

The Lippisch Letter



Experimental Aircraft Association Chapter 33

April 2001

The Lippisch Letter

is the monthly publication of the Dr. Alexander M. Lippisch Chapter (33) of the Experimental Aircraft Association, Cedar Rapids, Iowa.

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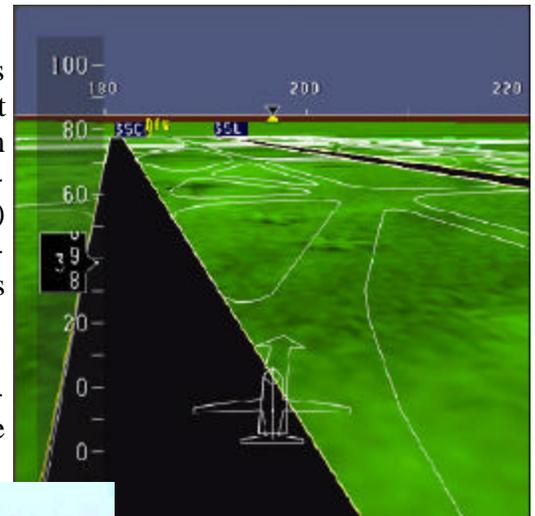
Highway in the Sky

By David Koelzer

One of aviation's early pioneers of flight instrumentation is Lawrence Sperry. He is credited with inventing the Turn & Bank Indicator, one of the basic instruments that is in most all aircraft today. Sperry was also the inventor of such safety items as the seat pack parachute and a three-axis gyro flight stabilizer. Despite Sperry's inventions he was not immune to the dangers of aviation. While instructing a wealthy socialite lady, Sperry's Curtiss flying boat crashed into a Long Island swamp. Fortunately, two near by duck hunters were able rescue the couple who, to the hunters amazement, were completely naked. Ledged credits Sperry with another aviation first; founding member of the Mile High Club. Since necessity is the mother of invention, it is not surprising that Sperry would go on working to perfect the autopilot.

May things have changed since Sperry's day but many still quest to increase flight safety and to reduce the workload on "busy" pilots. One such quest is the Synthetic Vision Information System (SVIS) developed right here in Iowa by Rockwell Collins and one such questor is Chapter 33 member Tim Etherington.

Tim and the SVIS team have been working with NASA, Boeing, Embry-Riddle



Aeronautical University, Jeppesen, American Airlines, the FAA, AGATE and others to redefine how we will aviate, navigate and communicate into the 21st century. SVIS strives to blend the latest computer and video technology with human factor designs to help us get quickly and safely to our destinations.

Red Miner, Cedar Rapids Aviation Pioneer

By Todd Millard

On March 3, Cedar Rapids lost one of its aviation pioneers and Chapter 33 lost a founding member. Leo "Red" Miner, died at the age of 88 after a long battle with an illness and failing health.

Red was born in Cedar Rapids in 1913. As a kid, like many of us, all he could think about was flying. One day when he was 7 years old, he saw his first airplane fly overhead. He and his dad followed the airplane to a local airport to watch it land. From that day on, Red's mind was made up, he wanted to be a pilot.

At the age of 16, he mowed lawns and washed planes at the old Des Moines airport to save enough money to fly. The first day, one of the pilots sent him over to the next hangar to get a pail of propwash. Finally the owner broke down and gave him his first plane ride in a Travel Air 4000.

In 1932, Red graduated from Grant High School in Cedar Rapids and went to work for Merchants Delivery. He delivered goods for 87 grocery stores. He made \$10 a week. A few years later in 1936, Ward Baking Co. offered him a job to deliver pastries and bread to grocery stores in Iowa City, Cedar Rapids, and Waterloo. He spent 2 days a week in each market. Now that he was making \$22 a week, he began to think seriously about flying.

