglasses will not protect your eyes from damage when looking directly at the sun, but they will help with the glare and minimize the time your airplane disappears in the sky. Combine glasses with a hat or cap with a bill. This gives you a built-in sun visor.

But gizmos only go so far. What do you do when your airplane disappears in the sun? The simple answer is don’t panic, it will reappear again on the other side. Keep the sticks where they were and let the airplane do the flying. Try not to do anything frantic until you have reacquired the plane on the other side. This may sound like simple advice, but it is easy—especially for new pilots—to get disoriented.

One of the most common problems is to mistake the orientation of the airplane as it reappears as a shadow. Once again, let it fly for a moment as you re-establish your visual cues as to attitude and direction. If that fails, give a small stick movement to the left. If it turns left, it is going away from you, if it turns right, it is coming toward you. These small test movements will soon get you back to normal. This advice is also good for newbies when your airplane gets out there so far you can’t see it clearly anymore.

Another problem encountered when you go through the sun is white spots that appear in your eyes from the sensory overload. These spots can be bad enough that you can’t see your airplane. In this case, remember the spots most often occur in the center of your vision, so re-establish contact using your peripheral vision.

In this or any serious loss-of-control situation, immediately call out for help. As I began this discourse, the words “I haven’t got it” will certainly get the attention of those around you. Briefly explain your situation and have them help you return the plane to level flight. Even if you are an experienced pilot, hand over the transmitter if need be. Don’t be embarrassed or prideful. Safety should be your first concern. And it could also save one of your expensive airplanes.

Still, it might be fun to put on the leather flying helmet and the dark goggles that those vintage aviators wore in days of old. Throw in a silk scarf for good measure. It won’t do much for helping your vision on sunny days, but it will certainly make you noticed at the flying field.

Jim Tiller, jtillet@hotmail.com

SVF MEMBERS PHOTOS

Sun Valley Fliers

At Top Gun 2013

with Jim Mc Ewen

The Top Gun Invitational Scale Tournament was created by Frank Tiano as the premier event in R/C scale modelling. Since its debuting in Coral Springs FL in 1989, the event has been held at several venues from Mesa AZ (1990), the West Palm Beach Polo Club (1991-2001), to its present location at Lakeland Linder Airport in Lakeland, FL. I've long since wanted to go to Top Gun and with this year being the 25th anniversary of the event, I joined fellow SVF members Wayne Lane, Brian O'Meara, Ray Olsen, Tony Quist and made the pilgrimage to Lakeland.

Brian O'Meara (pilot) has been a long time competitor at Top Gun and this year, with Wayne Lane as the caller/mechanic, they competed in Pro Am Pro with Brian's 1/4 scale P-47 built from a Frank Tiano kit. The Thunderbolt has a wingspan of 144 inches, weighs about 120 pounds, and is powered by a four cylinder engine developing 37 horsepower; this bird is a monster! In the weeks leading up to Top Gun, the plane was often at SVF Field for practice flights and system tests. Wayne was kept busy right up to the end fine-tuning the bird and making sure everything was A-OK as well as adding new mechanisms to drop large dummy bombs as a "mechanical option".

The bombs themselves had quite the developmental effort involving several SVF members. Tigh O'Meara molded the Mark 1 prototypes which were seven inches in diameter and almost two feet long. Unfortunately, they were badly damaged in their first drop onto the hard desert at 120mph. Wayne repaired the casings and fitted a seven inch diameter tennis ball in the nose to create the Mark 2 version. When these were dropped from the P-47 during testing, the bombs impacted the ground with a great wallop but bounced about twenty feet into the air which was quite amusing but somewhat unscale-like. I built a pair of Mark 3 bombs from styrofoam, ABS pipe, and Coreplast fins which weighed only 1-1/4 lbs each and were able to withstand the about four drops before being too damaged. With the design finalized, Brian ordered ten more so I was scrambling to make them in three evenings before Wayne was leaving with the trailer. The Mark 3's looked a bit ominous when being driven over to Brian's but fortunately didn't draw the attention of the Dept of Public Safety (see photo).

Brian's first two rounds of competition went without a hiccup but a couple of issues developed during a practice flight in which the ignition started missing and a servo failed. With not enough time to find and fix the issues, Brian used his one allowed "attempt" to delay his Round 3 flight to the next morning. Wayne, Brian, and I worked on the plane that day/evening and got it ready for a test flight first thing the next morning. The test flight went great, right up to the landing when the tailwheel collapsed. The cross wind turned the plane towards the safety fence and the resulting impact took out the fence but also ripped the bomb pylon out of the bottom of a wing. With 22 minutes left until the plane had to fly in Round 3, there was quite a "fire drill" in the pits to get it all fixed. Wayne sorted out the tailwheel and replaced the stripped rudder servo while I put the wing and pylon back together as Brian and Bonnie got tools, parts, and lots of glue. With literally seconds to spare, the plane was repaired and rolled out to the line. Brian kept his cool through the whole frenzy and made a 90+ point flight in Round 3 to make the cut and fly in the final round on Sunday.

In Pro Am Sport, Andy Andrews was flying a BVM F-86 with myself as caller/mechanic. The Sabre was built by Greg Anixter of Phoenix and has flown several times at SVF Field when it was previously owned by Ron Long. The plane features aluminum plating applied in a proprietary process by Metal-Morph and is finished in the colors of Col Frank Borman (Apollo 8). Top Gun was our dress rehearsal for competing as part of Team USA at the Jet World Masters in Switzerland this August. Andy had only flown the plane eight times prior to Top Gun and neither of us had been to Lakeland so we flew four practice flights the day before the competition to get the lay of the land. Rounds 1 and 2 went well which put Andy and I into in 3rd place. Alas, Round 3 threw us a curve ball as a couple of minutes before flying; the wind shifted and sun shelters were installed over the judges. We stood to the left of the judges (just like we'd done in the previous rounds) but were told to stand back such that we had a hard time seeing around the sun shade to establish a proper upwind line. The result was an 86 point flight which dropped us to 5th place but we made the cut. In the heat of competition we overlooked the fact

that we simply could have stood on the other side of the judges. D-oh!

