The Bend High Desert Flyer of Chapter 1345

WEBSITE: http://1345.eaachapter.org/ *KBDN AWOS 134.425* **January 2017, Vol. 16, #1**

PREZ SEZ:

Happy New year to all our members and their families!
We had a great turn out at our December Dinner/ Meeting; lots of folks from the Central Oregon, Oregon Pilots Association, Civil Air Patrol, and our chapter.
Awards were handed out (I even remembered to bring them in from my car this year!) to all of our valuable chapter volunteers. The snows kept some away but those that came had a great time.

Dale will continue doing his "Young Eagle" presentation and is looking for volunteer help! If you have any interest in expounding on your "Aviation Knowledge", Dale will let you educate the Young Eagles. Dale is also setting up "Aircraft Building" workshops. Any help you can provide would be appreciated!
We'll be meeting at the Robertson Hanger, 63032 Powell Butte Hwy. **Wednesday January 11th**. Young Eagles starting at 5, food on the grill for 6 and the monthly meeting at 6:30.

Lots of aircraft projects to look over but, one RV-7A is no longer gracing our hanger. Rick Stacy's RV is now in Ohio! I had the pleasure of flying it East (between snow/ rain showers) and was able to visit with my daughter and her family in Springfield MO for Christmas. Then on Tuesday 12/27, I delivered the -7 to Bluffton Ohio and Rick! Quite the adventure and one I'll remember for a long time; lots of stories to share.
Looking forward to seeing everyone at our January meeting!

Thomas Phy,
President

Treasurer's Report

Financial For period: 01/01/16 to 12/31/16

TOTAL INCOME	$1220.00
TOTAL EXPENSE	$452.02
NET INCOME (loss)	$767.98
TOTAL CASH IN BANK	**$2940.64**

Jack Watson, *Treasurer*

December Meeting Minutes

Minutes of a Special meeting of The Chapter held on Wednesday, December 21, 2016, at the "Black Bear Diner" on Hwy 97 in the City of Bend, OR, on the occasion of the celebration of our annual Christmas party.

ATTENDEES
There were some thirty-two in attendance including: Thomas Phy, Jim Standish, Mike & Sheryl Robertson, Mike & Ann Bond, Jack Watson, Henry Graham, Dale & Lynn Anderson, Forrest Seale, Mike & Monique Pederson, Jacob Mueller, Kim Muinch, Norb Volny, Joey Solomon, Matthew & Faye Phllips, Bill Logan, Jim Mateski, Don Wilfony, Larry Sims, Gary E. Miller, Devan Simkins and Larry Hagemeister, representing EAA chapter 1345 as well as guests from the Oregon Pilots Association and QB.

Meeting Minutes – continued

DINNER
Beginning at 5:30 pm, those assembled began ordering beverages and then dinner from the regular menu and began an evening in celebration of another successful year for our Chapter.

CALL TO ORDER
At 7:05 pm President Phy called the meeting to order and initiated a round of self-introductions which concluded at 5:30 pm, followed by the distribution of awards to Chapter Officers from EAA National and concluding with the recounting of memorable experiences from members which finished at 7:40 pm at which time the meeting---

ADJOURNED

John S. Watson
Secretary /Treasurer

Stratos 714

On the next page is a local development which flew last month --- this is from the company website promotion but describes interesting design philosophies ….

ED NOTE:
Remember, the new KBDN traffic pattern changes were implemented starting 12/1/16

The AWOS also carries the NOTAM details

Young Eagles Support Group Meeting

Agenda

Young Eagles and Eagles Support Group Meeting
(in other words everyone interested in aviation are welcome to attend any/all sessions)

NEW - 4 PM, Wednesday, January 11, 2017
Bend Builders Assist (EAA) hangar, Bend Municipal Airport

