

THE LIPPISCH LETTER



Experimental Aviation Association - Chapter 33

January 2015



Welcome to Chapter 33!

Next meeting:
Thursday, January 22, 2015 @
7:00 pm
CID Airport Safety Office
Speaker: Tim Busch,
Chapter 33 President
Subject: Flying Clubs

Aviation Links

- www.LiveATC.net
- www.FlightAware.com
- www.AirNav.com
- www.DUAT.com
- www.DUATS.com
- www.EAA.org
- www.EAA33.org

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Innovation and/or Growth

By Tim Busch

Somewhat tongue in cheek, I declare that we have reached a point in aviation where all technical problems have been solved. How is this possible, you ask? Think about all the aviation technical problems mankind has solved:

- Aviating: Getting in the air
 - Sturdy, reliable airframes
 - Highly reliable engines
 - Autopilots
- Navigating
 - GPS
 - Moving Maps
 - Mission Planning
- Communication
 - Datalinks
- Weather Avoidance
 - Radar
 - XM Weather

- Anti/De-ice
- Doing it relatively safely
 - Angle of Attack indicators
 - Airframe Parachutes
 - Airbags

So what's the problem?

It's not mainstream.

Why Not?

It costs too much.

People spend a lot of time complaining about all the various factors involved in cost, but the root cause of all of those things comes down to just one thing:

Numbers.

We're too small.

There is only one solution to the numbers problem. Production. Real production. Cont'd on page 2

Welcome to The Lippisch Letter!

This is your Lippisch Letter. The only way to keep it alive is for you to help. What trips your trigger in aviation? Building, Flying, Restoring, Hangar Flying? Is it all about aluminum, steel tube & fabric, composites, wood, avionics, engines, or none of the above? Are you a fixed wing fan, balloon lifter, whirly girl, glider guy, seaplane sailor? Do you teach kids or adults? Tell us about your travels, your adventures, and your tests. Believe it or not, you are all experts in something. Share that vast knowledge, and we will all get smarter.

Show us photos from your flight breakfast adventure, your aircraft project, or you sharing aviation with friends young and old. Let's make The Lippisch Letter a new source of fun!

Innovation and/or Growth

continued

Chapter 33 Communications Corner

Right now, the largest general aircraft factories in the world (Cessna and Cirrus) are capable of, wait for it... 2000 units per year. No, they're not even building to that capacity....not even half that. Those general aviation factories average 1000 hours of hand touch labor per aircraft.

For comparison, just one production line at Toyota Motors produces 250,000 cars per year. Toyota averages 19 hours of hand touch labor per car. GM averages 40. Their factories are very automated. Developing an automated factory for general aviation would remove \$100,000 of cost from a high-end Light Sport Aircraft. The result would be an LSA for under \$50,000.



That brings up a “chicken and egg” problem. If you built planes, who would fly them? You don't have enough pilots. If you made 10 million pilots, what would they fly?

I recently participated in the development of a new concept company in which I was the spearhead for the training segment. I believe it's a very solvable problem, using classrooms full of simulators and groups of identical training airplanes. I'm convinced that we could keep the number of pilots synchronized with an aircraft production startup. (The company died for lack of funding.)

Instead we keep inventing newer and better technologies and hand-building them. I'm not saying electric engines aren't cool and won't be the next big thing, but somebody needs to address the elephant in the room:

Numbers.

Until then, we'll be building our own aircraft and continue flying old ones.

These days, there must be a million ways to communicate inside and outside an organization. Here are just a few ways Chapter 33 currently communicates with you:

Newsletter: The Lippisch Letter

Website: www.EAA33.org

Facebook: EAA Chapter 33

YahooGroups.com:

EAAChapter33

Email:

Leader emails & phones on page 7

Email:

EAAChapter33@yahoo.com

These are low-cost methods of keeping us in touch with each other. Why is this important? Because we are more effective if we stick together. We can respond to legislative challenges faster (user fees anyone?), we can learn faster (who knows where to find the chapter scales?), we can participate quickly (who's going to Sully for breakfast?), etc.

We have the capability to post files, photos, internet links, calendar items, our membership list, and much more.