Tony Quist and Ray Olson arrived Thursday in time to cheer on their friends Joe Casteleo (caller) and Ali Machinchy (pilot) flying Joe's Airworld Cougar in Unlimited Class. It was the plane's debut event and Ali did a phenomenal job at the sticks. The plane is gorgeous but had to overcome a static score of 92.417 due to a documentation issue. Tony and took a bunch of excellent photos at the event that appear elsewhere in this Slow Roll issue and even joined Brian and Team Futaba in front of the camera. *See TG with Tony page*

Saturday night was the banquet dinner at a nearby golf course. It was quite the extravaganza and, as the 25th Anniversary of Top Gun, there were some special gifts for Frank. The friendships and appreciation the competitors have for Frank is obvious and heartfelt and Frank was speechless (and even a bit teary) when he was presented with a gorgeous P-47 framed print that had been signed by all the competitors. Frank recovered quickly and MC'd the auction where several good deals were had.

Sunday was the day of the finals and everyone brings their "A" game and typically puts in their best flights of the event. Brian and Wayne flew a 95.25 which was the highest score of Round 4 to finish with a final score of 118.917 points taking 2nd Place in Pro Am Pro (just 0.282 points behind Kyle Goodwine's B-17). Andy and I got a 93.125 (the third highest score) to finish with 117.292 points to take 3rd Place in Pro Am Sport (0.042 points behind 2nd place and 0.75 points out of 1st place).

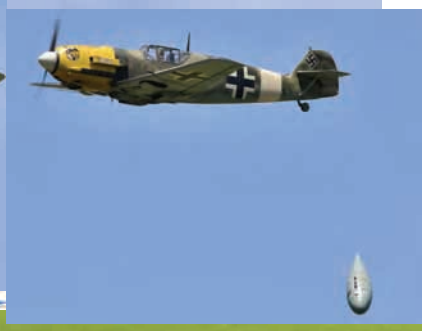
The big winner and Mr Top Gun was Dave Wigley (aka "Wiggles") with his incredible-scratch built 1/5 scale Bristol Beaufighter (complete with a droppable torpedo that is larger than a baseball bat). The Beaufighter was impressively built (including the scratch-built landing gear) and expertly flown. Dave had a static score of 98.333 and an overall score of 192.958 points to win Master's class as well as Pilots' Choice (Best Military), Master's High Static, Critic's Choice, Engineering Excellence, and Best WW2 Performance.

Top Gun is truly an amazing event with some of the best planes and pilots in the world. Frank Tiano does a fabulous job with this event and while the intensity is high, so is the camaraderie. It was an honor to be invited to compete as well as being an opportunity to learn. Many thanks to all the competitors and sponsors and to Frank Tiano for all his efforts.

Regards,

Jim McEwen

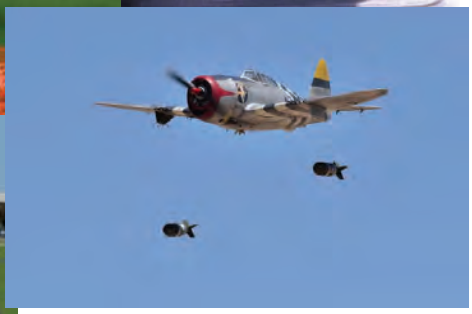
More Top Gun Photos by Tony Q.



More Top Gun 2013 Photos

Brian & Bonnie O'Meara


Wayne Layne



SF Sun Valley Fliers


Dave Wigley Top Gun

Easy Repair Tricks

- One of the apprehensions all pilots experience is knowing our planes are at risk every time they take to the air. Then there is a real sense of accomplishment when the plane makes it safely back to terra firma. As our confidence builds, we start doing maneuvers closer to the ground and thereby increase the chance of meeting up with the earth. Eventually, a wrong move is made, or a servo or radio malfunction occurs, and in one brief terrifying moment, the plane hits the ground. Your pride and joy now sits helplessly wounded.
- But don't fear; although the plane may be damaged, in many cases, it is far from dead. The good news is that more than 80 percent of crashed planes can be fixed using simple construction techniques that I share with you here. I admit that I have personally used many of these repair methods, and they all work quite well.
- **First-aid kit for crash repairs** **Photo 1**
- > Clear packing tape
- > Various glues: quick-drying CA (foam safe, if you fly foamies), epoxy
- > Glue gun
- > Fiberglass or cotton material for reinforcement
- > Balsa scraps and/or ice cream sticks
- > Covering material
- > Covering iron
- > X-acto knife
- > Needle-nose pliers
- > Soldering iron
- > Scissors
- **Clean sweep–don't leave any part behind**
- The first thing to remember when you get to the crash site is to turn off the power. You may then want to mourn a bit before you begin the salvage operation; this is perfectly fine and accepted in the modeling community. When you're ready to move on, gather up every piece of the plane you can find; this is a very important part of the repair process. Once back in the shop, begin to put the puzzle pieces back together, and if a piece is missing, I almost guarantee that it will be the hardest one to duplicate. So make sure you pick up all the pieces. Now let's look at how to repair some common crash/bump damage.
- **Landing gear–the first thing to make contact** **Photo 2**
- By far the most common airplane mishap has to do with the landing gear either getting pancaked or being pulled right off. After all, this is the first thing that touches the ground and is, therefore, most likely the first thing to be broken off. Many times, new and experienced pilots will stall out the plane on landing, and the plane will hit hard, thus putting a lot of pressure on the landing gear. This constant pounding eventually breaks the plywood that holds on the landing gear.
- Reconstruction begins by removing the landing gear and piecing all the parts back together. Use thin CA to glue the parts. Reinforce the inside of the landing-gear platform with triangle balsa stock, and use fiberglass or denim material with epoxy to strengthen and bond all the pieces together.
- On foam planes, use foam-safe CA or epoxy (although this will add some weight) to glue all the pieces back together. Reinforce all the parts with clear packing or reinforced tape.
- **Wingtips–damage at the ends** **Photo 3**
- I have seen many competent pilots tip-stall a plane on landing and cause damage to the wingtips. This type of damage is common to many planes, especially low-wing designs. It's best to prevent rip tears in the covering in the first place by adding a protective wingtip covering. A number of products on the market will prevent wingtip damage, including plastic wingtip guards and adhesive Mylar that sticks to the covering. Both products prevent damage by taking the brunt of the abrasive impact on the ground. But if you're like me, too late for that; damage done. How do I fix it?
- The first step is to remove any shreds of torn covering and fill in the damaged balsa or plywood wingtips. You can do this with any wood fillers, but I found spackle or Lite Spackle (available at home centers) the easiest to use. It is easy to apply with a putty knife or an old credit card, and it sands faster than balsa,