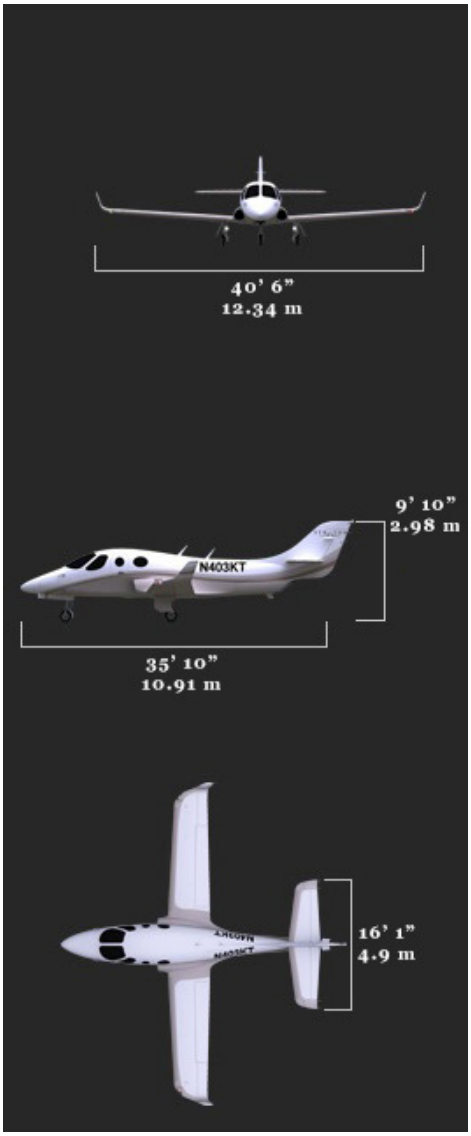
4 PM **Aircraft Building Workshop (everyone welcome) – Topic: What EAA has to offer for aircraft building (overview)**
Sport Air Workshops – Wood, Fabric, Sheet metal, Electrical, etc.
Discussion of workshops and build opportunities and challenges
Tool try-outs: Air tools versus electric – what's the difference?
Future workshop topics?

5 PM **FAA Safety Team Topics: Forget that! What about Skis??? We've been getting so much snow lately, what are the implications for using skis on an aircraft? What are the considerations and the different types of skis? How do they work?**
A checklist of ski issues – Could I? Should I? What would make it practical?

6 PM **Pizza, etc.**

6:30 PM **EAA Chapter 1345, High Desert Flyers, monthly meeting**
(Ask Tom how his flight to Ohio, in Rick's new RV, went?)

Dale Anderson,
Young Eagles Coordinator



Stratos 714 specifications		
Seating	4	
Type of Certification	FAR 23,Single pilot, VFR day/night, IFR, Known icing conditions	
Propulsion	Pratt & Whitney Canada JT15D-5	
Takeoff Thrust	2,900 lbs	12.9 Kn
External Dimensions		
Height	9.8 ft	3.0 m
Wing Span	40.5 ft	12.3 m
Length	35.8 ft	10.9 m
Cabin Dimensions		
Cabin Height (max)	4.8 ft	146 cm
Cabin Width (max)	4.7 ft	143 cm

Stratos 714 specifications		
Cabin Length	9.5 ft	290 cm
Volume	160 cu ft	4.5 m3
Take off to 50 ft, MTOW,	1,970 ft	600 m
Sea level, ISA Std day		
Landing from 50 ft, MLW,	2,240 ft	683 m
Sea level, ISA Std day		
Stall Speed	63 Knots	117 Km/h
Max Cruise (at 30,000 ft / 9144 m)	415 KTAS	769 Km/h
Time to Climb to FL 370	17 min.	
Service Ceiling	41,000 ft	12,500 m
Range with 4 Occupants (NBAA IFR	1,500 nm,	2779 Km,
Range w/100 nm alternate)	402 KTAS	744 Km/h

Simple engine

Stratos 714 is powered by a single PWC JT15D-5. A single engine design versus twin engine reduces power and fuel management workload. This significantly reduces pilot workload compared to turbo prop and piston.

Simple and/or automatic systems

By designing simple and/or automatic systems the pilot workload is further reduced. In addition to the required autopilot, automatic environmental controls and other systems will reduce pilot workload. Our guiding philosophy in designing for safety is to prevent the accident in the first place. In 2005, 76% of all general aviation accidents were attributed to pilot error.

An aircraft with excellent flight characteristics and a low pilot workload contributes significantly to accident prevention. SAI will investigate every available option to enhance safety, and will carefully evaluate its usefulness for the Stratos 714. Minimum pilot experience requirements will be similar to that of today's VLJ's. For example, minimum pilot requirements for the Eclipse A500 are a private pilot's license, an instrument rating, and 500-1000 hours total flight time.