Please take advantage of all this communications capability. The more we use it, the better we get.

The general public has no idea what aviation is or what it's about, except what they learn from the media, and you know that isn't good. Let's use these tools to also help educate them so they can see why we love aviation!



By the way, you might ask how they did it in WWII? Labor was far cheaper then, everything was done by hand, and everything was funded by the U.S. government.

Why are there no general aviation factories? Financial risk and a stunted banking system. Someone in the industry needs to take the risk and when that day comes, the cost problem will go away.

Yes, I'm sure.

- Tim

EAA Chapter 33

Calendar of Events

January 22, 2015

EAA Chapter 33 Meeting

3411 Beech Way SW, CR
6:00 board meeting
7:00 member meeting
Flying Clubs by Tim Busch

January 31, 2015

Greenfield Municipal Airport (GFZ)

Iowa Aviation Museum
Chili Fly-In 11 a.m. – 2 p.m.
Phone: 641-343-7184
Email: aviation@iowatelecom.net
Website: www.flyingmuseum.com

February 6 & 7, 2015

Midwest Aircraft Maintenance Symposium and Trade Show

Airport Holiday Inn
Des Moines, Iowa
Phone: 319-389-3943 (Phil Conn)
Email: philp.conn@rockwellcollins.com
Website: www.iaaviation.com

Independence Municipal Airport (IIB)

Formation Flying Ground School
(Free) 10 – 11 a.m.
Phone: 319-334-4000 (Johnathan Walter/Walter Aviation)
Email: office@walteraviation.com

2015 Chapter 33 Tentative Meeting Dates

February 22
March 26
April 23
May 28
June 25
July 23 (Airventure!)
August 27
September 24
October 22
November 26

Iowa's Airports Check 'em out!

Burlington	BRL	Iowa Falls	IFA
Cedar Rapids	CID	Jefferson	EFW
Des Moines	DSM	Keokuk	EOK
Dubuque	DBQ	Keosauqua	6K9
Mason City	MCW	Knoxville	OXV
Sioux City	SUX	Lake Mills	OY6
Waterloo	ALO	Lamoni	LWD
Fort Dodge	FOD	Larchwood*	2VA
Ackley	4C7	Le Mars	LRJ
Albia	4C8	Manchester	C27
Algona	AXA	Mapleton	MEY
Allison	K98	Maquoketa	OQW
Amana	C11	Marion	C17
Ames	AMW	Marshalltown	MIW
Anita	Y43	Milford	4D8
Ankeny	IKV	Monona	7C3
Atlantic	AIO	Montezuma	7C5
Audubon	ADU	Monticello	MXO
Bedford	Y46	Mount Ayr	1Y3
Belle Plaine	TZT	Mount Pleasant	MPZ
Belmond	Y48	Muscatine	MUT
Bloomfield	4K6	New Hampton	1Y5
Boone	BNW	Newton	TNU
Carroll	CIN	Northwood	5D2
Centerville	TVK	Oelwein	OLZ
Chariton	CNC	Onawa	K36
Charles City	CCY	Orange City	ORC
Cherokee	CKP	Osage	D02
Clarinda	ICL	Osceola	I75
Clarion	CAV	Oskaloosa	OOA
Clinton	CWI	Ottumwa	OTM
Corning	CRZ	Paullina	1Y9
Council Bluffs	CBF	Pella	PEA
Cresco	CJJ	Perry	PRO
Creston	CSQ	Pocahontas	POH
Davenport	DVN	Primghar	2Y0
Decorah	DEH	Red Oak	RDK
Denison	DNS	Rock Rapids	RRQ
Dyersville*	IA8	Rockwell City	2Y4
Eagle Grove	EAG	Sac City	SKI
Elkader	I27	Sheldon	SHL
Emmetsburg	EGQ	Shenandoah	SDA
Estherville	EST	Sibley	ISB
Fairfield	FFL	Sioux Center	SOY
Forest City	FXY	Spencer	SPW
Fort Madison	FSW	Spirit Lake	0F3
Greenfield	GFZ	Storm Lake	SLB
Grinnell	GGI	Sully	8C2
Grundy Center	6K7	Tipton	8C4
Guthrie Center	GCT	Toledo	8C5
Hampton	HPT	Traer	8C6
Harlan	HNR	Vinton	VTI
Humboldt	0K7	Washington	AWG
Ida Grove	IDG	Waukon	Y01
Independence	IIB	Waverly	C25
Iowa City	IOW	Webster City	EBS
		West Union	3Y2
		Winterset	3Y3
		Woodbine	3Y4

Piper SuperCub History

Courtesy SportsmanPilot.com Winter 2005 Issue.