The Waterloo market was new, so Red was able to spare some time on the days he was there. One day while driving by Canfield Airport between Waterloo and Cedar Falls, he spotted a sign that offered the first flying lesson for free. Red decided to take them up on their offer. After bragging that he knew everything about airplanes, the instructor took Red up several thousand feet and said "All yours". After several minutes of wild gyrations that nearly scared Red to death, the instructor had made his point. You never will learn all there is to know about flying, so you had better always be a student. Red never forgot the lesson and despite his thousands of hours of flying, he was always a student of aviation.

Red spent every spare dime on flying and soon got his commercial license and instructors certificate. In 1938 he bought a 1937 Taylorcraft to instruct in. It was a very basic plane, no brakes, no tailwheel, single ignition, one door, no radios, as sparse as you could get it. Empty weight was only 480 lbs. He made \$1 per hour instructing.

In 1941, Red was running the airport in Clarion. On December 7th of that year, he was giving a student a lesson, when they came back in the whole place was full of people. The United States was at war. Soon every airport had to have an armed guard 24 hours a day, seven days a week. Red couldn't afford to hire someone to guard the airport, so he got deputized, got a cot, and lived at the airport.

Red wanted to do his part to help the war effort so he got a job instructing Air Corps Cadets. Over the next 3 years, Red taught 15 classes of 5 cadets to fly. During that time he only washed out 2 cadets, a testament to his abilities as a teacher.

Keith Williams shared a story about those days.

I remember him telling me that at the first session, the class and the instructor went out and sat around an airplane and just chatted and tried to get to know each other. All classes did the same thing. At the plane next to Red's, the instructor went into great detail about getting sick during flight and what to do about it.



Red as a proud young pilot after his first solo.

(Continued on page 3)

(Continued from page 2)

Of course some of Red's student, those seated near the edge, couldn't help but overhear the "s" word. Finally one of them would ask about getting sick. Red's answer: "You ain't gonna get sick." and went right on with whatever he was discussing before the question as if it had not been asked. Red continued, "You know, no one in my classes ever got sick!"

Ah, the power of suggestion. And Red understood it! The other instructor didn't and had to supervise lots of airplane clean ups!

In 1944 the military started winding down the flight schools, so Red enlisted and was assigned to fly transport aircraft. After 5 weeks of instrument training and 5 weeks of multi-engine transition training, on April 15th, 1944 Red graduated and was off to India.

Soon Red was flying C-46s over the India – Burma – China hump delivering cargo and troops. Keith Williams had another story to share.

While transporting Chinese soldiers, the soldiers discovered, and found it to be great fun to all crowd up against the forward bulkhead and stay there until the pilots got it all trimmed up, then they would all run to the back of the plane.

The pilots soon figured out that when they climbed to some altitude (I seem to remember 11 or 12,000 feet) the soldiers would all pass out. Problem solved.

Then Red added, "We had to climb to 14,000 before the mules we carried would pass out!"

In central China, they flew off a strip that was at 6800 ft MSL. The runway was 15,000 ft long with 500 ft of crushed rock on both ends for overrun. With heavy loads they could hear the wheels on the crushed rock before they finally got airborne.

Later he flew C-47s from Shanghai to Taiwan. They would fly to Taiwan in the morning and then back in the afternoon. On the return flight one afternoon when they were 35-40 minutes out of Shanghai, the controller called on the radio and told them to turn around as the airport at Shanghai was all fogged in. Unfortunately back in Taiwan after the plane left they turned off the radio and shut down the airport. With no radio to navigate by and the weather getting worse, Red let down to 300 ft but still couldn't find the island. Running out of gas and daylight he decided it was time to ditch. After throwing out everything they could, Red did a perfect flaps down / gear up landing on the water. Of the 18 people on board, only the copilot was injured. The copilot apparently hit his arm on the center console and suffered a compound fracture of the upper arm. The copilot's bone was sticking out through his leather flight jacket. The crew lashed three life rafts together and Red lifted the copilot out through the navigation hatch in the cockpit.

