

# YALE AVIATION NEWSLETTER



February 2015

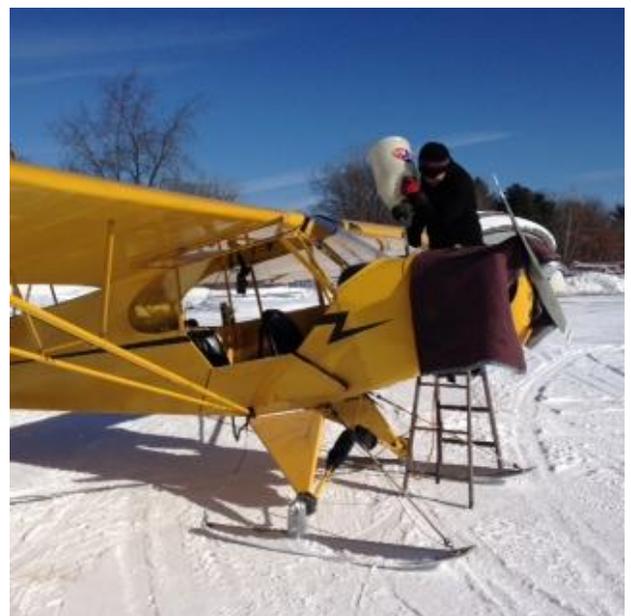
## UPCOMING EVENTS –

- **Cloud Crowd** – Our next meeting will be Saturday, Feb 28, 4 pm, at Robinson. Anxious to fly more challenging missions as an instrument-rated pilot? Looking for a safety pilot to help with approach practice?? Associate member **Ian Green, CFII**, has graciously offered to answer questions and lead discussions. Contact **Laura Baldwin** ([lfbaldwin@aol.com](mailto:lfbaldwin@aol.com)) if you are interested in joining the group.
- **New England Safety Expo** – Saturday, March 28, 2015 at Daniel Webster College, Nashua, NH. [http://www.faa.gov/news/conferences\\_events/aviation\\_expo/](http://www.faa.gov/news/conferences_events/aviation_expo/)

## PILOTS...

**Dave Pecoraro** has been a CFI working with Yale Aviation students for some time. He is available after 4:30 pm or on weekends, and is rated to teach primary, instrument, and commercial students. You can contact him on his cell phone at 203-314-7523 or email him at [davidpecoraro@hotmail.com](mailto:davidpecoraro@hotmail.com) .

**Charlie Skelton** has been out flying in the snow up at Twin Lakes in Canaan, Connecticut:



Last year the club raised more than 23K, some of it from the donation of unflown hours. Those of you who've accumulated more hours than you might likely fly please consider donating to the club – it is tax deductible!!  
**Help keep Yale Aviation alive in the future as it was for you!**

## ... & PLANES

### **WINTER FLYING:**

Winter is here! Frost, snow, ice and freezing rain. When you schedule the aircraft, more than likely it will need to be deiced (frost or freezing rain) and pre-heated.

**Pre-heating is a must when temperatures are below 20 degrees.** Pre-heating and light de-icing take place outside, however, frequently the de-icing requires the hangar for a meltdown. Even when the aircraft is hangared for de-icing it still needs to be preheated. Robinson has been reasonable about the charges for this service so if your schedule changes call and cancel – their resources are stressed. If in doubt about preheating, ask the person at the Robinson front desk if the flight school's planes are being pre-heated (AFA preheats anytime the temp falls below 40F, fyi).

Winter flying is indeed something else. Our types of aircraft were not designed to traverse the snow covered, iced-over ground so take caution: you are in a new environment (it is not a four wheel-drive!). Some very simple things: the Piper step is a small piece of cold metal, dark in color; it can be iced over even from previously stepping on it during preflight. The black walkway can be black ice. Stepping down from the wing onto ice can be dangerous. *Be sure not to be the next uncontrolled human flight!*

**32028** has had an oil change and been lucky to spend many of the past few snowstorms in the hangar. It will be our only aircraft available until April.