creating a smooth finish. Cut a piece of color-matched covering that overlaps the existing covering by at least 1/2 to 1 inch all around the damaged area. Use an iron with a higher heat setting, so you can stretch and mold the covering around the complex curves of the wingtip. If you aren't able to color-match the covering, use a color that works with the color scheme. Cover both tips so that it doesn't look like a repair when you've finished. And once you've achieved a great-looking repair, why not try that scuff-resistant Mylar film this time?

- **Covering repair –easiest to damage** **Photo 4**
- The second most common repair is fixing holes in film covering. This damage occurs when you poke your finger through the covering as you pick up the plane, or when a stick pokes through on landing, or broken parts break through the covering, or during transportation to the field. Any of these events can leave your pristine covering damaged and unsightly. These areas need to be repaired as soon as possible because the damage will affect the aerodynamic stability of the plane. The torn covering will get worse as the air pulls up more and more covering on each flight.
- At the field, you can do a quick repair by using some good-quality packing tape to place over the ripped covering film. Cut the piece of tape so it extends at least 1 inch beyond or around the damaged area. Stick the tape to one side of the tear, and gently pull the tear together before you push down on the entire tape strip.
- Once at home, you should make a permanent repair. The first step is to purchase the same color covering as in the damaged area. The covering brand and color are often printed at the beginning of the assembly manual. If the damaged area has a complex color pattern, or you just can't find the right color of covering, you can still repair it by using clear covering.
- Whether you use a matching color or a clear covering, the steps for repairing the damaged area are the same. Use the low-heat setting on the covering iron, tack down the repair covering on one side of the rip, working from the center out to prevent air bubbles from forming under the film. Pull the repair covering so that the gap in the damaged covering closes, and then tack down the covering again working from the center out. Now, turn up the heat on the iron, and go over the entire repair area to get a nice solid bond that should last the life of the plane.
- **Motor mount–the front is the first to hit**
- The new breed of outrunner motors has much more power and durability than motors from just a few years ago. These well-built powerhouses don't bend or break when the plane encounters a prop strike. The force from the strike is instead transferred to the motor mount, which in many cases is much weaker than the motor. Even a light prop strike may result in some significant damage around the motor mount. Repairs in this area are easily fixable, in most cases.
- On foam models, glue all of the pieces back together with foam-safe CA or epoxy. When using epoxy, try not to overuse it because cured epoxy adds a fair amount of weight. Fill in any gaps with foam-safe CA and microballoons, and then reinforce the area with some packing tape. Reinstall the motor, and you're good to go.
- For balsa models, the fix will require a little more time. Again, glue all the pieces back together with CA. Depending on the construction of the motor area, you can use extra 1/16-inch balsa sheets to reinforce the area, or use light fiberglass with epoxy or CA. I also found that Popsicle sticks work great to beef up an area, especially around the motor mount. Some planes have the motor mounted on a motor box; to reinforce these, you can use balsa triangle stock to strengthen the inside corners. When you've finished the repairs, sand everything smooth, and add new covering and/or a new cowl.
- **It's all good**
- Now you should be able to fly at ease in the knowledge that if an accident with your plane does occur, you can rebuild and, in some cases, make it better than it was. As the saying goes, "If you're not crashing, you're not flying"; but now you also know that a crash doesn't always mean the death of the plane. Enjoy.

PHOTO'S

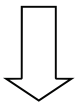


Photo 3

Photo 4

New development in VTOL design

Combining the hovering capability of a helicopter with the high-speed, long-range flight capabilities of a fixed-wing aircraft has intrigued engineers for decades. The Australian company StopRotor Technology has a new approach: their Hybrid RotorWing design concept has a main rotor that switches from fixed rotor to fixed wing in mid air. According to Gizmag's Jan Bellezina, "The Hybrid RotorWing can take off vertically and hover with the main rotor spinning like a helicopter's, or take off and fly like a conventional fixed wing aircraft. To transition between rotary and fixed wing flight modes, the aircraft is plunged into a fall involving high angle of attack flight that aligns the airflow with the rotation axis of the rotor system. This symmetrical airflow over the main rotor provides a stable environment that allows the blades to be started or stopped." Interesting concept, but inducing a stall to transition to forward flight seems like a risky proposition–especially for manned flights in a full-size machine.

The video below shows a collection of rotary wing prototypes and their evolution in the Hybrid RotorWing development program by StopRotor Technology.

