

FORMULA FORUM



THE IF1 JOURNAL



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MEMBERSHIP

Membership in IF1 is open
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For IF1 Technical and Procedure
rules, check on-line at:

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COVER PHOTO

Pilot Jim Jordan prepares to qualify Miss Min
with assistance from Crew Dave Massey and
Ron Izatt. The plane is featured on page 9.

Photo by Ken Linde.

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Photo by Bill Rogers

The Technical Rules Committee reviewed a total of 23 proposed changes to the rules.

As I mentioned in the Nov/Dec Forum, the membership is about to be presented with a group of changes to both our procedural and technical rules. What I would like to do in this column is discuss a few of the items you will see presented for vote and review for you the process by which rules are changed in Formula One.

We have a Technical Rules committee made up of individuals elected by the membership. There is also a committee chairman who is elected by the membership. In order for a technical rule to be changed this committee must meet and draft the proposed rule change. This change is then reviewed by the Formula One Executive Committee (President, Vice President and Secretary/Treasurer) who either approve sending the proposed change to the IF1 membership for a vote, or veto the proposed rule change. The same process is used for changes to procedural rules. That is it in a nutshell. No single person drives the train. A committee reviews the need for change and drafts the proposal. Then our elected leadership decides whether it should be voted on.

At our annual meeting in Reno this fall, we discussed many possible changes to our rules to make the class more accessible, more competitive, and safer. During the November meeting of the IF1 Board of Directors, the Technical Rules Committee Chairman and Procedure Rules Committee Chairman were tasked with reviewing the ideas that came from this meeting and drafting proposed rules changes. While our bylaws require that proposed rules changes only be reviewed by the IF1 Executive

Committee, I asked for a special meeting of the IF1 Board of Directors so that the entire group could review what the committees came up with.

The Technical Rules Committee reviewed a total of 23 proposed changes to the rules. They were asked specifically to poll active owners and pilots for input. Of the rules changes reviewed, the following were presented to the Executive Board for vote by the membership:

Current Rule:

1.6.1.6 No fuel pump may be used except the original manufacturer's cam-driven fuel pump. Electric fuel pumps may be installed but must be disabled for all flights at a race site.

Proposed change:

1.6.1.6 Electric fuel pumps may be installed.

Current Rule:

1.13 Ignition Systems

1.13.1 Only magnetos approved for the Continental "C" series or 0-200 may be used.

1.13.4 Any type of spark plug is allowed, provided it is readily available to all.

Proposed change:

1.13.1 Any type of magneto or electronic ignition (or combination thereof) is allowed.

1.13.4 Any type of spark plug is allowed.

Basically, if passed, these rules changes will enhance the reliability and safety of Formula One racing aircraft. Electric fuel pumps, if installed, help ensure a continuous flow of fuel to the engine, particularly

President's Page (cont.)

There is a strong desire to keep the class as an affordable form of racing ... [and] to adhere to our racing roots.

during the critical takeoff phase. Electronic ignition systems allow more reliable operation of our aircraft in the high RPM environment they are subject to. In addition, the committee proposed we change the wording of two other technical rules to eliminate confusion over their meaning.

Several procedural rules will also be presented to the membership for change. These changes are being proposed in the interest of bringing our procedural rules in line with the organizations by-laws. While some of these may seem mundane I urge you to look closely at all items you are asked to vote on. It is very important that IF1 operate fully in accordance with its corporate charter. These rules changes will ensure we are able to do that.

