



# The Bend High Desert Flyer of Chapter 1345

WEBSITE: <http://www.eaa1345.org/>

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## PREZ SEZ:

I attended an IA renewal in the Seattle area earlier this month and came away with some interesting perspectives on the FAA and regulations, new products, and owning airplanes

The FAA is not comfortable with the Light Sport phenomena. While the "production" Light Sport aircraft are in an interesting situation where they are produced to a consensus standard and do not have a type certificate. The FAA is concerned how they will be maintained if a manufacturer goes out of business since the manufacturer is the only source of approved data for a modification or repair such as a different radio or repairing a dinged leading edge. There is no contingency in the reg's for this. There are a lot of orphan production airplanes out there, but at least they are maintained per Part 43 and Amateur-built experimental maintained to their own spec's.

A representative from Precision Airmotive discussed their decision to cease production of the carburetor line. Product liability issues forced them to sell it. They now have only one certificated product line, the Bendix fuel injection products. Not to be stymied though, they have recently begun field-testing an electronic fuel injection system that will be aimed at the experimental aircraft market. It promises single lever control, reduced fuel consumption, and ease of maintenance. They will not have to jump through the hoops of certification, just continue what they have done in the past, put a good product on the market and back it up with good support. He did not come out and admit to this but he remarked that the experimental market is the fastest growing segment at the same time they are shrinking their certificated line. You connect the dots.

And finally I met some friends from my A&P school class, and one is now the head IA for the Paul Allen Flying Museum.

I remarked that working for one of the richest men in the world probably alleviates some of those situations when owners say, "How much did this little thingamajig cost?! I can't afford that!!" But no, he squawks like the rest of us on the cost of maintaining flying machines. I guess we have one thing over Paul though, and that is WE get to fly our OWN airplane when we are done working on them.

Fly Safe

David Nixon

## Schedule of Meetings & Events

| Meetings          | Breakfasts                |
|-------------------|---------------------------|
| February 13, 2008 | February 16 (Black Bear?) |

## January 9<sup>th</sup>, 2008 Meeting Minutes

### Officers Present:

|             |                |
|-------------|----------------|
| David Nixon | President      |
| Chuck Smith | Vice President |
| Milo Street | Secretary      |
| Jack Watson | Treasurer      |

**Members Present:** 16 (including officers)

### Announcements:

Dennis Douglas gave an update on the mandated addition of ethanol to auto gasoline in Oregon, stating that there are approximately 3,000 planes in Oregon with a mogas STC who would be directly affected. A proposal to exempt premium auto fuel from the requirement probably will fail because premium gas is mixed with regular at the pump to produce the middle grades.

## ***Meeting Minutes --- continued***

He urged us all to visit [www.stopeio.com](http://www.stopeio.com) to learn more about the issue and to get involved.

Work sessions on the D-260 project were cancelled over the holidays and also on 1/8 due to weather. Dennis is considering the Russian M-14P engine for the plane, which is more appropriate than the disassembled IO-470E that came with the project. David Waltman, David Nixon, and Chuck Smith volunteered to catalog the parts of the IO-470E to help determine its value. Everyone is invited to work on the plane on Tuesday nights at the hangar from 5:00 to 8:00 PM.

### **Old Business:**

Minutes of last meeting read and accepted as written in newsletter.

### **New Business:**

The raffle was back with Tony Partain at the helm. A DVD player topped the list of items given away, helping to promote heavy participation.

Ken Day and Bruce Hoisington proposed chapter flyouts this spring and summer. If this is something you would be interested in, please let your officers know.

### **Treasurers report:**

The 2007 year ended with a cash balance of \$1719.58 and a net loss of \$383. The loss was primarily because the bulk of 2007 membership dues were recorded in 2006, while dues for 2008 are all being recorded in 2008.

### **Program:**

Len Fox, the evening's speaker was unfortunately called away on business at the last minute forcing the postponement of the program until a later date.

Meeting adjourned

*Milo Street*

### ***Program: February 13, 2008 Meeting***

Chuck Smith has arranged for a weatherman from KOHD TV for the February EAA program. No other details but assume we meet at 7:00pm, EAA hangar at Bend Muni.

### ***Plane flips on snowy airstrip***

From KTVZ.COM news sources



Three people, one a visitor from Israel, escaped injury Friday afternoon when their Cessna 172N (N734KU) flipped onto its top while attempting to land at Beaver Marsh, south of Chemult.

William Boyd, 41, of Hillsboro, had been flying in the Crater Lake area when he tried to land at Beaver Marsh, unaware the landing strip had about three feet of snow on it. As the plane touched down, it flipped onto its top.