Remember, **Charlie Skelton** often will book large amounts of time for students during the week, but he is ALWAYS willing to accommodate members who want to fly for a couple of hours – just call him at 203-640-3580. Signing up as “standby” may be a good way to ensure that you can use the airplane even if it might be taken on the day you want – your standby reservation will ONLY appear once the previous reservation is canceled, so be sure to check often if you have set up a standby situation. Canceling reservations when plans change will also be of the utmost importance to be sure that this asset is utilized efficiently.



For those who have not flown 028 in a while, our chief maintenance officer, **Charlie Skelton**, wants to point out a few things:

1. Unlike 044, the starter on 028 has to be *pushed in* to engage properly. Please don't forget this.
2. There are two cracks (that have been drilled out to prevent further cracking), one on the spinner and one on the rudder. We know about these and are watching them, so no need to be concerned.

**55044** has gotten a new rudder, due to a crack noticed in the old one while being painted. Estimated time of delivery of the improved 044 is April 1!

**"Hartford IMC Club Monthly Meeting @KMMK"**

Topic: Mastering The Art Of Instrument Navigation & Instrument Training Scenario Discussion

On Tuesday, February 24, 2015 at 18:00

Location:

Meriden Airport

213 Evansville Ave

Meeting Room, Airport Terminal

Meriden, CT 06450

**Select Number:**

EA6360118

**Description:**

February meeting of IMC Club, Hartford chapter. Another new Instrument flying scenario to presented and discussed. Through its nationwide chapters, IMC Club provides organized "hangar flying" focused on building proficiency in instrument flying believing that safety and proficiency are developed through education and experience. Monthly meetings use real world scenarios at each meeting to engage our members and allow them

to share and build their experience. You do not have to be instrument rated to attend. Following the presentation we will conclude with the question; "What would you Do?". Refreshments will be served. Click the link below and register TODAY !

To view further details and registration information for this seminar, [click here](#).

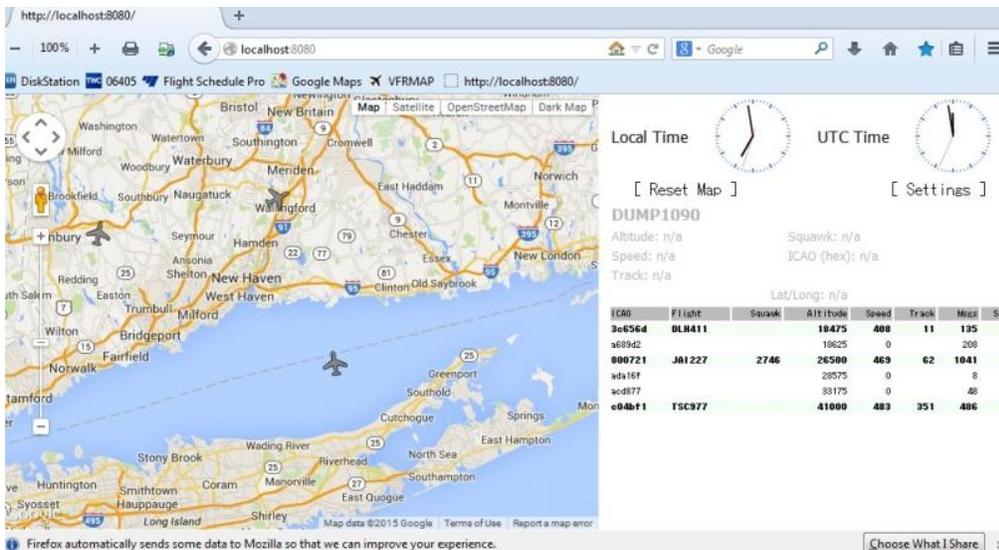
The sponsor for this seminar is: **FAA Safety Team, EA-63 FSDO.**

**PODCASTS & APPS & GADGETS–** Please send me your favorite app, tech toy, video or podcast suggestion to share!

The FAA has just put out an interactive version of the **Pilot's Handbook of Aeronautical Knowledge** and **The Instrument Flying Handbook** available in iBooks for \$5.99 & \$9.99 respectively. A video (made in 1958!) on page 94 on "How Planes Fly" is worth the price!!