Once everyone was settled into the rafts, Red decided that he had to do something to help the copilot, as he was in great pain. Red gave him a shot of morphine, put his foot under the copilot's arm, pulled as hard as he could and then slowly let the bone set back in. After they were rescued the next day, the doctor didn't even have to reset the arm. Red received the Air Medal for his efforts.

Red returned home shortly after that and returned to flight instruction at Hunter Field. He also opened a hobby shop on Third Ave. SW across from People's Bank. Red loved to build model airplanes, sell model railroads, and chat with customers. In the 1950's Red was introduced to Alexander Lippisch and went to work on his projects at Collins. Here is an excerpt from a Gazette story in 1994.

One of Red's frequent visitors was Art Collins, found of Collins Radio Co. They had met before the war at the Aviation Country Club – a strip out across the road from the present duck pond at the Rockwell-Collins complex.

(Continued on page 4)

(Continued from page 3)

One day in 1952, Art brought another man into Red's shop. Alexander Lippisch, a German-born aerodynamic engineer who designed the delta-wing shape of the rocket-powered Me-163 unveiled during the war, was looking for someone to help him build models of future designs.

"No thanks," Red said. "I'll just stay here. I like what I'm doing here."

But within a week, Lippisch had his way. Red was building models for him, so they could be launched with rubber bands and photographed at high speed.

When the Korean War came along, Red had problems buying engines for his models. In financial straits, he agreed to go to work for Lippisch in association with the Aeronautical Research Laboratory at Collins Radio Co.

The experimental aircraft they worked on were phenomenal, Red says. "It was terrific. It was really terrific. I learned more from Lippisch than anybody that I ever knew."

In the 1960's Red, along with Marv Hoppenworth, John Wall and others, founded EAA Chapter 33 and named it the Dr. Lippisch Chapter in honor of the great engineer. Red also built his own single engine biplane.

After nearly four decades and 14,112 hours of flight, Red stopped flying in 1970. He continued to be active in the Chapter until the early 1990's. Last year the Chapter honored Red for his achievements and contributions by making him an Honorary Lifetime Member in Chapter 33.

Red will be missed.



Red with mementoes of over four decades of flying.

Last Meeting

By Tom Olson

The last meeting was held at the Hills Bank and Trust in North Liberty. Marv Hoppenworth our senior technical advisor gave us a refresher on use and application of aircraft control cables and swaged fittings. I was impressed by his ease of cutting that nasty cable with a chisel. I hadn't tried that before and it is nasty to stuff cut any other way. Marv also showed us a unique swaging tool he built to replicate work that had been done in the Piper



factory for an EAA restoration project. A few members that were in the middle of projects that require swaged fittings got the chance to try it out first hand under the tutelage of Marv. Thanks for the excellent presentation Marv. Thanks also go to Hills Bank and Trust for the use of their fine meeting facilities.

Next Meeting

By Tom Olson

Please mark the evening of Saturday March 31 on your calendar. This will be the date of our Ladies night out and will take the place of the April meeting. The date is being moved up one week to eliminate conflict with the weekend before and after the Sun & Fun fly-in which takes place from April 8 to the 14'th at Lakeland Florida.

The Banquet will be held at the OxYoke Inn located at Main Amana. There will be a cash bar from 6:00 to 6:30. The meal will cost \$ 16 per person at the door, and you must RSVP by Monday Evening March 26. Please call Tom Olson at to call 319-393-5531 or Greg Zimmerman at 319-338-6921 to RSVP, We both have an answering machine and you can leave a message if we are not home.

The family style meal will feature 3 main entrees with vegetables, potatoes, cottage cheese, sauerkraut, desert, and coffee, tea, or Milk.

After the meal, our very own Tim Etherington from Rockwell Collins will provide an interesting presentation of recent developments in Synthetic Vision and the Highway in the Sky concepts being developed at Rockwell. This project is being performed in conjunction with NASA, a wide assortment other companies, and the FAA. The overall goal of this program is to enhance safety while greatly simplifying the process of pilot training and operation of general aviation aircraft in instrument meteorological conditions. This is something you will want to see.