VIDEO 2:45
http://www.youtube.com/watch?v=a4bkPHPIb2c&feature=player_embedded

4-engine Handley Page takes flight

The Handley Page HP42 was a four-engine, long range biplane airliner built for Imperial Airwaves in the late '20s. Only eight were ever built. This RC version, restored by Peter Bruce, is powered by four .52 4-strokes and looks majestic flying at a recent Large Model Association air show in RC Model Airshow in Rougham, UK. Thanks to tbobborap1 for taking this great video and posting it to YouTube

VIDEO 8:20
http://www.youtube.com/watch?v=5BCdM7WO4XM&feature=player_embedded#!

6 WW II planes assembled in 6 minutes–amazing video!

If you haven't yet seen this video of six WW II planes being assembled and hung at The National WWII Museum's US Freedom Pavilion in New Orleans, you won't want to miss this! The mesmerizing 6-minute clip features a North American B-25 Mitchell, a Boeing B-17 Flying Fortress, a General Motors TBM Avenger, a Chance Vought F4U Corsair, a Douglas SBD Dauntless and a North American Aviation P-51 Mustang.

VIDEO 5:52

http://www.youtube.com/watch?v=nAHVR0Bn558&feature=player_embedded#!

X-47B Historic At-Sea Launch

Earlier this week, the U.S. Navy today launched an X-47B Unmanned Combat Air System demonstrator from an aircraft carrier at sea, the system's first at sea, catapult launch. The aircraft flew from USS George H. W. Bush off the coast of Virginia and landed safely at Naval Air Station Patuxent River, Md. about an hour later. Check out these great shots and video below.

Dave Lorenz, left, and Bruce McFadden, deck operators for Northrop Grumman, discuss the launch of an X-47B Unmanned Combat Air System (UCAS) demonstrator on the flight deck of the aircraft carrier USS George H.W. Bush (CVN 77). Lorenz and McFadden operated the X-47B as it taxied from the aircraft elevator to the catapult. George H.W. Bush is the first aircraft carrier to successfully catapult launch an unmanned aircraft from its flight deck.

Sailors aboard the aircraft carrier USS George H.W. Bush (CVN 77) remove the chocks from an X-47B Unmanned Combat Air System (UCAS) demonstrator aircraft.

An X-47B Unmanned Combat Air System (UCAS) demonstrator launches from the aircraft carrier USS George H.W. Bush (CVN 77).

VIDEO 1:34
http://www.youtube.com/watch?v=_FMvNrkwmi0&feature=player_embedded

VIDEO 0:31
http://www.youtube.com/watch?v=6vdll3FEaKU&feature=player_embedded

What fuel is best for your engine? by Dave Gierke

In today's hobby industry, commercial fuel-blending companies are hard-pressed to make a profit, and stay in business. Nitromethane is no longer made in America; our only refinery dedicated to its production has been moved to India. We now import nitro from China and are subject to interruptions in supply, as demonstrated when refineries shut down to reduce air pollution, during the 2008 Summer Olympics in Beijing. When the supply of nitro dwindled here, its price soared; later, when supply was restored, the price remained high. One East coast fuel company president predicts a similar fate for the manufacture of methanol. Only time will tell. Although they are struggling, there is still stiff competition among fuel companies. In their advertising, a few come across boldly, verging on arrogance. One particular blender proclaims an almost divine knowledge of the discipline, predicting the fuel needs of all engine types and sizes; to him, the engine manufacturer's recommendations should be dismissed as insignificant. In other words, some blenders attempt to persuade the modeler to disregard the engine's instruction manual, and instead turn to them for guidance about fuel purchases.

ARE ENGINE MANUFACTURERS TOO CONSERVATIVE?

There is a concern throughout the fuel industry that many of the world's engine manufacturers are too conservative when recommending lubricating oil percentages for their products. A high lubricating oil percentage never hurt an engine … or did it? A growing body of experimental and practical evidence suggests that modern engines are being impaired by excessive oil content in the fuel. Here are three examples:

The engine has difficulty maintaining a reliable, low-rpm idle.
The engine has difficulty obtaining a crisp throttle-up.
The engine exhibits diminished wide-open throttle power.

THE TRADITIONAL MODELER

Suggest reducing the fuel's oil content to a traditional modeler, and there'll be an immediate objection, "What are you trying to do, ruin my engine?" Fuel blenders have discovered that change comes slowly when dealing with lifelong modelers. Faced with a traditionalist attitude, some blenders have ventured onto a new path: mix the fuel based on the latest technology and delete the label specifications. Lube percentage and sometimes the nitro content are often left off entirely, thus avoiding the inevitable criticism from engine manufacturers, engine repair centers and modelers comfortable with custom and tradition.

RINGLESS PISTON (ABC, ABN, AAC), BALL BEARING SUPPORTED CRANKSHAFT

Nitromethane	Oil Contents	Total Oil	Methanol
5%	16 syn/2 cas	18%	77%
10%	16 syn/2 cas	18%	72%
15%	16 syn/2 cas	18%	67%
20%	16 syn/2 cas	18%	62%
25%	16 syn/2 cas	18%	57%
30%	16 syn/2 cas	18%	52%

Modelers are often suspicious that fuel blenders might substitute a less expensive component, such as methanol, for an expensive component such as nitromethane or a synthetic lubricant. When purchased in bulk, the fuel component costs to one commercial fuel company, minus the shipping charges (2006) are:

Synthetic lubricants: average $16 per gallon in multiple barrel lots (55 gallon).
Special synthetic lubricants: average $28 per gallon in multiple barrel lots (55 gallon).
Castor oil lubricant: $9.75 per gallon in multiple barrel lots (55 gallon).
Traditional synthetic oils (UCON, etc.): less than $10 per gallon (55 gallon).
Methanol: $1.49 per gallon in 5,000-gallon lots (tank truck).
Nitromethane: $14 per gallon in 80-barrel lots (53 gallons/barrel, 2-gallon nitrogen space).