**Rod Machado's Aviation Learning Center** app is available for free on iOS and Android devices. It connects people to Rod's website, products, Facebook, etc, but also includes links to some very interesting short educational videos.

**Tracking airplanes for \$20!** By Rajkumar Veliyath-Janardanan



A couple of weeks ago **Akihiro Hashimoto** and I set up a Mode-C/ADS-B based aircraft tracking system on Akihiro's laptop. The entire set-up cost Akihiro \$20 (plus the old laptop he had lying around). The following image shows

what the sky around New Haven looks like based on radar information.

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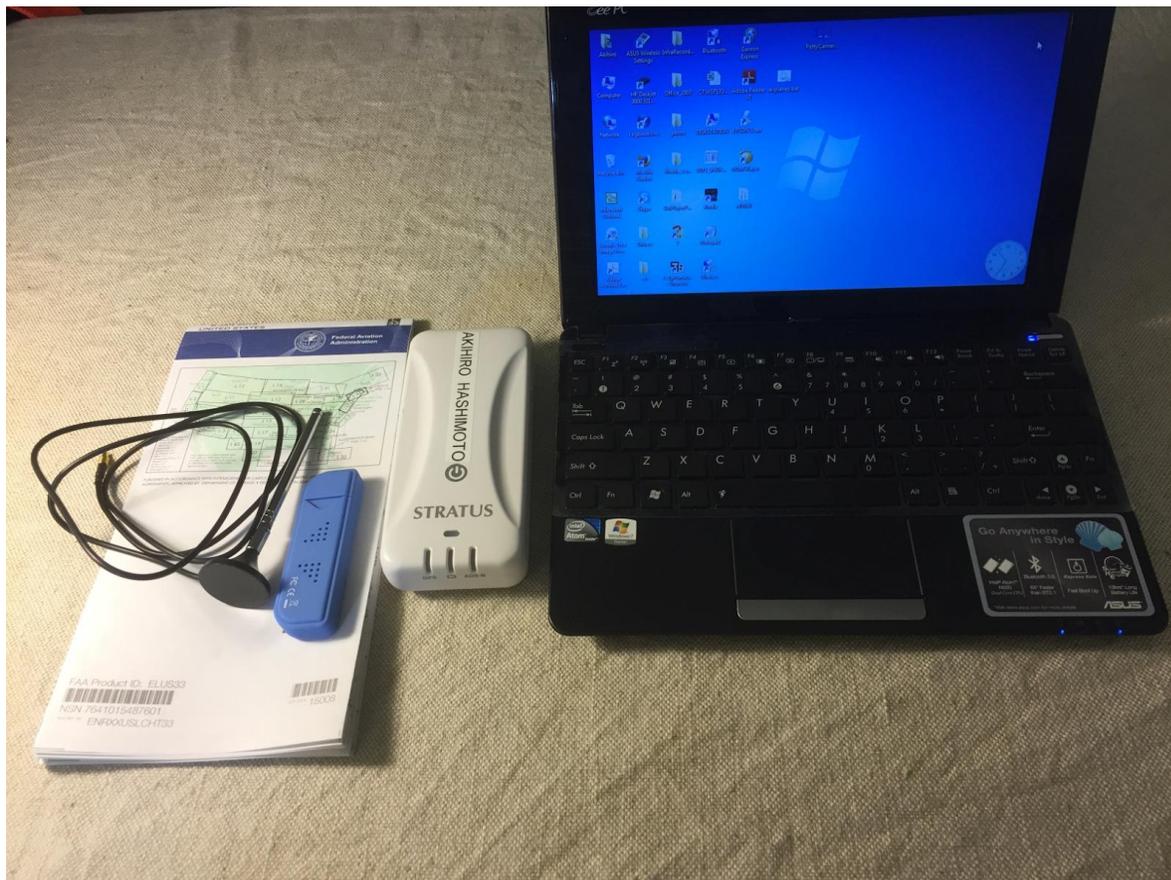
## Background:

Aircraft in the sky have been tracked from WW-2 using ground radars - the radar sends a directional signal, the aircraft responds with the altitude and the radar can then pinpoint the aircraft (or in the times of war, if there is no response, shoot it down). The recent innovation has been ADS-B, in which aircraft determines its location from GPS and broadcasts it periodically, enabling other aircrafts to avoid it. Note that ADS-B is not yet mandatory in the US, while it is the case in Europe.

All of this communication happens over radio signals, enabling anyone with suitable equipment to track the aircraft; no radar needed. Commercial products like Stratus allow tracking of ADS-B transponder equipped aircraft, while Zaon tries to triangulate position of aircraft with only an altitude indicator (Moce C, WW2 technology).

Recently a bunch of programmers figured out that a European spec digital tv receiver can be used as a general purpose radio receiver allowing everything from receiving FM radio to tracking ships and airplanes. This started in the linux programming community (Linux is a free operating system developed collaboratively) so most software works best in Linux, but in very near past, the software has become available on windows too.

In the following picture the Digital Dongle (TV receiver) is on the left, the Akihiro's Stratus is in the middle and his laptop on the right.



## Setup:

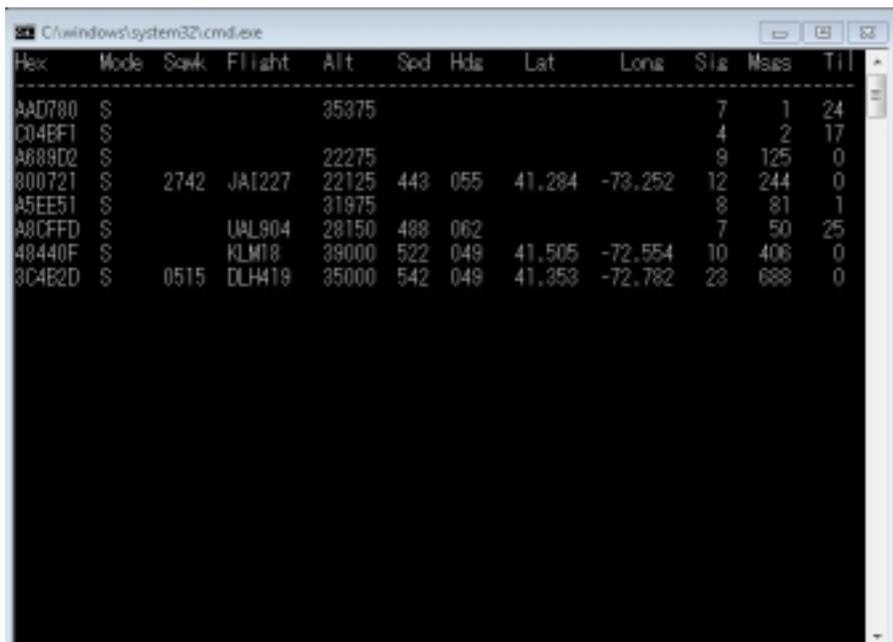
You really need two things to track airplanes, a computer with a USB port and a digital TV receiver. Akihiro purchased his digital tv receiver dongle on ebay for \$20. I and Akihiro used a vendor called [nooelec](#) mostly because they were US based. Chinese sellers will sell you one for about \$10 or so, but shipping and quality may vary. Akihiro used a windows based laptop, while I used Linux. This article will describe the Windows based set-up.

The software we will use is called dump1090. An almost equally good software to track airplanes is called rtl1090. We will install both. This is because while dump1090 is a better program to use, rtl1090 has a great installer which sets up all the drivers and connections for you. First, go to [rtl1090.web99.de](http://rtl1090.web99.de) and download the RTL1090 installer. Then install it in a folder that is easily accessible (we used the desktop on Akihiro's laptop). Then follow the instructions from [here](#) and install dump1090 into the same folder. This way all the drivers and program components are available to the dump1090 program.

