



# Experimental Aircraft Association

## Chapter 135

### News



March 2017

## NEXT CHAPTER MEETING

will be held

**SATURDAY - MARCH 11, 2017**

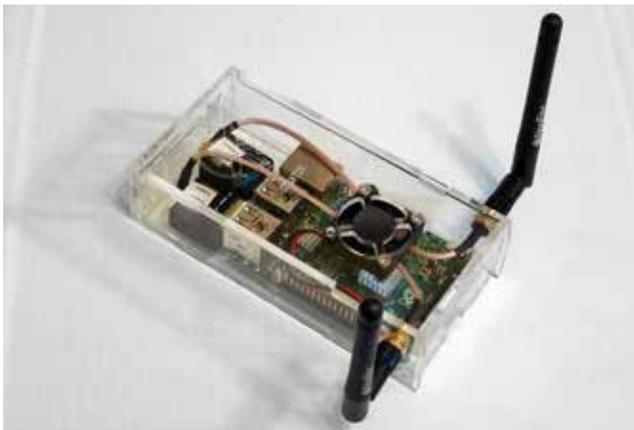
**Board Meeting at 5:00 PM**

**Regular meeting 6:00 P.M. - Exec 1, upstairs**

**March meeting will be a building program,  
assisted by Greg Long and Stuart Rauh.**

**Building an ADSB "In" unit using a raspberry pi circuit board.**

***Builders: Please bring a small phillips scredriver and a needle-nose pliers***



### UP COMING PROGRAMS:

#### **April Program:**

meeting features Jerry Grogan,  
on metal working

#### **May Program:**

meeting planned to be a weather  
program, details not yet set

### **Recap of the Feb. meeting:**

We had 29 people in attendance,  
including 5 from Marshalltown, 2  
from Knoxville, and two former  
members from a few years back.

Ted Lockard gave an excellent  
program on the new Medical rules  
and requirements.

More pictures on page 5



# Assembling/testing ADS-B Stratux

Greg Long , EAA Chapter 135, March 11, 2017 Group Build

## Parts list:

- Raspberry Pi 3 Model B Motherboard
- Stratux Software card (per-programmed micro SD card)
- Stratux case with cooling fan (clear acrylic)
- Stratux 1090ES & UAT radio receivers and antennas
- 6000 mAh battery pack
- Optional GPS

## Assembly instructions:

- Install two heat-sinks onto top of Raspberry Pi motherboard, note placement by matching sizes.
- Insert 1090 and 978 radio receivers in two separate USB ports side by side on the bottom of the Raspberry Pi motherboard.
- Connect an antenna cable to each radio receiver.
- Mount Raspberry Pi motherboard into Stratux case with mounting stand-offs and hardware. Insert mounting screws into bottom of case, apply tape to the screw heads to hold them in the case. Place the stand-offs onto the screws inside the case. Carefully place the motherboard onto the screws with stand-offs. A dowel with double side sticky tape works well to hold nut to get it started on the screw. Tighten hardware.
- Mount cooling fan onto case lid with hardware. Fan blowing into case, label side down facing inside the case. Orient Fan so that power lead is closest to connection point.
- Insert per-programmed micro SD card into Raspberry Pi motherboard via slot on the case.
- Mount the two antenna cables on either side of the inside of the case with hardware. Smash the split ring washer then put it on the outside of the case. Mark the receiver frequency that the cable is connected to on the case with a Sharpie next to each connector.
- Install optional GPS by passing cable through case and connect to an open USB port.
- Using needle nose pliers attach cooling fan connector to the Raspberry Pi motherboard double row pin header. Install on 2<sup>nd</sup> and 3<sup>rd</sup> pins from the mounting screw on the row of pins closest to the motherboard edge. Orient fan connector where the 2<sup>nd</sup> motherboard header pin is positive (red wire of the fan connector) and the 3<sup>rd</sup> motherboard header pin is negative (black wire on the fan connector).
- Attach the 1090 MHz and 978 MHz antennas to the cable connectors on the case as previously marked. Pay attention to install on the same cable connected to the matching receiver, 978 to 978, 1090 to 1090.