It was interesting to watch the process and discussion that went into these proposed changes. There is a strong desire to keep the class as an affordable form of racing. Also, there is a desire to adhere to our racing roots. All this must be balanced with our long term survival as a racing class. Those who don't know their history will soon lose their way, yet those who can't adapt to a changing environment will soon become irrelevant or extinct. While these rules changes are a step in the right direction as far as safety and reliability are concerned, I also think we need to look at ways to get more people interested in our sport. A member voiced loud opposition to allowing rules changes that increased the power of engines citing it as "expensive." That person's thought was that engine work is cost prohibitive and makes the class less accessible. To me the irony is that if

you want to race in the IF1 Gold right now, you need to be in an airplane with a composite double tapered racing wing. There are probably 6-7 of these airplanes available. Wouldn't it open highly competitive racing up to a larger group of individuals if we allowed talented mechanics and engine builders the opportunity to increase power. Gary Dalleske showed us in 2003 what was possible if a slab wing Cassutt had enough power. He raced in the Gold at 230+ MPH!

Few of us have the technical capability to design and build a composite tapered wing, and vendors capable of doing the work are limited and very expensive. It is my belief that engine work is something that is far more realistic for a greater number of racers. In addition, if we start looking at using newer production equipment (Continental O-200D), we will have more opportunities for corporate involvement in our racing.

These are all issues that will need to be determined by new leadership. My term of office ends in November. The promise I made to myself upon accepting the position was to leave the organization in better condition than I found it. There were old wounds that needed to be healed and old friends who needed to be brought back into the fold. From there we needed to look forward and determine the direction IF1 would head. I firmly believe these rule changes are a step in the right direction for the long term viability of Formula One air racing. Your Board of Directors did a fine job of providing the leadership necessary to bring these rules to you for a vote. I can't thank them enough for their hard

Continued on page 6

Vice President's Report

Doug Bodine



Photo by Bill Rogers

BLUF (That's "Bottom Line Up Front"): As your VP, I am here for you, and Fly Your Plane.

First, I am here to serve you and IF1. My ph # (605-393-7112) is on the IF1 website and in the Forum. Email is jethro@rushmore.com. Let me know what you like, what you don't, and what I can do for you. I will respond.

Second, it's 9 degrees here in the land of Mt. Rushmore, snow is swirling around the hangar, and I have to muster just to get the initiative to shovel the snow that finds its way in through the gaps in the hangar door. I've got a rental unit that is gutted, result of a gas company erroneously turning off service. I am preparing for a move to a country home. Kids are in school, sports, music and more. I could go on, but suffice to say, like you, I am busy. It's 100 and a quarter with freezing fog. Flying *Peril* is an easy item to drop out of my crosscheck.

Soon enough, however, the sun will be shining, the runway will be clear, and if I don't take time now to fix squawks, touch up fiberglass, order new parts and prep the plane, it won't be ready and I won't take it up. A plane ready to go, waiting in the hangar does a lot to get you motivated.

I have always felt that one of the greatest threats to IF1 and air racing in general is safety and it is a variable that we as pilot/owners have substantial impact on. Most accidents/incidents are pilot related as much or more so than airplane caused. Safety is a collective responsibility we have to our families, ourselves, each other, the IF1 org. and aviation in general—a responsibility we cannot slough off.

Flying is one of the best (and most enjoyable) ways to enhance the safety of our elite pasttime. Script out a proficiency profile. Include racing part-tasks such as race starts, aborts, level high-bank turns, upset attitude recoveries, forced landings.

One of my favorite practice profiles, and one I use in pre-Reno spin-up preparation is to fly the race-pilot checkride profile, high and low, and include the runway work. The exception is laps on course, since I am not quite as well off as Cowboy Dan Peters, and cannot purchase a Colorado ranch with enough acreage to set up my own private race course. We can, however, simulate one at altitude with a few points in a hand-held GPS.

I like to cut power at various points around the airfield and see how close I can get to an on-speed, 1/3 down the rwy. landing. It is a key litmus for my proficiency, and it is nice to actually HAVE a functional engine while figuring out how to fly the pattern, when to slip and what to use for spacing and airspeeds. When the real deal comes, your margin of safety will be much larger, not to mention your comfort and confidence. From experience I can say that an engine out event that culminates in a smooth landing on the runway is pleasantly anti-climactic. I'll also add that a race prepped plane with wheel pants glides a LOT farther, and hangs on to speed a lot better than the way I fly it here at home.