THE INCREASED COST OF REDUCING OIL CONTENT

A ringless .40-ci ABC-type 2-stroke-cycle engine with a ball-bearing-supported crankshaft is a good example for comparing blending costs between traditional and non-traditional (reduced lubrication content) fuels. Traditional modelers generally agree that 18% oil (14% synthetic, 4% castor) is safe for this type and size of engine. Conversely, an honest commercial fuel blender knows that he can easily cut the total oil content to 14% (or less) with a mixture of 12% special synthetic and 2% castor oil, while improving the engine's power, idle and throttling characteristics as well as maintaining its longevity.

Traditional blend: 18% lube, 15% nitromethane, and 67% methanol

14% traditional synthetic ($10 * 0.14 = $1.40)
4% castor oil ($9.75 * 0.04 = $0.39)
15% nitromethane ($14 * 0.15 = $2.10)
67% methanol ($1.49 * 0.67 = $1)
Ingredient total: $4.89/gallon

Special synthetic blend: 14% lube, 15% nitromethane, and 71% methanol

12% special synthetic ($25 * 0.12 = $3)
2% castor oil ($9.75 * 0.02 = $0.195)
15% nitromethane ($14 * 0.15 = $2.10)
71% methanol ($1.49 * 0.71 = $1.055
Ingredient total: $6.35/gallon

By removing all of the inexpensive traditional synthetic lube (16% at $10 per gallon) and replacing it with a special synthetic (12% at $25 per gallon) and methanol (4% at $1.49 per gallon), it should be clear that the reduced lubrication content fuel costs more to produce. Note: fuel blends are formulated by component volume, not component weight.

Commercial fuel blenders don't always reduce the oil content of their fuels. Older engine designs that have lapped (ringless) ferrous (iron and/or steel) pistons and cylinders, and/or plain bearing (bushing) crankshaft support, require relatively high percentages of castor oil to provide adequate high-load (pressure) protection. For these engines, it's common to find fuel blenders recommending up to 28% lube. RC helicopter fuel is another example of where the oil percentage (both special synthetic and castor) is often boosted several points (up to about 24%) due to the heavy loads and high cylinder head temperature conditions that are often encountered.

At the opposite end of the model fuel controversy, some engine companies are fighting against the commercial fuel blenders' "secret" ingredients and percentages. Here's a statement by NovaRossi, from the instruction manual of Serpent Engines: "Only use fuels which contain pure fuel elements like nitromethane, methanol and castor oil. We do not recommend using synthetic oils or any other fuel additives. Do not use after-run products. If you use high quality fuel then this is not necessary." This recommendation comes from a company that has won multiple European and World Championships with 2-stroke-powered RC model cars.

ENGINE CATEGORIES & LUBRICATION REQUIREMENTS

Ringed and ringless pistons represent the two broad categories of glow-ignition engines.

Ringed 2-stroke engines require lower castor oil percentages.
Ringless ABC (aluminum piston, brass/chromed cylinder), ABN (aluminum piston, brass/nickel cylinder), and AAC (aluminum piston, aluminum/chromed cylinder) engines need a bit more castor oil.

Ringed pistons run best on higher quantities of synthetic oil, limiting varnish build-up. Although castor oil provides superior protection, it will varnish an engine when used in higher quantities. Varnish is not a problem until it begins to interfere with the ring's ability to seal against the piston's ring-land and cylinder wall. Synthetic oils will not varnish, but they tend to flash off during the combustion process, limiting the lubricant's protection. The best traditional strategy to maximize the qualities of both lubricant types in ringed engines is the following mix: 16% synthetic, 2% castor oil (18% total).

Ringless pistons require higher percentages of castor oil than ringed pistons. These engines are designed with an interference fit (zero clearance) between the piston and cylinder near TDC (top-dead-center), requiring additional scuff protection. Of course, higher castor oil percentages varnish the piston/cylinder more rapidly, requiring more frequent cleaning. A good traditional combination of lubricants for ringless engines is: 14% synthetic, 4% castor oil (18% total).

BUSHING-SUPPORTED CRANKSHAFTS = HIGHER OIL PERCENTAGES

Ringed and ringless piston engines that use bushings (plain bearings) for crankshaft support require a higher castor oil percentage than engines utilizing ball bearings. Practical experience, over a long period of time, has shown that about 4% additional castor oil is correct for the traditional blends in question (e.g., ringed engine: 16% synthetic, 6% castor, 22% total oil; ringless engine: 14% synthetic, 8% castor oil, 22% total).

Nostalgia glow-ignition engine designs (1948-1970) that use plain bearings for crankshaft support, and a ringed or ringless iron/steel piston/cylinder require additional castor oil lubricant. Duke Fox specified 28% oil content (all castor) for his famous Fox .35 Stunt engine. In continuous production for 60 years, it has a ringless iron piston, steel cylinder and a bronze bushing for crankshaft support.

TRADITIONAL FUEL BLENDS: RINGED AND RINGLESS PISTONS

The following charts show recommended traditional fuels for both ringed and ringless piston engines fitted with

ball bearings for crankshaft support. Although the fuel blends shown are formulated to work over a wide range of engine displacements (from approximately .19 to 2.20ci), the total lubricating oil content is probably best suited to a .40ci engine (18%). The range of nitromethane percentages is provided to offer flexibility in performance, depending if the engine is designed for sport or racing-type applications, or something in-between. Typically, the 5-, 10- or 15%-nitro content fuel would be used for sport flying.

REDUCED OIL CONTENT

I began experimenting with home-brew fuel and reduced oil content in the late ë60s. The findings were applied to our RC pylon-racing program, where there were no restrictions on fuel. Eventually, a summary of this work was published in the May 1974 edition of *Model Airplane News* ("Two-Stroke Oils: Their Analysis"). Briefly, I found that a racing 0.40ci engine would produce its best bhp (brake horsepower) with 14% oil content, using a blend of synthetics and castor oil; previously, conventional wisdom dictated that the safe minimum was 18%. By reducing the lubrication content by 4%, the fuel becomes less viscous (thinner), often allowing the engine to realize a modest power boost. This is due to:

Decreased pumping and bearing-drag losses.
Improved fuel and oxygen molecule contact with in the engine's inducted air.
Reduced energy loss (heating the excess oil) out of the exhaust.

