The Bend High Desert Flyer of Chapter 1345

WEBSITE: http://www.eaa1345.org/ *KBDN AWOS 134.425* **AUGUST 2011, VOL10, #8**

PREZ SEZ:

July 2011 Meeting Agenda, EAA 1345

1. Social Hour: 5:45-6:15pm
    - Pizza and Drinks
2. Call to order: 6pm
3. Introductions
4. New Business
    - Ask for volunteers to organize BBQ for August 10th
    - August Presentation, Paramotor Demonstation by Byron
    - Talk of the Town, Drone Discussion, August 3 at Red Hanger
8. Adjourn
9. Presentation, 6:20pm
    - Walk to Windward Performance

Next meeting:

Our next Chapter meeting will be on August 10th at 6pm in the Ellsberg hangar. It's our annual BBQ. Since Erik will likely not be able to join us, we are looking for volunteers to help with the food preparations. Sean can provide a propane grill, but will need someone's truck to help get it there. We also need help purchasing the food either day of or prior assuming someone has enough space in his or her refrigerator/freezer. Please bring your spouse and/or family. We will ask for a head count several days prior so we know how much food to buy. During the BBQ, we will have a powered- paraglider flying demo by Byron who attended our June meeting. Hope to see you all there.

Thomas Phy, Vice-president

Treasurer's Report

Financial for period 1/1/11 through 7/31/11

Total Income:	$580.00
Total Expense:	$401.49
Net Income (Loss)	$178.51
Cash Balance:	$2247.91
Accounts Receivable:	$200.00 (2011 dues)

Jack Watson, Treasurer

July meeting minutes

We met at the Ellsberg Hanger for pizza, drinks and some conversation between 5:45-6:10pm. Prior to walking to Windward Performance at 6:15, we had a very short meeting consisting of introductions and a few announcements.

Introductions

It was a small crowd, but if memory serves me correctly, we had the following people attend. Sean, Thomas, Mike Bond, Bruce, Bud, Devon and his Dad Erik, Kelly, Peter, Jim, Mike Custard.

Presentation

After the very short meeting, we walked down to Windward Performance to see the projects they are working on. Phillip, a new aeronautical engineering grad from Purdue (Go Boilermakers!) was kind enough to stay late and show us around. Windward is currently working on some great projects:

1. **Perlan Project**

They are building an 80ft wingspan glider to soar the wave lift over southern Argentina. Steve Fossett was originally involved in this project.

Perlan Project – continued

The glider will be pressurized and they hope to reach 90,000 ft. The prior record for a glider is roughly 51,000 feet. We were able to see the wing skins, fuselage skins and the assembly gigs.

It was impressive seeing the wing span the length of two hangars.

2. **Goshawk**

Windward is entering a modified, electric version of their Sparrow Hawk, in NASA's 2011 CAFE Green Flight Challenge. The modifications include a specially designed propeller and electric motor. We got to see the glider being modified with the carbon fiber hub and propeller. **See all CAFÉ entries in the list on the last page of this newsletter**.

3. **Roadable GlaStar**

Another interesting project. They have taken over the design and modification of a four place GlaStar (Sportsman). The previous firm's design proved too heavy to fly/drive if anyone wanted to be in the airplane, so Windward has taken over with that goal in mind. It should be interesting to see the results.

Thanks again to Phillip and Windward Performance for hosting us. It's a pleasure to see such advanced designs and manufacturing right here in Bend.

Sean Harbison, President

This event will be over when you receive this newsletter, but could affect us all …

TALK OF THE TOWN

www.talkofthetownco.com RSVP requested

TUESDAY, August 2nd

6:30pm arrival, 7:00pm taping begins.

GIBSON Hangar (aka, "Red Hangar") at the Bend Airport.

TOPIC: DRONES IN CENTRAL OREGON

Bend Broadband is putting together a filmed, town hall meeting to discuss the drones in Central Oregon. As you may recall from our previous chapter meeting this winter, EDCO is pursuing the subject as a possible way to promote business development in our area. Come join the meeting if you want to know the latest on these efforts and get your opinion heard.

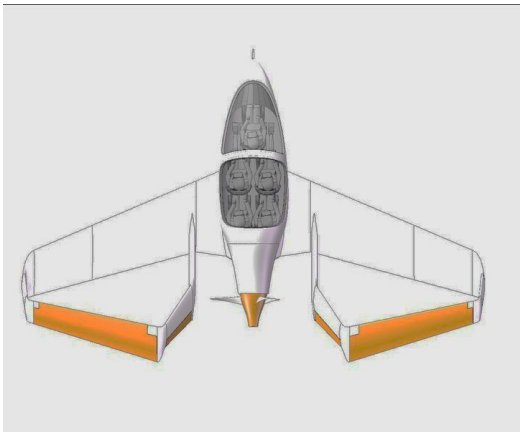
The "Synergy"

It's not very often that a true breakthrough in aircraft design comes along, but John McGinnis, EAA 797858, of Kalispell, Montana, is quietly confident he has one.
He unveiled his new aircraft design, Synergy, at the fifth annual CAFE Electric Aircraft Symposium (EAS V) and believes it is capable of winning the $1.65 million NASA/CAFE Green Flight Challenge.