You have a remarkable flying machine that 1000s of envious pilots can only dream about taking up and mastering. You've earned the opportunity, so reward yourself—get it ready and go fly!

—Jethro

From experience I can say that an engine out event that culminates in a smooth landing on the runway is pleasantly anti-climactic.

Secretary/Treasurer Input

Mark Johnson



Photo by Lista Duren

I have received and tallied the ballots on the three proposed bylaw amendments and all three were ratified. The Bylaws have been revised and can be viewed on the Rules page of our website, www.if1airracing.com. These revisions (Sections 4.8.2, 5.3 and 15.1) clarify the process for handling mailed-in ballots, process for filling vacancies and responsibilities of pilot committee chairperson.

By the time you read this you should

have received your membership renewal. Please make any updates and return your renewal as soon as possible. Voting members also will have received ballots regarding proposed Technical and Procedure rule changes. Please return these by the due date. Any rules voted in will become effective February 1, 2011 as described in our bylaws. Please contact your board of directors if you have any questions. Have a safe and happy new year!
— Mark Johnson

President's Page (cont.)

work and support over the past several years.

As members of the organization you collectively have control over how we operate. If there are rules you would like to see changed, research the appropriate section of our rules, draft your proposal, and forward it to the appropriate committee chair or to a member of the Executive Committee. Finally, volunteer and run for office. IF1 needs talented people to help run the organization. It is your sport. Stay involved.

—Smokey

IF1 Family News

O-200D Article in Sport Aviation

Check out Tim Kern's article on the new O-200D in the January 2010 SportAviation, p. 94. This is the new engine that Smokey mentions in the President's Report. It doesn't meet current IF1 rules for use of O-200 engines, so it would take an IF1 rule change to allow this engine to be used.

Tribute to Gary Austin

Marilyn Dash has posted her tribute at <http://pylonplace.blogspot.com/>

Robert Marshall writes:

I finished school and got my A&P. I'm now working at Corporate Helicopters on Montgomery field in San Diego.

Historical IF1 Photos

Thank you to Gerald Liang for printing photos of 1947 Goodyear Racers from the negatives of E.A. Strasser. Watch for this material in future Forums.

Contributions to the Forum

Future issues will include articles on a range of technical topics. What kind of articles would be most helpful to you? What articles are you willing to write? Please contact the Forum editor with your ideas.

2010 Calendar

Early May	Application deadline for Pylon Racing Seminar. Watch for entry packets at airrace.org
Apr 30 - May 1	26th Annual International Air Racing History Symposium, Brookpark, Cleveland, Ohio.
June 16-19	Pylon Racing Seminar at Reno Stead Field.
Sep. 15-19	Reno Air Races

#69 Knotty Girl: New Racer

Philip Goforth constructed #69 *Knotty Girl* from a partially completed Cassutt II fuselage, the wing that was used on *Alley Cat* back when it was called *Li'l Quickie*, and a *Quadnickel* tail fabricated by Jay Jones. The finished aircraft, which Philip calls a "Stratocaster," has several visually distinctive features.

The turtledeck is scooped, with fiberglass above the upper longeron. Compared to a standard Cassutt, the tail has an elongated fin and modified elevators. The plane has a stock Cassutt tailwheel with pushrod steering on the right side.



Photo by Tim Adams



Photo by Lista Duren

The engine compartment includes a short prop extension, straight pipes, cooling air exhaust both from the cheek cowls and underneath, and cooling plenum integrated with the cowling. Philip installed a large sport-type fuel tank.



Photo by Bill Rogers

Underneath the plane, the composite lower cockpit enclosure fairs into the lower wing fairing. Philip hides his comm antenna in a blister under the cockpit.



Photo by Lista Duren

The cockpit canopy extends down over the wing root enclosure and forms part of the wing root fairing. The front of the canopy laps over the fuel tank cover.