When reduced oil content was tested in our RC pattern fuel, we found that the .60ci engines were better behaved; they idled steadily at a lower rpm, and throttled-up crisply without stumbling. Thirty years ago, a .60ci displacement 2-stroke glow engine was considered large. Over the decades, power requirements for giant-scale and pattern models enticed engine manufacturers to develop larger glow units, including: 1.2, 1.5, 1.8, 2.0, and 2.2ci 2-stroke single-cylinder designs.

FUEL REQUIREMENTS FOR LARGER ENGINES

As an engine's size (displacement) increases:

It requires less lubricating oil percentage.
It demands less nitromethane percentage.

If you're a traditional modeler who believes that high oil percentages are always needed throughout the engine displacement spectrum, take time to absorb the following two concepts.

LARGER ENGINES REQUIRE LESS LUBRICATING OIL PERCENTAGE (CONCEPT: LUBRICATING AREA TO DISPLACEMENT RATIO)

The following quote was excerpted from a paid advertisement (Duke's Mixture) from the late engine manufacturer, Duke Fox, (Fox Manufacturing Company) in the August 1989 issue of *Model Airplane News* magazine: "… Larger motors need less oil, percentage-wise, than small ones. The reason being that as the size of the motor increases, the displacement goes up as the cube, while the area to be lubricated goes up as the square. Thus a motor with a 1.5-inch bore would be as well lubricated on a 10% oil mix, as one with a 0.75-inch bore would be with a 20% oil mix." This is known as the lubricating area to displacement ratio.

When doubling the engine's bore from 0.75-inch (.33ci, with a stroke of 0.75 inch) to 1.5-inch (2.65ci, with a stroke of 1.5 inches), displacement increases as the cube of the bore increase (0.75 in. * 2 = 1.5 in.); therefore 2^3 (2 * 2 * 2) = 8 times.

Assuming similar design features, an engine that is 8-times larger than another (ci), will consume fuel about 8 times faster than the smaller engine. Conventional thinking suggests that 8 times the lubrication will also be needed for the larger engine. However, the large bore engine (1.5 inches) has only 4 times the lubricating area of the small bore engine (0.75 inch), since cylinder area increases as the square of the bore increase, or 2^2 (2 * 2) = 4 times. Consequently, the larger engine receives twice the lubrication of the smaller engine (8 ˜ 4 = 2). By reducing the larger engine's lubrication content by half (from 20 to 10%), it will lubricate the same as the small engine. (Bore1 ˜ Bore 2 * Bore 1 % = Bore2 %), (0.75 ˜ 1.5 * 20 = 0.5 * 20 = 10%). Based upon traditional lubrication content, here are a few engine displacements (bore = stroke) with their calculated lubrication percentages:

Disp (ci)	Bore (in)	Suggested lube %
2.65	1.50	10
1.09	1.12	13.4
0.65	0.94	16
0.47	0.81	18.5
0.33	0.75	20

RINGED PISTONS, BALL-BEARING-SUPPORTED CRANKSHAFT: SPORT FUEL

Engine Disp.	Castor Oil Content	Syn. Oil C
2.20	1.1% cas.	8.9% syn.
1.80	1.2% cas.	9.8% syn.
1.20	1.4% cas.	11.6% syn
0.75	1.7% cas.	13.3% syn
0.60	1.8% cas.	14.2% syn

LARGER ENGINES DEMAND A LOWER NITROMETHANE PERCENTAGE

In 1948, three American engine manufacturers released their versions of the revolutionary 1/2A glow engine, but the so-called “baby engines” would soon cause problems for unsuspecting modelers. Initially, they were expected to run on fuel that was formulated for larger displacement glow ignition engines that contained mostly methanol. The tiny engines protested by being difficult to start and touchy to adjust; they vibrated, misfired and often quit cold. As it turned out “cold” was the operative word for understanding their balky operation.

Small engines have a much higher *cooling area to displacement ratio when compared to larger engines; therefore they overcool, disrupting the normal combustion process. Adding 25- to 35% nitromethane solves the problem, since it provides additional heat to the tiny engine’s operating cycle – it also adds power. *Cooling area includes both the cylinder and the cylinder head.

The cold-running ΩA experience helps to explain why engine designers enlarge the cooling fin area (head and cylinder) as displacement increases. Even with enhanced fins, acceptable head temperatures are often difficult to maintain, illustrating why big engines demand lower percentages of nitromethane. Elevated cylinder head temperatures often lead to potentially destructive combustion problems such as pre-ignition and detonation.

From the chart below, various ratios of cooling area (cylinder + head) to engine displacement are compared, ranging from the largest to the smallest engine; notice that the baby engine (0.049) has almost four times the cooling area per unit of displacement, than the 2.65 ci engine (12.8 ˜ 3.3 = 3.88). Also note the approximate nitromethane percentages suggested for the given displacements; these are difficult to predict accurately because the engine’s design plays a significant role in its ability to cool:

Disp. (ci)	Area/disp.	Suggested nitro %
2.65	3.3/1	2
1.09	4.5/1	7
0.65	5.3/1	10
0.47	5.5/1	13
0.049	12.8/1	35

NON-TRADITIONAL SPORT FUEL BLENDS

Ringed pistons, ball bearing supported crankshafts

The next chart identifies non-traditional sport fuels for selected displacement, ringed piston engines having ball-bearing supported crankshafts. As we have seen, larger engines require less lubrication and nitromethane content to attain their operational sweet spot. What can be expected? A lower, steadier idle, a quicker, crisper throttle-up, and a more powerful wide-open-throttle performance, while enjoying the same level of engine component protection. The following fuel blends for various engine displacements are offered for your consideration: Note: the ratio of synthetic to castor oil (8/1) is maintained from the traditional blend for ringed, ball bearing engines.