## Running dump1090:

Once you have the software installed, plug the digital TV receiver dongle in and we are ready to go.

dump1090, true to its Linux roots, is best run from a "command prompt", i.e. it best runs in text mode. From the start menu, run "cmd" to bring up the command prompt. Change directory to the folder you installed dump1090 (`cd` command changes into different folders, for example: `cd C:\Dump1090\`). Once you are in the required folder, type the command "dump1090 --interactive --net". It should immediately bring up something that looks like below:



```
C:\windows\system32\cmd.exe
Hex      Mode  Squawk  Flight  Alt   Spd  Hdg   Lat    Long  Sig  Msls  Tll
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AAD780  S          35375
C04BF1  S          4      2    17
A688D2  S          22275
800721  S    2742  JAI227  22125  443  055  41.284 -73.252  12  244  0
A5EE51  S          31875
A8CFFD  S          UAL904  28150  488  062
48440F  S          KLM18  39000  522  049  41.505 -72.554  10  406  0
3C4E2D  S    0515  DLH419  35000  542  049  41.353 -72.782  23  688  0
```

You can also launch a browser and navigate to <http://127.0.0.1:8080> or to <http://localhost:8080> (they both are the same thing) to see a graphical view of the airplanes.

## What is this good for?

The most obvious use is to track airplanes - a pretty [large community](#) of people do just that. Less common is the use of this data for in-air collision avoidance. Pretty much every airport has a radar which constantly pings aircraft and requires them to respond. Since we often fly our GA aircrafts close to

airports, we almost always are within eavesdropping distance of the replies from the aircrafts. Since we also know our altitude, it is quite easy to look out for aircrafts that are at our same altitude. Additionally, dump1090 also provides a "signal strength", a number that varies from 0-255 depending on how strong the signal is. So a high signal strength and same altitude is an aircraft that a pilot wants to look out for. A big advantage of this system is that one does not need a subscription or a mobile phone connection to receive signals - all one needs is a laptop with an antenna. Another clever trick many users have figured out is using an iPad, but that is more complicated to explain.

Additionally, since the dtv Dongle works as a general purpose radio, it can decode ground and air traffic control, weather transmissions and a multitude of other data (google for rtl\_fm,rtl\_sdr etc.).

**[Those interested in help with setting up a system such as the one explained above should contact Raj via the Yale Aviation Secretary at [yaleaviationsecretary@gmail.com](mailto:yaleaviationsecretary@gmail.com) ]**



#### TWEED NEWS -

**American Flight Academy** has moved to renovated space in Hangar 2, entered from the parking lot side. Their entrance is shown to the left.

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**TSA Badges** – Need a new badge?? Remember that for the procedure you must have a completed application signed by our TSA signatory, **Laura Baldwin** (203-966-8499, [lfbaldwin@aol.com](mailto:lfbaldwin@aol.com) ). Once that is done, you call KATHY GRANT (203-466-8833 ext 109) over at WEST ramp to make an appointment to take training, pay your fee (cash or check) and have your new badge issued.

#### ONLINE -



**YA MERCHANDISE!** Check out our two online "storefronts" for purchasing YA-logoed merchandise! One is located at Customized Girl (<http://www.customizedgirl.com/s/yaleaviationmerch>) and one at Zazzle (<http://www.zazzle.com/yaleaviationstore>). What you order from these locations will be delivered directly to you, PLUS a portion of the sales will come back to the club.

Contact Laura Baldwin ([lfbaldwin@aol.com](mailto:lfbaldwin@aol.com) ) if you have any questions or have ideas for additional merchandise!

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**Yale Aviation** is on Facebook - be sure to post photos, ask questions of fellow pilots, encourage those who are working their way through ratings and exams, or see if you can organize a passenger on your next flight. We have opened this group so that your friends (and prospective members?) can see what we are all about.