Photo by Ken Linde

#22 Dancing Queen: 2009 Modifications



Photo by Ken Linde

Two teams made significant modifications to their aircraft prior to racing at Reno in September 2009: #22 Dancing Queen, shown here, and #54 on following page.



Photo by Lista Duren

Going around the pylons, #22 looks much like it did last year, but the modifications seemed to improve performance. Bill was first off the ground in all three silver races in 2009.



Photo by Bill Rogers

September 2009

Except for the new red spinner, if you hadn't seen Gordon Cole working at Reno, you probably wouldn't notice the longer prop extension, smaller cooling inlet, and more sloped cheek cowl on Dancing Queen this year. Bill also says that the new top cowl has been tightened a bit from last year. By the first heat race, the new top cowl was painted and looked like it had always been part of the plane.



Photo by Lista Duren

September 2008

Before and after photos show a longer cowling in 2009 to accommodate the prop extension.



Photo by Bill Rogers

Roger O'Day prepares Dancing Queen and pilot Bill Garrison before the Silver Final, 2009

#54 Miss Min: 2009 Modifications

For the most part, Miss Min looks like a really spiffed up version of the old Midnight Lightning, painted red. Jim Jordan kept the checkered tail fin, but patched the peeling gel coat on the wing and replaced the old one-piece wheel pants with smoother two-piece units that split at the axle. Jim fills in the details of these and some less visible modifications:



Photo by Ken Linde

On the wing, we removed all the old Bondo filler and replaced it where necessary with the newer light weight filler. When I got the airplane, the surfaces of the ailerons, when attached, were not flush with the wing. We thought the air flow over this area was causing a little drag. With the new fill, they now fit perfectly.

Dave Massey of Massey Aircraft showed his real genius when he decided to eliminate the blisters on the outer wing tips and the #8 bolts that functioned as aileron counter-weights. To keep the ailerons balanced, we added lead weights to the leading edge of the ailerons, thus keeping all inside the wing.



Photo by Tim Adams

Massey Aircraft extensively modified the upper and lower cowling – not only for ease of installation, but also to accommodate a repositioned oil cooler, upper spark plug blisters (which we might eliminate in 2010), and inlet air adjustment, and to eliminate the large gaps around the exhaust. He also modified the lower cowl to accommodate a 4 into 1 exhaust that we hope to install this year. The vent on the upper left side is positioned to allow the low pressure area of the wing to help increase airflow through the oil cooler.



Photo by Lista Duren



Photo by Neal Nurmi

September 2007



Photo by Neal Nurmi

PRS, June 2009



September 2009

Photo by Ken Linde

We streamlined the tail wheel and replaced the roller blade wheel with a Luge wheel. The advantage: the Luge wheel can handle the expansion cracks in the runway easily.



Photo by Lista Duren

Our first objective for 2010 is to get the engine to run at peak performance. We have solved the oil fouling problem that plagued us in 2009, and we're well on our way to having an engine that

will perform to our expectations. We will have it finished for PRS, where we plan to give it a good workout.

The race experience at Reno was everything I expected and more. I can't wait until September!

An Exhausting Day at the Races



Photo by Lista Duren

A race week story from the #50 Scarlet Screamer team:

Pilot:

Gary Davis

Crew:

Gene Hubbard

Greg Powell

Gary had pulled off runway Eight before we got there in the truck to meet him. He usually manages to do that, so by the time we got there to congratulate him on the race, he already had the canopy of #50 *Scarlet Screamer* open, and he was starting to make notes about the flight. Greg felt the prop for delamination heat, and I handed Gary the race clipboard. Before I could say anything, Gary announced that he had mag problems, that the engine had started running rough in the middle of the race. Well, I guess it was our turn, we had watched other planes with magneto issues over the past couple of days—fidget a bit, take the plane out to the apron for a test run, then bring it back and fidget some more. It had been an easy week so far, but now we were going to have to start working. We got Gary out of the plane, and then I looked under the engine cowling.