The Stratos 714 will be simpler to operate than the twin engine Eclipse A500, and we believe the Stratos will be easier to fly than the majority of the high performance general aviation aircraft available today. SAI will work with insurance providers to establish pilot minimums, and will provide extensive initial and recurrent training programs.

The Stratos 714 will safely land at much lower speeds than twin-engine jets with similar performance. As a Very Light Personal Jet, emphasis has been placed on making the Stratos 714 handling simple and predictable with benign stall characteristics for safe flight by owner-operators, even at low speed.

The Stratos 714 will cruise at Mach 0.7, yet have approach speeds comparable to piston singles. Developing an aircraft capable of flying at 400 knots but with excellent handling qualities at 80 knots was a tough challenge. The key to achieving these competing demands is the Stratos 714's unique airfoil and wing design.

Stratos 714 Wing Design

The Stratos 714 wing has been designed to sustain extensive laminar flow in the cruise. The drag benefits from laminar flow are well known to pilots of gliders and the new generation of composite piston singles. However, unlike these aircraft, the Stratos 714 has to maintain this laminar flow at transonic speeds. In addition, the Stratos wing must have a generous buffet margin to allow for gusts and maneuvers at high speed. At the other end of the speed range, the wing must generate high lift with benign stall characteristics. This combination of requirements is unique to the 714 and required the development of a correspondingly unique wing.

The highly efficient wing is the result of the application of a novel design approach. Many companies now use computational fluid dynamics (CFD) software to simulate the airflow around airfoils, the wing or the whole aircraft. However, Stratos have taken the application of CFD to the next stage by writing software to carry-out analyses automatically as part of the wing design process. An optimization method implemented in the software modifies the wing profile according to the CFD analysis results. After many hundreds of such modifications, the software converged on the wing profile which best matched the aerodynamic and structural requirements.

Stratos 714 Wind Tunnel Program

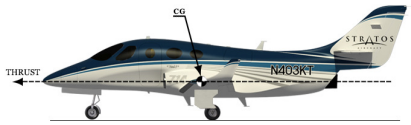
In August of 2011 a 1:5 wind tunnel model was tested at the University of Washington wind tunnel. The objective of the wind tunnel program was to verify much of the theoretical CFD analysis. Over 90 wind tunnel runs were completed. The results verified and showed excellent correlation to the CFD analysis. Some areas of concern proved to be non-issues. However, an issue with airflow separation was discovered that is being addressed.

The Stratos Configuration advantage

A single engine jet has many advantages over a twin engine jet. However it poses the question of the optimum location for engine placement.

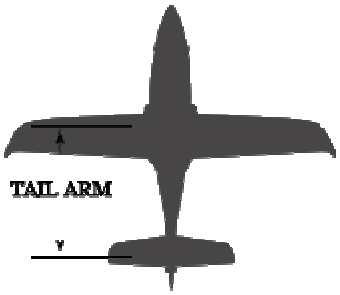
The general aircraft layout including engine placement is referred to as "configuration". Early in the program, considerable time was spent studying various configurations prior to settling on bifurcated inlets with the engine mounted centrally in the fuselage. This was primarily the result of three considerations:

1. Thrust Line vs. Center of Gravity



A decision was made early in the program to have the thrust acting close to the center of gravity to minimize pitch changes with power and the consequential effects on adverse handling qualities and certification requirements. This engine location design element avoids the requirement to develop an automatic trim system to deal with the issues of power-pitch coupling. While such systems have been proposed for other aircraft, none has yet been certified on this category of aircraft.

2. Tail Arm



A second requirement established was to design a long tail arm. A tail arm in simple terms is the distance between the aircraft center of gravity (cg) and the horizontal tail (see graphic left). Locating the engine centrally and forward gives a longer tail arm than aircraft with aft mounted engines. A long tail arm reduces the required tail size and provides good short period damping. The negative tail lift coefficient at the stall is also lower than aircraft with shorter tail arms, reducing the trim decrement between the wing maximum lift coefficient and the aircraft maximum lift coefficient. The longitudinal position of the engine also puts the aircraft cg close to the payload and fuel locations, thereby minimizing the required cg range.

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