Project Profile

By Todd Millard

Jack Rezabek just plain loves planes. Jack especially loves to talk about two particular planes, Lockheed Martin's X-35 Joint Strike Fighter and the Kolb Firestar. While at first glance a supersonic stealth fighter and an ultralight may not have much in common, they are both being built by Rezabeks. Two of Jack's sons are playing significant roles in Lockheed's development program for the Joint Strike Fighter. The Firestar is Jack's current building project.

Jack's first project was a plans-built Steen Skybolt that he built with his son Steve and friend John Graff. After 14 years of the love and labor, the Skybolt first flew in 1995. The workmanship and quality Jack put into the Skybolt is outstanding and the plane is an absolute ball to fly. (I may be a bit biased though, as I purchased a share of the plane last summer after a short courtship.)

Unfortunately around the time the Skybolt was completed, Jack lost his medical certificate. Unwilling to let that keep him from flying, Jack began researching ultralights and last summer

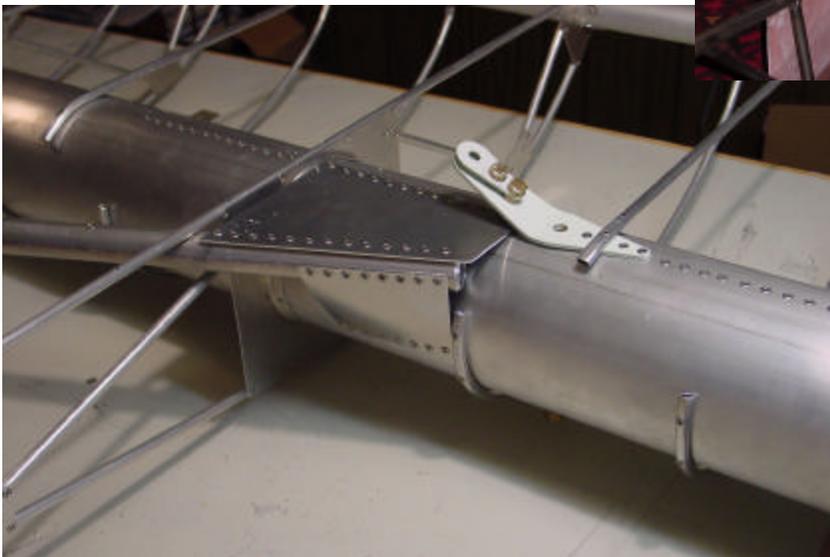


Top: Jack next to his new 50hp Rotax 503 that will power his Firestar project. Bottom: The Lockheed Martin X-35 Joint Strike Fighter being built by Jack's sons (no word on kit pricing or availability).

(Continued from page 6)

decided to build the Kolb Firestar. The Firestar design dates back to the early 1980's and has been one of the most successful ultralights on the market. Its simple and clean design makes it an excellent performer and fun to fly.

Jack received the wing and tail kit last fall and quickly got to work. Jack's workshop is in his basement and his main workbench is a pool table covered with particle board. The stairways are a tight fit, but the basement makes for a convenient and nicely heated work area. The wing structure consists of an aluminum tubular spar with preformed aluminum ribs.



Stainless steel blind ("pop") rivets are used throughout. Jack highly recommends that you use a pneumatic rivet puller as these little rivets are quite tough. The wings will be covered using Stitts Poly Fiber process.

The fuselage and engine kit arrived in January. Like many ultralights, the Firestar is a pusher design utilizing a Rotax two stroke engine. Jack chose the Rotax 503, 50hp air-cooled and oil-

injected, to power the Firestar. The fuselage is a steel cage with an aluminum tailboom and aluminum fabric covered tail.

With his wing and tail structures built, Jack's next big task is to prime the steel fuselage and parts. Then it is off to a hangar to rig the wings and fuselage so the attachments can be completed. Jack has hopes of having the Firestar flying yet this summer. Based on what I have seen, it will be a beauty when he gets it done. Now when do I get to fly it?