There was a hole in the front of the lower cowling, right side, maybe eight inches below the split line. The hole had black feathery stuff sticking out of it. My first thought was “bird strike”—that the remains of the bird

were half in, half out of the engine compartment. I’d never heard of a bird strike in an IF1 race, but I supposed it was possible. I thought of the roadrunner I’d hit in New Mexico, and was thinking about cleaning blood and seared blackbird. Greg looked at the “feathers” and recognized them as carbon fiber, blown out the hole in the cowling. Something had come flying out of the engine compartment, and now we were feeling lucky that all Gary noticed was a rough engine. I had helped swap an engine on Alley Cat back in 2003, but this time we hadn’t brought a spare. We’d gotten a good start, passed a plane, finished third, and assured a front-row start in the next race, if we were able to fly in it. In any case, there wasn’t anything to do about it just then, so we hitched up the tow bar and drove back to the hangar, waving to early-morning fans.

Back at the hangar, it was the normal post-race routine, but with a difference. Top cowl off—no oil, no hole in the case, still no idea. Bottom cowl off, and the lower #3 plug wire was dangling, and melted. The top of the plug had also melted. So we had a hole in an exhaust pipe. This could be patched. The pipes were cool by now, so I wiggled the one with the hole. It wiggled a lot. It wasn’t just a hole; the whole pipe had broken off about a half inch from the exhaust flange. It was a jagged break all the way around the pipe.

Race 50 has a four-into-one exhaust collector that is very tight to the engine. The #3 pipe was probably welded up from a half dozen parts to make all the bends. It was clear that we weren’t going to replace it, and

At first glance, the shattered carbon fiber looked like a bird strike.



Photo by Lista Duren

there wasn't a lot of metal left to weld back together. This was pretty much the low point of our week; for the first time, #50 had seemed to have a real chance to win the Gold, but with a broken exhaust, we might not be able to fly the last two races. The one piece of good news was that the flange on the broken pipe had protected the gasket seat on the cylinder. If we could fix the pipe, we could put it back on successfully. This is when we found out who our friends were.

As it turned out, that included pretty much everyone. Birch Entriiken, #50's previous owner, is resident at Stead Field, and offered to let us use his hangar, along with his TIG welder, for repairs. Someone else offered us their spare exhaust system, if we could figure out how to use it. Then Bill Garrison, pilot of #22 *Dancing Queen*, came by and told us that his brother runs a welding shop back in Kansas, and along with one of his employees, was on the team. Would we like him to introduce them to us? A few minutes later, I met Richard Garrison and Preston McClellan, and showed them the two pieces of our #3 exhaust pipe. Richard said "Sure, we can put this back together."

Prospects for flying the next day were looking a whole lot better. Someone else had offered to do the miracles; all I had to do was logistics. Even that got easier when Richard suggested that maybe we didn't have to drag the entire airplane the mile or so to Birch's hangar—he thought he could mark and tack the pipe accurately enough to leave the plane at the IF1 hangar. I was skeptical, but I didn't look forward to towing even a small airplane

through the Thursday afternoon crowd. Driving any vehicle through the pit area crowd is hard enough.

By now, it was about 11:00 a.m. and Birch used his golf cart to lead a bicycle and tow-vehicle caravan to his hangar so that Richard and Preston could start welding. Tack, check for fit, and finish. What could be easier? For the next hour or so, it looked that way—Birch's hangar had plenty of space to work in, and it was easy enough to find the welding helmets, set up lighting, and so forth. A few tack welds and we were ready to head back to the IF1 hangar and check the fit. Another drive through the crowd in a big pickup truck, and we were back at the airplane. Now, it's a lot harder to snake a whole pipe into a 4-into-1 system than to fit a bunch of broken parts, so we unbolted a couple more parts from the plane and found that the tack-welded part fit perfectly. Wonderful! It wasn't even lunch time, and we were on our way out of the crisis. Maybe.