## Time to test the unit:

- Plug the battery into the unit, check for proper fan operation and air movement, watch for red and green leds, both should be on after a minute or two on first boot.
- **NOTE:** Because our build involves many units, only one unit may be powered up at a time and

reliably tested on a tablet, phone or laptop. If more than one unit is powered up we will not know which one you are connected to. However, based on LEDs on the unit we will have a good chance of knowing yours works okay before you leave. **Quote from the developer about group testing:** *“The newest software (v1.2r1) turns the green light on constantly on successful boot. If the green and the red light are both on constantly after 1-2 minutes on first boot (first boot always takes the longest), then there's a 99% chance that everything is fine. Other than that, there's no good way to know who is connected to which and that's always been a problem with big group builds. Going by the lights should be pretty reliable.”*

- On your tablet, phone or laptop check for “Stratux” wifi and connect.
- Open your tablet browser and enter <http://192.168.10.1>
- The Stratux website should come up. The website is built into the ADS-B unit via the software.
- Go to “settings” - make sure both 978 and 1090 are turned “on” (and optional GPS)
- Go to “status” and check for “connected” in green and some blue bar showing on the 1090ES and a small brown bar showing on the UAT.
- You can click “traffic” and will likely see some aircraft data show up.
- Open your flight management app like ForeFlight or Avare and look for traffic. Note: some settings may have to be adjusted on your app to show traffic. Weather will not show until you are in the plane at a higher altitude or in closer proximity to a 978 MHz ground transmitter.
- Avare requires the “Avare External I/O” app to operate properly, on wifi and 4000 setting.
- Go to Stratux “settings” page and “shutdown” - green led will turn off. Unplug battery. If you just unplug the battery before shutting down I believe that's okay too.

**Note:** stratux.me is the official website for this product which is “open source”. All parts we are using are as suggested for the Dual Band version by the developer on this website. You may choose to modify your kit via other parts that are available on the internet or as upgrades and modifications are made. That's the beauty of an “open source” product.

I would like to acknowledge the very responsive and invaluable help from the developer Chris Young that I received when I had questions while I put together this group build. Greg Long

### Supported EFB Platforms as of March 1, 2017 via stratux.me on the web

FlyQ EFB (Seattle Avionics) 2.1+ (iOS)	☐ All currently-supported features tested.
Naviator (Android)	☐ All currently-supported features tested.
AvNav 2.0.0+ (Android)	☐ All currently-supported features tested.
ForeFlight 7.x (iOS)	☐ All currently-supported features tested.

WingX (iOS only)	☐ All currently-supported features tested.
Avare EFB (Android)	☐ All currently-supported features tested.
FltPlan Go (Android, iOS, and Windows)	☐ All currently-supported features tested.
DroidEFB	☐ All currently-supported features tested.
AerovieReports	☐ All currently-supported features tested.
AvPlan EFB	☐ All currently-supported features tested.
iFly GPS 9.4+	☐ All currently-supported features tested.
DroidEFB 2.1.1+	☐ All currently-supported features tested.
OzRunways EFB 5.4.2+	☐ 1090 traffic only.

**Builders should bring with them a small needle nose pliers, small (#1) Phillips screwdriver if available (I will have a dozen or so of each), a 5/16” nut driver would be handy ( I will have two). I will have a few other items (dowels with sticky tape to hold small nuts) to help with the assembly as well. Testing will be the trickiest part since only one unit can be running at a time to guarantee that is the unit you are connected to. We will be able to tell by LEDs running on the units that they are likely working okay.**

*February meeting pictures*



*The Flying Cyclones® Club Presents...*

# Ames Fly-In

April 8th, 2017

7:00am-11:00am

Ames Municipal Airport

KAMW CTAF 122.7

Rain Date: April 15th, 2017

Pancake Breakfast

Pilot in Command: Free

Adults: \$6

12 & Under: \$5



Questions: [flying@iastate.edu](mailto:flying@iastate.edu)

More Info and Updates: [www.flying.stuorg.iastate.edu](http://www.flying.stuorg.iastate.edu)

# Iowa Department of Transportation

## Office of Aviation Calendar

### March 2017

Sunday, March 12

#### Spencer Municipal Airport (SPW)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.  
**Phone:** 563-650-0342 (Jenny Myren)  
**Email:** [iowa@ncs99s.org](mailto:iowa@ncs99s.org)  
**Website:** [iowa.ncs99s.org](http://iowa.ncs99s.org)