What you missed on the Internet

Here are some selected messages that were exchanged on our Chapter's email list. If you want to join in on the fun, you can sign-up by pointing your web browser to <http://groups.yahoo.com/group/eachapter33/join>. Once you sign-up, you can send email to eachapter33@yahoogroups.com.

From: "David Koelzer" <KoelDa@ncs.com>

Subject: Draft Wiring diagram for Sonex with Jabiru and a twist of lime

Hi Guys,

After studying the Sonex plans, the Jabiru manual and several aero electric books, I have come up with a draft wiring diagram for my Sonex. I was wondering if there were any EEs out there that could look this over and tell me how badly I have messed this up. The right side of the main buss is pretty straight forward but I am not sure I got the wiring to the left of the main buss is correct. I have not yet figured out which wires should be shielded and the correct wire gauges. I also think I used to many breakers.

The alternator and regulator are the ones that come with the Jabiru and are some what different than standard aircraft units. The 3 phase alternator has three wires that connect to corresponding wires on the regulator. The regulator also has a black ground wire, a red battery wire and a brown positive wire which should only be live when the engine is running. I am running the brown wire through a split master switch.

Again this is a DRAFT diagram not a finished schematic. DO NOT assume it is correct and use it in your plane.

(Continued on page 9)



David Koelzer getting help with his Sonex electrical schematic

(Continued from page 8)

From: Tom Olson <TCOlson@cedar-rapids.net>
Subject: Re: [eaachapter33] RE: Load analysis for wiring diagram

David, your diagram looks ok except the diode on the master relay needs to be reversed and tie to +12 not ground. Remember, the current flowing through the coil needs to keep flowing when it is turned off with the switch.

It isn't clear what kind of relay you are using on the alternator output. It looks like a good idea but can't be a starter type relay because they can't take long term ON time. The diode is ok in that dwg.

The long term current draw being an amp or so below your max alternator capacity is a bit of a concern. Some alternators don't really put out their rated capacity and at what speed is it rated? You should be ok in day conditions since the Nav lights wouldn't normally be on. This would give you about 5 amps charge rate. Assuming a typical start is 200 Amps for 30 seconds or 100 amp minutes your alternator will replace the charge in about 20 minutes at 5 amps.

I wouldn't worry too much unless you are planning a lot of extended night flying.

You should plan a test to look at your battery voltage condition with all normal loads to ensure you are getting a charge once you have it running.

From: Tom Olson <TCOlson@cedar-rapids.net>
 Subject: Fwd: Webster City Airshow 2001

FYI, here is some info on an airshow in Webster City in May. Anyone want to represent the chapter there?

From: "Jeremy Heilskov" <heilskov@netins.net>
 Subject: Webster City Airshow 2001

Dear EAA members:

Hi, my name is Jeremy Heilskov and I'm with the Iowa Central Aviation Club. We would like to invite you and your members to the 3rd Annual Fly-In Breakfast, Airshow, and Car Show on Sunday, May 20, 2001 at the Webster City Municipal Airport. We would like to have some homebuilt aircraft on static display on a space available basis. We would also like an EAA chapter to represent the EAA And set up a booth with information and one or two representatives. Let us know if you would be interested in setting up a booth free of charge.

The airshow includes the following acts and static displays:

Bob Davis and his Russian SU-29 Sukhoi (former U.S. Aerobatic Champion)
 Vlado Lench and his P-51 Mustang (Moonbeam McSwine)
 Joe Dooley and his Pitts S1S (The Flying Irishman)
 Bob Vosburg and friend with their two L-39 military jet trainers.
 Elmer Steier and his 1943 Cessna UC-78 (Bamboo Bomber).

Please feel free to contact myself or the current club president Nate Riordan at 515-832-3723.

Any questions feel free to contact Jeremy Heilskov or myself at 515-832-3723 and check out our web site at www.stormflyingservice.com/icac.