*Richard said
"Sure, we can
put this back
together."*



Photo by Lista Duren

*Bill Garrison
inspects the broken
pipe and discusses
repair options with
Gary and Greg.*

Another pass through the crowd and we were back at Birch's hangar. Gary came by to buy everyone lunch and we thought we had an hour or so before we had an exhaust system again. Then the real fun started. There was a reason that the pipe had broken. Whenever Richard welded up one crack, another one appeared. Over and over. A couple of hours later, he ran out of cracks, and we drove through the crowd one last time to check the fit. Once more, it fit perfectly. OK, had to wiggle it into place, but it did fit. I thanked him profusely, and handed him the team's passes to the Chairman's club for the next day. Then it was my job to grind the rough edges off the inside of the pipe, and put it back on the airplane. That evening Bill Garrison pulled me aside and told me that Richard wants me to tell Gary that his exhaust system is junk. Ok, I'll pass that on.

While all this was going on, Greg was busy finding a new spark plug wire. Like most of the IF1 racers, #50 uses automotive plugs and wires, so this involved a trip to the local car parts store. Greg found the wires, but ended

Greg holds while Gene uses a Dremel tool to smooth out the inside of the repaired pipe.



Photo by Lista Duren



Photo by Lista Duren

Greg repairs the #3 spark plug wire. The heat from the exhaust melted the top of the plug, but did no other damage to the engine.

up just cutting a couple of inches off the melted wire and crimping on a new end. We installed one of the spark plugs that Champion had just cleaned for us, replaced the plug wire standoffs, and were ready to test run the engine—after five, when we could go out on the ramp. Meanwhile, we still had a hole in the lower cowl.

Everyone would have been perfectly happy to tape over the hole and fly with it that way, but word had gone around and Steve Samuelian, crew chief for #3 *Sly Dog*, told us that he had some carbon cloth and some resin, and would we like some help patching the hole? I had never done any carbon fiber work. Greg hadn't either, but he had done fiberglass. So Steve ran a short private class on carbon work. He started by having Greg trim all of the fuzzy black stuff from the side

of the hole, basically trimming back to undamaged material. Then we scrubbed off the oil film that always coats the inside of a cowling. We taped over the hole on the outside of the cowling to form a new mold. Then a couple of oversized carbon fiber patches on the inside, wet down and soaked through with resin. Greg commented on how much easier it is to wet out carbon than it is with fiberglass. We left the brush in the resin container to know when it hardened. The rest of this operation was about as interesting as watching grass grow, but it was getting to five o'clock and we had an engine to test.

Scarlet Screamer's engine has a fully enclosed plenum, so we could run the engine with the cowl off and no additional baffling—easy to inspect for exhaust leaks. I'm OK with hand propping the IF1s, but Greg was more comfortable crawling up between the wing and the running propeller to look for leaks. Number 50 seems always to start on the seventh blade; this time was no exception. Chocks in place, Gary in the cockpit, Greg crawled under the wing, and I watched them and the plane with the fire extinguisher. Greg crawled back out, engine cut, no leaks, and we're ready to button up and race.

For Heat 2A on Friday, I taped over the new black patch with red vinyl tape, along with the rest of the tape on the plane. Bill Rogers' account tells how we started on the outside front row, and finished second. No new holes, no rough engine, and we stayed ahead of Endeavor after passing on the takeoff. We had Saturday off, and Greg started thinking about how to



Photo by Lista Duren

get rid of the red tape over the patch. Once again, it turned out that we had lots of friends, and Greg came up with a cupful of blue filler. He spread the filler on, left it out in the sun to harden on Saturday afternoon, and sanded it smooth in the evening. When it came time to race on Sunday morning, I left the blue showing. If there's no tape, there's nothing to peel off in the race, and as Gary says, "Pretty ain't fast." Once more, Bill Rogers described the race and how we finished second. It was an exhausting day at the races. Everyone who helped us get flying again finished one place lower than if they hadn't. But they helped anyway. IF1 is like that.

Steve Samuelian, from Smokey Young's crew, lays carbon fiber on the inside of the damaged cowling.