### April 2017

Saturday, April 1

#### Greenfield Municipal Airport (GFZ)

Iowa Aviation Museum  
Chili Fly-in  
11 a.m. - 2 p.m.  
**Phone:** 641-343-7184 (Greg Schildberg)  
**Email:** [aviation@iowatelecom.net](mailto:aviation@iowatelecom.net)  
**Website:** [flyingmuseum.com](http://flyingmuseum.com)

Saturday, April 8

#### Ames Municipal Airport (AMW)

Iowa State Flying Cyclones  
Fly-in breakfast  
7 a.m. - 11 a.m.  
**Phone:** 920-810-5347 (Jacob)  
**Email:** [flying@iastate.edu](mailto:flying@iastate.edu)  
**Website:** [www.flying.stuorg.iastate.edu](http://www.flying.stuorg.iastate.edu)

Tuesday, April 11 -  
Thursday, April 13

#### 2017 Iowa Public Airports Association Conference

Doubletree by Hilton (downtown)  
Cedar Rapids, IA  
**Email:** [sheath@iowaairports.org](mailto:sheath@iowaairports.org)  
**Website:** [www.iowaairports.org](http://www.iowaairports.org)

Sunday, April 16

#### Amana Airport (C11)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.  
**Phone:** 563-650-0342 (Jenny Myren)  
**Email:** [iowa@ncs99s.org](mailto:iowa@ncs99s.org)  
**Website:** [iowa.ncs99s.org](http://iowa.ncs99s.org)

### May 2017

Saturday, May 6

#### Boone Municipal Airport (BNW)

Fly-in breakfast  
Pilot in command eats free  
7 a.m. - 11 a.m.  
**Phone:** 515-432-1018  
**Email:** [defarnham@msn.com](mailto:defarnham@msn.com)

Sunday, May 21

#### Chariton Municipal Airport (CNC)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.  
**Phone:** 563-650-0342 (Jenny Myren)  
**Email:** [iowa@ncs99s.org](mailto:iowa@ncs99s.org)  
**Website:** [iowa.ncs99s.org](http://iowa.ncs99s.org)

### June 2017

Sunday, June 11

#### Red Oak Municipal Airport (RDK)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.  
**Phone:** 563-650-0342 (Jenny Myren)  
**Email:** [iowa@ncs99s.org](mailto:iowa@ncs99s.org)  
**Website:** [iowa.ncs99s.org](http://iowa.ncs99s.org)

Wednesday, June 26 -  
Friday, July 28

#### Clinton Municipal Airport (KCWI)

Cessna 150-152 Fly-in  
**Phone:** 301-275-2476 (Mark Buchner)  
**Email:** [cessna150flyin@gmail.com](mailto:cessna150flyin@gmail.com)  
**Website:** [www.cessna150152flyin.org](http://www.cessna150152flyin.org)

### July 2017

Monday, July 24 - Sunday,  
July 30

#### EAA AirVenture

Oshkosh, WI  
**Phone:** 920-426-4800  
**Email:** [communications@eaa.org](mailto:communications@eaa.org)  
**Website:** [www.airventure.org](http://www.airventure.org)

Friday, July 28 - Saturday,  
August 5

#### National Balloon Classic

Indianola National Balloon Classic Field  
**Phone:** 515-961-8415  
**Email:** [becky@nationalballoonclassic.com](mailto:becky@nationalballoonclassic.com)  
**Website:** [www.nationalballoonclassic.com](http://www.nationalballoonclassic.com)

### August 2017

Sunday, August 6

#### Monticello Municipal Airport (KMXO)

Fly-in breakfast  
7 a.m. - 12:30 p.m.  
Pilot in command eats free  
**Phone:** 319-465-5488 (Teresa)

Saturday, August 19

#### Abel Island Airpark, Guttenberg (IA23)

Abel Island Fly-in, float-in, potluck, & BBQ  
Noon - 3 p.m.  
2,600 ft turf strip / Mississippi River for seaplanes  
**Phone:** 319-480-0913 (Gary Fisher)  
**Email:** [FlyinEyeDr@aol.com](mailto:FlyinEyeDr@aol.com)  
**Website:** [www.abelisland.com](http://www.abelisland.com)