AS AN ENGINE’S SIZE INCREASES, IT REQUIRES LESS NITRO AND LUBRICATING OIL

The synthetic lubricant used for the all of these fuel blends is polyalkylene glycol, the relatively inexpensive UCON oil. There are a multitude of other synthetics that are available including polypropylene glycol, poly esters, and polyol esters, but they are much more expensive. Fortunately, as confirmed by several lubricant experts, when castor oil is mixed with almost any synthetic, a superior lubricant is produced.

CASTOR OIL HELPS TO COOL A HOT-RUNNING ENGINE

Another consideration for non-traditional fuels that use reduced lubricant percentages: Castor oil helps to cool any size engine, but it’s especially effective with larger displacement engines where the ratio of cooling area to cylinder displacement is limiting heat rejection. Castor oil has been proven to carry away more heat through the engine’s exhaust than any common synthetic. The reason? Castor oil doesn’t burn in the combustion chamber until extremely high temperatures are reached; most synthetics flash from hot internal surfaces, such as cylinder

heads and upper cylinders; often, many synthetics simply burn, adding to the engine's heat load.
Several options are available to the engine tuner to alleviate high cylinder head temperatures:

Reduce the fuel's nitromethane content.
Reduce the engine's compression ratio (add a head shim).
Reduce the engine's propeller load.
Increase the fuel's castor oil content.

The first two suggestions will probably reduce the engine's performance and should be used as a last resort. Reducing propeller pitch and/or diameter should probably be tried first. However, if over-heating is still a problem, add a bit more castor oil to the existing fuel blend. How much? Start with 0.05% extra, and increase from there.

WHERE TO OBTAIN YOUR FUEL?

After reading the fuel bottle labels at the hobby shop, and fuel-blender advertisements in model magazines and the Internet, more often than not, you'll find that all of the ingredients and/or their percentages are not listed. A representative advertisement might state the following: Helicopter formulations: two new synthetic fuels, 25 and 35% nitro blends available … This is too little information. Here are some additional questions:

- ***Is the fuel intended for ringed or ringless pistons?***
- ***What is the total lubrication percentage?***
- ***Is there any castor oil in the lubrication package? If so, how much?***
- ***Is there a target engine displacement for the fuel? If so, what is it?***

Warning: from personal experience, don't hold your breath waiting for an answer from many commercial fuel-blending companies; some representatives won't give you the time of day, let alone a bit of air. Therefore, you can do one of three things:

- ***Buy their fuel, components and percentages unknown.***
- ***Find a full disclosure fuel blending company that will work with you***.
- ***Blend your own fuel***.

Since blending your own fuel is beyond the scope of this series, I will concentrate on option 2: As an example, Sig Manufacturing takes a different approach to the fuel-blending business; their advertising states, "Each gallon is clearly marked with nitro and oil content … [We use] 99.9% methanol, racing quality nitromethane, top of the line castor oil, and premium Klotz [synthetic] racing lubricants." Sig lists their helicopter fuel as: 15 and 30% nitro, 22 and 24% lubricants. If contacted, full-disclosure companies will probably address any other questions you may have.

There are a number of fuel-blending companies who will mix relatively small quantities of fuel (custom blends) to your specifications. Here are two:

- **Cooper's/ S&W Hobby Supply cooperfuels.com; (610) 252-2040**
- **Red Max Fuels fhsoils.com/model.html; (800) 742-8484**

There are others. A patient surfing of the Internet, or a question posted on a bulletin board or blog will eventually identify fuel companies who are anxious to blend and sell custom fuel to your specifications.

The first Stealth fighter goes to the Boneyard !!!!!

Iconic Firepower: The Outstandingly Bad Mark 13 Torpedo

by Barrett Tillman

The U.S. naval ordnance bureaucracy did some things well in WW II, and some things incredibly poorly—none moreso than torpedoes. The failure to test a primary fleet weapon adequately—even after its failings were known—appeared criminally negligent. Both submarine and aircraft torpedoes were scandalously ineffective in 1942-1943.

Product of an on-again, off-again program, the Mark 13 aerial torpedo was developed from 1927-1936, with fleet introduction in 1938. Prone to failure upon water entry and thereafter, drop parameters were limited to 50 feet and 110 knots. Naturally, "torpecker" crews were concerned about exposing themselves to flak, automatic gunfire, and enemy fighters under those conditions. Even after wartime improvements, tests showed a 69% failure rate if dropped faster than 150 knots.

Lacking in the nautical brew was accountability. A U-boat historian has noted that German engineers who designed defective detonators went to prison, while ours became admirals. In fact, the chief of the Navy Bureau of Ordnance when the Mark 13 was designed became Fleet Admiral William Leahy, President Roosevelt's White House chief of staff.

Nearly all the torpedo innovations during WW II came from industry rather than the "ordies" at the Newport Torpedo Station. The best example was the acoustic-homing "Fido" antisubmarine weapon, developed in part due to the fabulously beautiful and extremely smart actress Hedy Lamarr.

Several things could scuttle a torpedo: failure to run; erratic depth control; improper heading; and failure to explode. Some just sank for no obvious reason. Mark 13s did help sink some important ships, including the carrier *Shoho* at the Battle of the Coral Sea in May 1942, and the battleship *Hiei* off Guadalcanal in November. But as one TBF skipper said, a Mark 13 was apt to run "like a wild hippopotamus with its head above water," veering any way but toward the target.

In vivid contrast, Japanese torpedoes proved supremely reliable and effective, even with smaller warheads than the American weapon. The Mark 13's counterpart, the early Type 91 dating from 1931, could be dropped safely from 200 feet at 175 knots, with wartime improvements ensuing. Type 91s were used with devastating effect at Pearl Harbor, Coral Sea, Midway, and the Guadalcanal battles.