Editor's Rant

By David Koelzer



Get 'em Flying!

By John Anderson

Being new to Cedar Rapids and EAA Chapter 33, I unfortunately did not have the chance to get to know Red Miner. However, reading the tributes to him gives me new appreciation of Iowa's Aviation history and the people that made that history happen.

I am embarrassed to say that even though I am the editor of this newsletter, up to recently I did not know why it was called "The Lippisch Letter". Or who Dr. Alexander M. Lippisch was.

It is far too easy for us to get wrapped up in our day-to-day lives and forget about who came before us and the trials they faced and overcame.

Carl Carson wrote about Red: "While the person is lost in a small way his stories and legend will not be lost. I am working with the History Center on an aviation display scheduled for 2003, the anniversary of the Wright Bros. flight. We have collected a wide variety of photos, news clippings, etc., but most exciting is getting videos of "oldtimers" telling about their aviation experiences. Knowing that Red was in poor health our video crew went to his place and did an extensive video of him telling his stories. This is precious."

That exhibit will be on my "must see" list when it opens. Also I am

going to make sure I get to know "oldtimes" in our chapter. I want to hear the stories first-hand while I have the chance.

Fly Market

FOR SALE: Genesis Aircraft kit. Fuselage frame, tailbooms, lift struts, landing gear, nose gear, wheels, tires, instrument panel, seats/seatcovers, all flight control cables and hardware. Wing frames, upper and lower ribs, complete sailcloth set, (used, but still very airworthy) Elevator, stabilizer, rudder and vertical stabilizer frames. Fiberglass firewall, bellypan, nosecone, lexan windscreen, hydraulic brakes, and 2 electric trim motors for pitch and lateral trim. All these parts would retail for over \$11,000. I'm asking \$6000. Brian Jensen (319)652-6517 or jensenavi@aol.com

FOR SALE: 1940 Taylorcraft For our new members who don't already know, one of our dear friends and past chapter presidents, John Giordano, died in an accident last year. John owned 1/2 share in a very nice 1940 BC65 Taylorcraft. Susan Giordano is still looking for someone to take over John's share in this aircraft, please help her get the word out to the local flying public.

Carl Carson (366-4545) is the other partner and recently called to remind me that now would be a good time for someone to contact him and see the aircraft before the spring flying season begins. This aircraft has been in Carl's family for all but 4 years since it was new. The engine was given a major in 99 and the prop was replaced the year before that. It was recovered in 1991 and is hangered in a T hanger at McBride Airport. This aircraft has to be one of the most economical ways to get airborne anywhere in the area. Please give Carl a call if you are interested.

We are working with the Lone Tree School on a Young Eagles Flight after the first of the year. The principal has requested some sort of program for an aviation section and it appears we would be able to fly up to 32 students.

We plan to provide about an hour of ground school for the class at the Iowa City airport and follow with the flight program for those with parental authorization. Please make note of this as I will be contacting pilots as soon as we can set some possible dates. We are thinking of a nice winter day as they can be flexible.

FOR SALE

25% Share of 1941 Stearman Biplane NC64712 (the Red one) Based in Iowa City. The owner is selling his share because he purchased the major share of a newly restored Stearman that is now kept in the hanger next to this one. 220hp Lycoming, full electrical system, radio, Loran, smoke system. Well maintained, always hangared and flown regularly. \$17,500.

CONTACT: John Ockenfels 319-351-3461 evenings or 319 351 2848 daytime
e-mail johnockenfels@citycarton.com or johnockenfels@hotmail.com





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In The April 2001 Issue...

Highway in the Sky, Red Miner, Jack Rezabek's Kolb Firestar

Don't forget to RSVP for the Annual EAA Banquet by Monday March 26, please review the details inside.

Chapter 33 Calendar

March 31, 6:00 PM
Annual Banquet, OxYoke Inn,
Main Amana. Tim Etherington
Synthetic Vision, RSVP



Marv Hoppenworth demonstrating proper cable swaging technique.