Sunday, August 20

#### Galesburg, IL Municipal Airport (GBG)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.  
**Phone:** 563-650-0342 (Jenny Myren)  
**Email:** [iowa@ncs99s.org](mailto:iowa@ncs99s.org)  
**Website:** [iowa.ncs99s.org](http://iowa.ncs99s.org)  
Abel Island Fly-in, float-in, potluck, & BBQ  
**Phone:** 515-964-1398 (Chuck McDonald)  
**Website:** [www.flyiowa.org](http://www.flyiowa.org)

Sunday, August 27

#### Fremont, NE Municipal Airport (FET)

Fly-in breakfast  
7 a.m. - 1 p.m.  
**Phone:** 402-727-2610 (Brian Newton)  
**Email:** [newt@bright.net](mailto:newt@bright.net)  
**Website:** [www.rotaryfremont.org](http://www.rotaryfremont.org)

Monday, August 28 -  
Wednesday, August 30

#### 4 States Airport Conference

Kansas City Marriott Downtown  
Kansas City, Missouri  
**Website:** [www.4statesairportconference.com](http://www.4statesairportconference.com)

# Iowa Department of Transportation Office of Aviation Calendar

## Continued

### September 2017

Sunday, September 17

#### Le Mars Municipal Airport (LRJ)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.

Phone: 563-650-0342 (Jenny Myren)

Email: [iowa@ncs99s.org](mailto:iowa@ncs99s.org)

Website: [iowa.ncs99s.org](http://iowa.ncs99s.org)

### October 2017

Sunday, October 15

#### Fort Dodge Regional Airport (FOD)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.

Phone: 563-650-0342 (Jenny Myren)

Email: [iowa@ncs99s.org](mailto:iowa@ncs99s.org)

Website: [iowa.ncs99s.org](http://iowa.ncs99s.org)

### November 2017

Sunday, November 19

#### Muscatine Municipal Airport (MUT)

Iowa 99's monthly meeting  
11 a.m. - 3 p.m.

Phone: 563-650-0342 (Jenny Myren)

Email: [iowa@ncs99s.org](mailto:iowa@ncs99s.org)

Website: [iowa.ncs99s.org](http://iowa.ncs99s.org)

## Scales Rental Info

All scale rentals require check for \$200.deposit (Will be returned, uncashed, upon timely scale return).

Three day rentals. May be extended for thee additional days at no charge, if there are no other conflicting requests for their use, with notification by phone. Otherwise late fee of \$100 per day applies.

Chapter 135 members (must be member 3 months prior to rental date.) ..\$25.00 for 3 days

National EAA member but not Chapter 135 member .....\$75.00 for 3 days

A&P or FBO rate .....\$125.00 for 3 days

Copy of rental agreement available by fax or email by calling Craig Martin at 515250-3124 or email to [cmartindsm@gmail.com](mailto:cmartindsm@gmail.com)

Scales are kept at Wisecup Willow Aviation (Craig Martin) Nash Field, Indianola.

## Membership Dues

Name \_\_\_\_\_

EAA No. \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Phone \_\_\_\_\_

e-mail \_\_\_\_\_

Dues are \$20.00 per year

Dues are due July 1 and run through June 30.

(After January 1st you may pay \$30.00 for 1½ years)

**LIFETIME MEMBERSHIP DUES ARE \$200.00**

You must be a member of the National EAA.

You may mail your dues to our treasurer:

Dave Kalwishky

4224 Grandview Ave.

Des Moines, IA 50317



## EAA Chapter 135

Marc Broer  
6292 N.E. 14th Street  
Des Moines, IA 50313  
marc@countylinesprinting.com

## 2017 Chapter 135 Officers and Board Members

### Officers:

President .....Ralph Briggs ..... 515-554-8187 .....rbriggs55@gmail.com  
Vice President.....Vacant  
Secretary .....Vacant  
Treasurer .....Dave Kalwishky..... 515-266-4001 ..... dave@kalwishky.com  
Newsletter Coordinator.....Marc Broer ..... 515-289-2625 .....marc@countylinesprinting.com  
Young Eagles Coordinator .....Alan Core ..... 515-961-4524 ..... indypurr@juno.com

### EAA Chapter 135 Board Members

Craig Martin.....515-250-3124..... cmartindsm@gmail.com  
Mike Graber.....515-993-3421..... mgraber914@msn.com  
Paul Reinke.....515-367-2105..... preinke@energycontroltechnologies.com  
Alan Hummel.....515-783-9092..... hummel7304@gmail.com  
Paul Steingrabe .....515-265-1317..... casdogs@q.com