The occupants walked away from the aircraft and were taken to Bend for a car to continue their travel. Klamath County sheriff's deputies, ODOT and Chemult Ambulance crews assisted OSP. The Federal Aviation Administration was notified of the incident.

## ***The D-260 project***

We have continued the D-260 work, focusing on the control stick area and linkages and the trim tab, and our engine sub-group (David Waltman, David Nixon and Chuck Smith) have started looking into overhaul of the IO-470E. Here's the current status:

1) Torque tube: We confirmed the orientation and layout of the torque tube and the rods associated with the elevator-control stick. We drilled up one of the rods and secured it with AN3-12A bolts. We decided to use CherryMax rivets to secure the aileron drive arm and the torque tube end pieces to the torque tube. While between David Nixon and myself we had scads of CherryMax rivets, we only had 4 of the size we needed, so today I ordered 20 CR3213-5-3 rivets. I should receive those by Tuesday so, after we prime the tube, we can rivet that assembly together.

2) Rudder Bellcrank. The plans for the rudder bellcrank show a 7-inch-long threaded rod that secures the bellcrank assembly to the fuselage. I called Spencer aircraft and sure enough, they had an AN4-74 bolt, so we'll be able to use that, and that should be available on Tuesday as well. The bellcrank assembly also calls out two "Torrington B-610" bearings. I had no idea what those were but after doing some web research I learned that that is a needle bearing and, apparently, a fairly common one at that. I'm going down to Bend's Applied Industrial Technologies to get them...they say they've got them in stock. So those should be available for Tuesday as well.

3) Trim Tab. Some discussion remains on this subject. I think we've decided to replace the manual trim with an electric trim servo. While that will reduce the weight a bit and simplify the trim function, there is a potential problem with the height of the MAC trim servo: it may be higher than the thickness of the forward spar of the elevator. The trim tab itself might also need to be re-built because the plans call out the tab on the right elevator but the existing trim tab was built for the left elevator... We are going to fabricate a 4130 tubing assembly and weld that into the trim tab region on the left elevator.

This is needed because the guy who built the elevators built two right elevators. (Gads...this project gets "funner and funner" all the time.)

4) IO-470E. While I haven't made a decision on the engine to use for the D-260, we're trying to maximize the value of the engine. The engine sub-group (see above) has developed a list of parts that need to be replaced at overhaul. Beyond that, David Waltman is preparing a plan for how to go about cleaning up and inspecting the parts we have to get at the total estimated cost to re-build the engine. He'll be reviewing that plan with the other subgroup members and assigning and prioritizing tasks within the next week or two. If an overhaul can be done cheaply enough, the engine will have more value than just as a pile of parts.

Next work session: Tuesday, January 29th at 5pm....

Regards,  
*Dennis Douglas*

## ***Skilled Landing at Aspen***



“So at about 10:00 a.m. this morning, tower rolls our emergency equipment for a Piper Malibu on an eight mile final with ‘low oil pressure and a possible oil leak’. On short final, I hear the pilot advise the tower that he'll make the runway, but that he has virtually no forward visibility due to oil on the windscreen.”

## **Aspen ...**

“All of us looking out of our office windows see the aircraft roll out long on the runway, and notice that the entire prop and spinner are missing, since it all sheared off at the crankshaft, *IN FLIGHT*, apparently at least eight miles from the airport.”

## **SpaceShipTwo and WhiteKnightTwo Unveiled**



**Model of WhiteKnightTwo with SpaceShipTwo.  
Photo by Adam Smith**

The highly anticipated designs of SpaceShipTwo and WhiteKnightTwo (WK2) were unveiled January 23, 2008, in New York City, at a standing-room-only press conference hosted by Sir Richard Branson, founder of Virgin Galactic, and Burt Rutan, CEO of Scaled Composites.

The partnership between Branson and Rutan was announced on stage at Theater in the Woods at AirVenture Oshkosh 2005.

The two vehicles are based on the technology of Rutan's SpaceShipOne, which won the \$10 million Ansari X prize in 2004 by flying into suborbital space twice in the space of six days. Virgin Galactic is scheduled to have an exhibit at this summer's EAA AirVenture in Oshkosh. EAA is also one of several official partners in the SpaceShipTwo project.

### **WhiteKnightTwo**

The most obvious difference between WhiteKnightTwo and its predecessor is its size; this will be the largest all-composite aircraft ever built.

At 140 foot, the wingspan is roughly that of a B-29 bomber. In addition, Rutan believes that WK2's single main wingspar is the largest single composite piece ever made for an aircraft, dwarfing the largest components on both the Airbus A380 and Boeing 787.