Describing it as half futuristic sailplane-half fighter jet, McGinnis designed the roomy five-to seven-place Synergy after studying nearly 80 years of aeronautical research by such aviation luminaries as August Raspet, Fabio Goldschmied, John Roncz, Burt Rutan, Paul MacCready, and Bruce Carmichael.

The "Synergy" name derives from the idea that the aircraft synergizes six proven aeronautical principles into a single, extremely efficient package. They are:

Laminar flow
Non-planar configuration
Wake-immersed propulsion
Open thermodynamic cycle
Pressure thrust
Optimum volumetric displacement waveform



Synergy's signature shape, features an innovative "double box tail" - as opposed to a box wing, which have been known to have safety issues. The double box tail creates extremely low induced drag - described by McGinnis as the "glider-like efficiency of a 46-foot wingspan packed into a much stronger 32-foot package."

Like the canard designs that inspired its drag reduction priorities, Synergy is designed to be incapable of unintentional stalls and won't spin in computer simulation, he added.

McGinnis built a 1/4-scale electric-powered technology demonstrator R/C model that successfully flew for the first time in 2007. He says the full-scale technology demonstrator will achieve higher speeds and greater fuel efficiency per horsepower than any comparably spacious airplane.

Synergy is also noteworthy because it's the first aircraft designed around the DeltaHawk engine, a turbocharged, liquid-cooled, 200-hp diesel currently undergoing FAA certification at the company's headquarters in Racine, Wisconsin.

"Synergy is a true grassroots effort, being funded by friends, family, and the generosity of strangers," McGinnis said.

McGinnis is anxious not to over-hype his project and understands that many people will be skeptical until a full-size aircraft has actually flown and demonstrated its performance, which he will not make claims about. He has openly shared many of his ideas via Internet message boards in Oshkosh365, which have stimulated vigorous discussion. One consistent theme of feedback is to commend John's spirit and wish him well in his endeavors, with many appreciating the challenges involved in attempting to raise the bar of aeronautical performance.

Synergy specifications

Overall Length: 21 feet
Wing Span: 32 feet
Wing Area: 144.6 square feet
Gross weight: > 3,100 pounds
Empty weight: < 1,650 pounds
Gross in-flight wing loading: 23.2 lbs/sq. ft.
Power: 200-hp 2-stroke turbo/super diesel Delta Hawk
Cabin Width, interior: 56 inches
Gear: Tricycle, retractable
Minimum flight speed: <55 KIAS (dirty)
Range: >1,500 nautical miles w/std reserve

Don't miss our September meeting!

Thomas has lined up Lauren Paine to present at our September meeting. Lauren produces articles for the EAA Sport Aviation Magazine. You can see his latest in this month's issue, page 110. This is a great opportunity for our club and Thomas made the great suggestion of inviting Chapter 617 and perhaps others to join the meeting. Lauren will fly his RV8 if possible or drive. Thomas will be hosting him at his place overnight.

Sean Harbison

Final entries for CAFÉ Green Flight Challenge (note the Goshawk and Synergy)

#	Team Leader/Team Name	Vehicle Name	State	Seats	Max Power (kW)	Span (feet)	Energy
. 1	Einar Enevoldson/PC Aero	Elektra 1	CA	1	21	27.6	electric
. 2	Gene Sheehan/Feuling GFC	Team Feuling GFC	CA	1	16	16.7	electric
. 3	**Gregory Cole/Windward Performance**	**Goshawk**	**OR**	**2S**	**na**	**51.0**	**electric**
. 4	Lawrence Speer/Green-Elis	Greenelis PXLD	CA	2S	30	35.5	diesel
. 5	Mike Stude/Michael Stude	Wings of Salvacion	KS	1	32	16.7	ethanol
. 6	Richard Anderson/ Embry-Riddle Aeronautical University	EcoEagle	FL	2S	100	75.0	hybrid
. 7	**John W. McGinnis/Synergy**	**Synergy**	**MT**	**6**	**142**	**32.0**	**bio-diesel**
. 8	Greg Stevenson/GSE-Aerochia	Econo-Cruiser 3000	CA	2T	15	48.3	bio-fuel-hybrid
. 9	Ira Munn/IKE Aerospace	SERAPH	CA	1	30	15.0	biodiesel-hybrid
. 10	Eric Raymond/e-Genius	e-Genius	CA	2S	60	55.4	electric
. 11	Jim Lee/Phoenix Air	PhoEnix	FL	2S	44	47.3	electric
. 12	Scott Sanford/Yuneec	Yuneec E 1000	CA	3	120	56.0	electric
. 13	Jack Langelaan/Pipistrel-Penn State University	Taurus G4	PA	4	145	69.1	electric

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