Remember pictures can also be posted on our Yale Aviation website at [www.YaleAviation.org](http://www.YaleAviation.org).

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We're taking part in **Sporty's Flying Club Rebate Program** which means we will receive cash back for our club on all your purchases from Sporty's. Every time you make a regular purchase at Sporty's – either online, at 800.SPORTYS, or in their store – we will receive a 5% cash rebate, using your email to link these purchases to our club.



Of course, this program is a great way for Sporty's to steer business their way, but we have an opportunity to also reap the benefit. With your participation, this will be a win-win for all of us. Go to [sportys.com](http://sportys.com) or call 800-SPORTYS – no special code needed.

**If you have a friend or family member who buys presents for you, be sure to let me know so I can get them added to our club list. Anyone who is NOT on that list will not get us our rebate, even if they are buying for someone on the list!!**

## YALE AVIATION HISTORY -



**THIS IS A MULTI-PART SERIES ON YALE AVIATION HISTORY IN HONOR OF OUR 50<sup>TH</sup> ANNIVERSARY. THE EDITOR IS GRATEFUL TO HANK GALPIN FOR HIS WILLINGNESS TO DO THIS!**

### Yale Aviation History – Chapter Ten:

In the winter of 1966-67 (I didn't record the exact date)  
Howard Weaver

was flying the university's Cessna 336 and crashed it short of the runway at New Haven when both engines quit due to ice in the fuel system. The stories in the New Haven Register are pretty comprehensive, so I



**HOWARD WEAVER**, assistant to the President for external affairs, escaped injury when this University plane he was flying crashed in East Haven last night.

### WEAVER UNHURT

## Yale Plane Crashes

Howard S. Weaver, President Brewster's assistant for external affairs, walked away unharmed after a University-owned plane he was flying crashed in East Haven last night.

Weaver, a licensed pilot, had flown his son George, to Lawrence, Mass., and was returning to New Haven when the crash took place. He had returned the youth to Phillips Andover Academy.

Tweed-New Haven airport dispatcher James Pollio said Weaver radioed about 6:30 that his engines were sputtering. A moment later Weaver said both engines had failed, according to Pollio.

Pollio cleared three other planes from the airport, hoping Weaver could nurse the plane in. But the aircraft crashed a minute before it would have reached the airport, Pollio said.

The plane sheared off a wheel on the edge of a six-foot ditch, narrowly avoided

a hill and a rail fence and skidded to a halt some 40 feet beyond the ditch into the front yard of Leon Amandola's at 2 Meadows Place, Amandola reported.

"These planes are always flying too low. This isn't the first time they've messed up my property. But what can you do? They'd say I'm crazy if I complained," said Amandola.

Henry M. Galpin, 1967, president of Yale Aviation, said the plane was worth \$20,000. It was given to the University in November by Thomas J. Watson Jr., chairman of the board of International Business Machines, he said.

Galpin said the plane, a "centerline thrust" or "push-me-pull-you" model, was seldom used. Galpin said he had seen President Brewster use the craft once, however.

The plane was built in late 1964, Galpin said.

## Ice-Clogged Fuel Lines Caused Plane Crash

Freeze-ups in both fuel lines of the University's twin-engine Cessna Sky-master forced his emergency landing Sunday evening, Howard S. Weaver explained yesterday.

Weaver, President Brewster's assistant for external affairs, said investigators and mechanics discovered the ice-clogged fuel lines in the remarkably intact plane yesterday afternoon. Federal and state aviation agencies are continuing their investigation, and no formal estimate of the damage has been made, he said.

"There hasn't been too much usage of the plane. I sort of supervise the thing, and periodically — once every week or ten days — I put a little usage into it, to keep it in good shape; that's one of the things I was doing Sunday night," Weaver said.