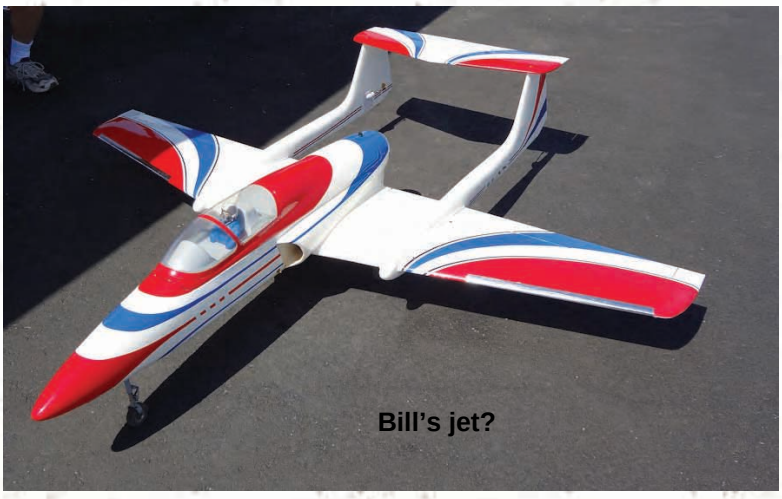
Late-war fixes finally made the Mark 13 a viable weapon. The "ring tail" version with a shroud around the propellers and a cone protecting the nose did much to improve performance and accuracy. Avengers sank Japanese carriers and battleships in 1944-1945 with reliability approaching 100 percent.

And More SVF Photos

The last I hope!

Bob Bayless and John Geyer delivering the SVF donation to the Boys and Girls Clubs of Metro Phoenix. A check for $850 is being given to Lariana Forsythe. We raised that money from The SVF 2012 Electric Fly-In

Joe Balabon SBD



Bill's jet?

What's wrong with this photo?

VIDEOS and Websites Links

Click on to view video, website

19 foot B-17 6:00
http://www.youtube.com/watch?v=9owlwlxJxPw&feature=player_embedded

B-17 Building slide show
http://www.flickr.com/photos/80143796@N07/sets/72157633358260800/show/

SW 737 Engine swap 2:27
http://www.youtube.com/watch?v=X0gkk0u0Xz0&feature=player_embedded#!

Airbus approach to San Fran 14:25
http://www.wimp.com/approachlanding/

Joe Nall "The Spirit of Nall" 5:39
http://vimeo.com/66794921

F.G. Toledo Show 6:36
http://vimeo.com/63875799

Toledo RC Show 2:24

http://www.youtube.com/watch?v=QLyc-Y_d1jE

Pardo's Push F-4 4:08

http://www.youtube.com/embed/RRNbcPS3A9c?feature=player_detailpage

Solar Impulse - Behind-the-Scenes: Bathroom by Brian 2:37

http://www.youtube.com/watch?feature=player_embedded&v=Ap2yUubnw4c#!

Spitfire 944 14:39
http://www.youtube.com/watch?v=ie3SrjLlcUY&feature=player_embedded
Extreme Jet Pilots 4:03
http://www.youtube.com/watch?NR=1&v=U3D_niWLzAA&feature=endscreen
F-4U Corsair 4:52
http://www.youtube.com/watch?v=h46Ghj9kAQw
Check out B-36J Engineer position 360
http://www.nmusafvirtualtour.com/media/062/B-36J%20Engineer.html

SVF Website Buy & Sell items.
http://sunvalleyfliers.com/classifieds/classifieds.htm

My thanks to those who passed this info on.

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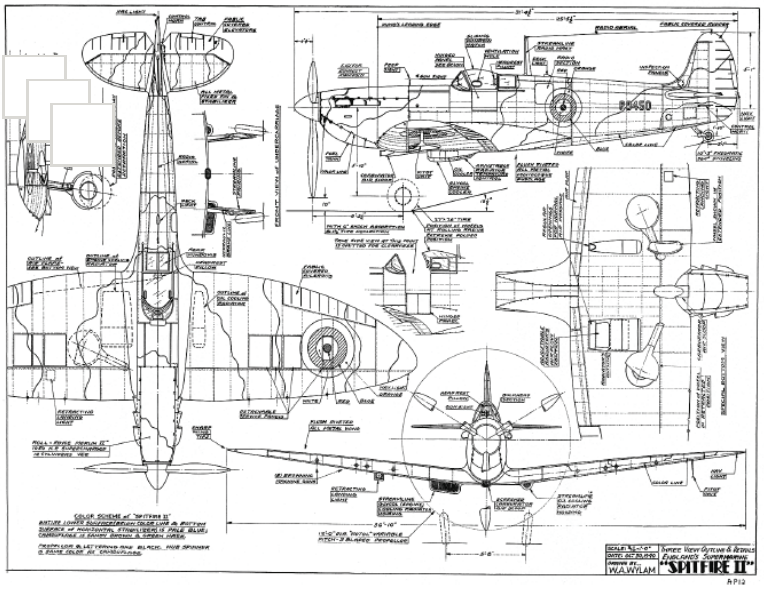

This Month Issue *6-2013*

This issue will have many more pages then last month. We got a whole bunch of articles and photos in this issue. Watch out for the snakes and keep an eye on the D'BACKS.

Some good VIDEOS to watch. *GOOD stuff in this issue, MORE photos, so enjoy!* Send those articles and photos in and for the SVF HALL of PLANES.! *Remember to **ZOOM** the **PDF** page to see more.*

Next month Issue

Who knows what will be there.

Would you like to be notified when the SLOW ROLL new issue is available? Give Gene your e-mail address. AZ49ER@COX.NET

Hope you will enjoy it. Bob
rcbobsvf@aol.com

THE SLOW ROLL

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