The flight simulator for WK2 has been built and is fully operational. Pilots who have flown the simulator are reporting spectacular power and performance from the airplane's four Pratt and Whitney PW308A engines.

WK2's twin-boom, twin-cabin layout allows it to carry a large under-slung payload. The left hand cabin mimics that of SpaceShipTwo, with a forward flight deck and passenger cabin behind. The right hand cabin contains no flight deck, but can be configured for training future spaceship passengers for the G-loads of their upcoming space flight; a passenger cabin so friends and family can watch the rocket launches of their loved ones; and as a scientific laboratory for high altitude or microgravity experiments.

WK2 is capable of carrying other high-altitude payloads beyond SpaceShipTwo. Potentially, it could launch small satellites into orbit, dramatically reducing the cost of such endeavors, compared to using rockets or the Space Shuttle.

Rutan has calculated that it is theoretically possible to use WK2 to place a single human passenger into orbit.

Construction is 70-80% complete, with rollout and first flight expected in the summer of 2008.

### **SpaceShipTwo**



SpaceShipTwo retains the unique “feathering” design of its predecessor. Photo by Adam Smith

## ***SpaceShipTwo/WhiteKnightTwo .....***

SpaceShipTwo has been designed to reach a peak altitude of 110 kilometers, slightly higher than that reached by SpaceShipOne. This will give passengers approximately 4½ minutes of weightlessness. For reentry, the breakthrough “feathering” technology featured on SpaceShipOne will be used.

Although the feathering feature has been retained, SpaceShipTwo is much bigger than its predecessor. The main passenger cabin has been designed large enough to allow the six passengers to unbuckle and experience the truest sensations of weightlessness. The view will be enhanced by 18-inch windows in the main passenger cabin, much larger than the small portholes of SpaceShipOne.

A low wing configuration is expected to provide more stability at supersonic speeds. The high wing of SpaceShipOne contributed to a departure from controlled flight on Mike Melvill’s second space flight in 2004. With safety and reliability in mind, all the spaceship’s major systems have been designed with redundancy - including undercarriage and feathering mechanism. The higher altitude and weight of SpaceShipTwo means that - despite the feathering mechanism - it may need a little more thermal protection.

Construction of SpaceShipTwo is estimated at 60% complete. Progress has been slowed somewhat by continuing investigations into the fatal accident that took place during work on the rocket engine in summer of 2007. First test flights of SpaceShipTwo are hoped for at some point in 2009, but the whole team emphasizes that pressure to make the first flights will not override the primary desire for safety. “We’re in a race with nobody,” said Will Whitehorn, president of Virgin Galactic.

### **Volume**

Virgin Galactic has ordered five spaceships with options for seven more, and Rutan anticipates an ultimate production run of up to fifty spaceships and fifteen launch airplanes. The system has been designed to accommodate multiple launches per day. Within the first twelve years of operations, the system has capacity to take 100,000 passengers, with the peak rate being achieved five to seven years after the first commercial flights.

### **Astronauts**

Virgin Galactic has received deposits from 200 astronauts totaling over \$30 million. Ticket price is currently \$200,000, although as passenger volumes increase, the goal is to dramatically reduce this price to make spaceflight affordable to the maximum number of people.

Virgin Galactic is challenging the widely held belief that astronauts need to be “superhuman” in terms of health and fitness. Eighty ordinary people have undergone medical tests and centrifuge training, to ensure they are capable of making the flight into space (which involves loadings of 3.5G on the way up and 6G on the way down). 93 percent of those applicants passed the tests, with the oldest being 88 years of age. Richard Branson’s father intends to fly in space at age 92!

### **Safety**

The team is devoting significant efforts to making this a safe program. As an airline operator, the Virgin group has a deep commitment to safety, and believes that for Virgin Galactic to be successful, it will need to achieve a level of safety “hundreds of times better” than the record that established by government space flights. (Rutan points out that of the 450 or so people who have flown in space since the 1950s, 4 percent have been killed in accidents.)

### **A Unique project**

Rutan confessed it was an unusual experience to be unveiling models of his designs rather than the real thing. He likes to fly and prove his aircraft first, then reveal them to the world. However, the intense levels of interest in the Virgin Galactic program led the team to agree it was best to unveil the designs in advance. They hope to get some peace and quiet in Mojave, California, to complete construction.

### **Environmental comments**

Sir Richard Branson revealed that the new space vehicles would operate on a specially developed bio-fuel. “We are looking forward to working with Pratt and Whitney and Virgin Fuels to trial an appropriate bio mix for the PW308A engines that will be powering our new carrier aircraft,” he said.

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