Norwood R. Hanson, Yale's well-known flying philosopher, commented on the crash last night. "The way he handled that machine was remarkable. He didn't



**HOWARD S. WEAVER**

*Close Call*

hurt anything but a picket fence; this chap really knew what he was doing. If (failure of one engine) happens to everyone sometime, I suppose. But it's a bit awkward when it happens to two engines at once."

WATER IN THE FUEL mixture, according to Hanson, is not unusual. But he added, "Cold weather transforms a normal situation into a tragedy." Both Hanson and Weaver drew a distinction between icing in the carburetor which the pilot can prevent, and icing in the fuel line which he cannot control.

don't have to add anything here. Mr. Weaver obviously did a great job flying it to the ground. I have always felt that if a light plane is under control and at minimum airspeed you will very likely survive a forced landing. I spent one summer flying fire patrol in a 182 over the Bob Marshall Wilderness in Montana. I had dozens of spots picked out where I thought I could put the plane down and walk away. Of course the plane would have to be slung out by a helicopter and delivered to the recycler. I have owned almost 20 aircraft over the years, and I know some folks name their planes and get emotionally attached to them. I don't. Planes are expendable.

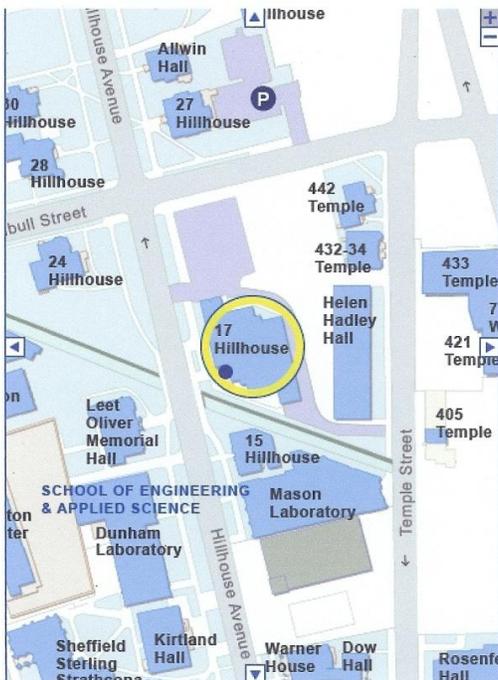
I had an incident similar to Mr. Weaver's in October 1976 when I was happily flying westbound in a Turbo 210 over North Dakota. I had just cleared an undercast when the engine quit cold, but kept windmilling. I fiddled with a few things, but Minot was right under me, so I concentrated on the deadstick landing, which was successful. We towed the plane to the maintenance hangar, found nothing wrong with it, and a couple of hours later continued the flight.



Very incidentally, Warren and Kent Pietsch have an FBO at Minot and fly airshows all over the U.S. Kent has "Jelly Belly" Interstates on both ends of the country and flies a heavy schedule. I have seen all the jet teams and most of the well-known acts, but Kent is far and away the best aviator of the bunch. The precision of his deadstick performance is awesome! Don't miss it! [ed note: see uTube video of his show here <https://www.youtube.com/watch?v=yGrpxKThab8> ]

Coming next month: Professor Hanson crashes his F8F Bearcat

## SIMULATOR -



The simulator is **currently located in room 211** at 17 Hillhouse Ave., across and down the street from Dunham Lab. Once you enter, take the elevator to 2<sup>nd</sup> floor. Turn left coming off the elevator.

Anyone needing simulator access should e-mail **Ty Kamp** ([tahia.kamp@yale.edu](mailto:tahia.kamp@yale.edu)) the alpha-numeric code on the back of their Yale IDs. Those without Yale IDs need to enter with Charlie, who can arrange access.

Thanks to **Josh Parsons**, Jay LeBoff of HotChasis.com is in the process of updating and improving our set-up, just in time for the horrible weather of winter!!!

The Yale Aviation Newsletter goes out to the membership on the 15<sup>th</sup> of every month. Please let me know if you have any news, suggestions, or comments:

[YASecretary@aol.com](mailto:YASecretary@aol.com)

Laura Baldwin, Secretary