Blue filler, hardening in the sun before the Gold final. It's a good thing that "pretty ain't fast."

Photo by Lista Duren

IF1 Marketplace

AIRCRAFT FOR SALE

Race #3 *Sly Dog*

Western Air Race Special built in 1983. Aircraft has raced in the Formula 1 Gold since 2007. Race engine built by Pacific Continental Engines. RCATS telemetry system. Price \$42,500. Pace cargo trailer, 27' also available with interior set up to hold the aircraft, \$6,500 Contact **Smokey Young** at (916) 715-8605 or flies2fast@aol.com



Miss Demeanor, N96SR, Race 96

Race ready FLYING Formula one: Battery, Alternator, Starter, GPS, GRT EIS, MicroAir Radio and encoding transponder, NEW CYLINDERS AND PISTONS IN 2005, ENGINE OVERHAUL by LyCon in 2006 W/ NEW CASE, CRANKSHAFT, VALVES, ETC. Twisted Composites race prop. Sturba cruise prop. Uninstalled tapered horizontal stabilizer and elevators, produced by Craig Catto, designed to fly with Miss Demeanor's tapered wing. Sport fly during the year, race at Reno in September. Win the Silver, fly in the Gold! All for \$35,500. Contact: **Steve Senegal** (650) 346-6967 ssenegal@sanbrunocable.com



Modified Cassutt IIM, Race 13

Turnkey operation with spare parts. Too many to list here. Rebuilt race motor 3 years ago. Custom 4:1 tuned exhaust. New canopy, cowling, firewall, oil tank, and gear in '06. Plane was taken from last in IF1 at 187 mph to 222 mph in 4 years of racing. Placed 4th in Silver in '08! Custom trailer sold together or separately. \$32,000 with trailer; \$28,000 without. Located in Boise. Email for more pictures. Contact: **Brian Reberry** (208) 724-6841 brian@reberryairracing.com



Prior to purchase of any aircraft, please contact the Technical Director for any IF1 rules or compliance items that may apply.

CASSUTT WANTED

Looking for an entry level, basic Formula One airplane to race at Reno. Must comply with IF1 technical rules. Contact Ira Saligman: (610) 324-5500 (Philadelphia) isaligman@saligman.com

PROJECT PARTS & PRODUCTS

CASSUTT PROJECT

Stock wing, aluminum gear, cleveland brakes. Contact: **George Budde** (405) 733-1449 patbudde@earthlink.net



Cassutt Racer Aircraft Kit/Project Plans. One piece wood spar. Welded fuselage frame (factory welded). Rudder complete...Horizontal Stab to be completed. All wing ribs complete. Aircraft plywood for wing covering. Fiberglass canopy frame. Steel landing gear with Goodyear brakes, tires & tubes. Sufficient aircraft tubing, wood and plywood to complete the project. \$3900 Contact: **Laslo Zamolyi, Jr.** Home: 610-746-2618 Cell: 610-746-2618 zamalama@aol.com EAA Chap. 70, EAA Technical Counselor



CASSUTT PARTS

National Aeronautics has Cassutt parts including Aluminum and Steel landing gear legs. cassutt.lornet.com Contact: **Ib or Sue Hansen** (303) 940-8442 cassutts@aol.com

Carbon Race Prop

54x65 Twisted Composite carbon race prop with balancing kit. Used only 12 times and in excellent shape. \$1950.00 Contact: **Adrian Coop Cooper** 604-328-1431 cooperracing@gmail.com

Racer Prop and Parts

Great cruise prop and standby race prop. Prince PC P tip (carbon fibre over maple) 54 inch diameter with 66 pitch. This is a great accelerator and gets the plane of the ground quickly. It is rated to 3890 rpm but I have not gotten past 3800 rpm which gave my Cassutt 205mph at sea level. Condition is very good with a few small scratches. Make me an offer in the \$500.00 range. I will also have mags, my spare carburetor and two prop extensions for sale - one 4 inch and one 8 inch Sabre extension. Please call if any of this is of interest: Coop. 604-328-1431
coopairracing@gmail.com



Butler Emergency Parachute

Purchased new in 2006 for \$2800, offered at \$1750. Excellent condition, maintained and stored properly. Equipped with Butler 450 LoPo reserve, which utilizes Butler's unique slider assembly for properly staged openings. Available with fresh repack or open for your own inspection. Includes original Bill of Sale, Packing Manuals and Carrying Case. Contact Robert Marshall for more information: 760 533-0341

Cassutt Projects and Inventory

Cassutt 111M, 90% complete. Needs cowl and wing finished. Includes REBUILT engine.
Cassutt 111M fully welded with tail assembly.
Cassutt 111M wing needs skin.
Cassutt 111M wing complete.
Misc inventory: engine parts (3 O-200 engines), airframe parts and instruments, one sport prop.
\$15K for all.
Contact: **Gary and Linda Elliott** for pics and inventory list: 972-264-3857
lfelliott@att.com

NAC Aircraft Display Mat (20ftx20ft)

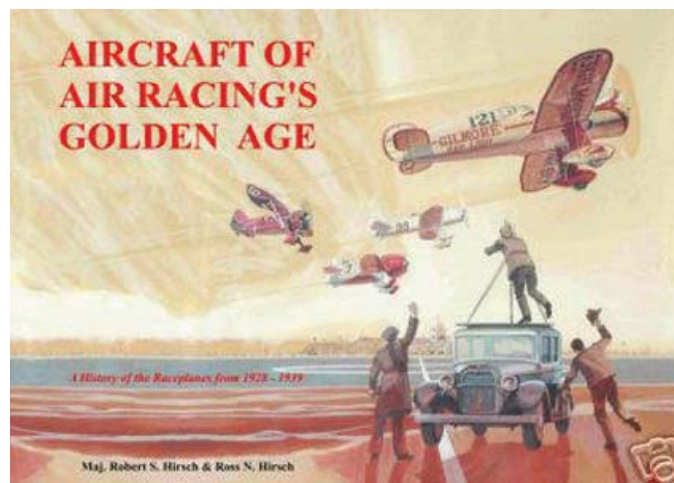
Plastic vinyl windscreen material with steel grommet boarder. Available colors: yellow, red, orange, green, blue, white, and black. Storage Bag Included
Price: \$300.00 plus ground shipping
Contact Tim Neubert 727.538.8744
TNeubert@airportnac.com

NEW COMPOSITE PARTS

Light Weight 9" Spinners, \$90
Wheel Pants, \$350.
CASSUTT PARTS: Assorted Tail Feathers, call for Quote.
LED Flashlights: Super Bright, Compact Size. Up to 155 hrs of run time on 2 AA Batteries, \$32.
10% Discount to IF1 members
Contact: **Ray Sherwood**
(530) 626-6106 rayjyay@aol.com

Graphite Race Props

Run One or Follow One
Twisted Composites, LLC
www.twistedcomposites.com
Contact: **Steve Hill**
(505) 832-1148 or (505) 321-6467
carbonprop@mac.com



AIR RACING BOOKS by Robert Hirsch
Aircraft of Air Racing's Golden Age 1928-1939,
2 Volumes, 1071 pages, 158 scale drawings: \$75 + \$10 S&H

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\$20 + \$3 S&H

Schneider Trophy Racers
Goodyear and Formula One Racing (thru 1995):
\$45 + \$5 S&H for both, or \$25 + \$3 S&H for one

Free S&H to IF1 Members
Make Checks to Maria Hirsch
8439 Dale St., Buena Park, CA 90620
Contact: Maria Hirsch (714) 828-7369



Photo by Tim Adams

#40 Miss USA, #33 Slingshot, #22 Dancing Queen, and #96 Miss Demeanor approach pylon 1 in Silver Final, lap 3, in September 2009.



FORMULA FORUM
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