If the first production Super Cub had been human, it probably would have suffered from a severe identity crisis. It ended up with the model designation PA-18, but could have been a PA-19 . . . and should have been a PA-20. According to Roger Peperell's exhaustive reference work, Piper Aircraft, the convoluted tale unfolded as follows.

Early in 1948, Piper assigned the model designation PA-18 to an improved version of the PA-17 Vagabond, which was to be introduced to the marketplace in 1949. A Continental C-90 powered prototype was built and tested, but Piper decided to cancel the program early in 1949.

At the same time the company was developing the PA-19, which was a version of the PA-11 cub Special for the U.S. Army. Only three were built and one of them, N5011H (Ser. No. 19-1), would serve as the certification test bed for the installation of the Continental (1-90-12F; Lycoming O-235-C1 and O-290-D. The PA-11 airframe was unchanged, except for a revised center section and the use of the more rounded rudder that was first used on the J-4 Cub Coupe. The PA-11, which was an updated J-3, had retained the more angular Cub rudder. (An interesting side note: When Dick Wagner of Wag-Aero developed his Cuby, Wagabond and 2+2 kits, all were fitted with J-3 rudders. Reason: Dick had purchased all the J-3 inventory left at Piper's old Ponca City, OK plant, which included a barn full of J-3 elevators, stabilizers, gear legs and rudders. Golda and I were there in Lyons, WI to see them shoals after Dick returned home with the first semi load of goodies)

Military orders for the PA-19 that Piper Aircraft hoped for did not immediately materialize, so the company decided to "civilianize" the design and market it as the Super Cub. Rather than advancing to the next model designation, which would have been PA-20, Piper chose to go backward and assign the unused PA-18 designation to the Super Cub. Actually, by this time the PA-20 designation had already been assigned to the four-place Pacer, so the only other alternative would have been to jump ahead to PA-21! All this model designation confusion came about because these different airplanes were under development at the same time. Finally, however, things were sorted out and the

Super Cubs went into production - replacing the PA-11 on the production line in November of 1949. The very first Super Cub was N5410H, Ser. No. 18-1. It is still on the FAA'S books today and was recently restored to flying condition. Super Cubs were certified and produced by Piper Aircraft with five different engines (plus several dash number variants of those engines).

- **PA-18-95 (ATC #1A2)**, powered with a Continental C-90 engine. Like the PA-11 from which it was derived, it had no flaps, had a straight elevator (no counterbalancing horns) and one 18 gallon fuel tank in the left wing. Another 18 gallon tank for the right wing was optional. The initial price in 1949 was \$5,850. Surprisingly, even though more powerful models were being manufactured, the PA-18-95 continued in production until 1961.
- **PA-18-105**, powered with a Lycoming O-235-C1. It had a larger horizontal tail, with balanced elevators and flaps (from the PA-20 parts bin). The PA-18-105s were only built from January to October of 1950 when that model was replaced by the PA18-125.
- **PA-18-125**, powered by a Lycoming O-290-D. Oil cooler scoop on top of the cowling.
- **PA-18-135**, Lycoming O-290-D2. Production began in May of 1952. Oil cooler scoop moved to the bottom of the cowling. Two wing tanks standard with this model.
- **PA-18-150/160**, Lycoming O-320. Production began in October of 1954 and continued until November 22, 1982 when the Super Cub was terminated. Production was resumed at Vero Beach, FL in 1988, however - as a \$45,000 completed airplane or a \$21,000 kit (minus engine and prop). Production continued until December of 1994 when the last Piper built Super Cub, N41594, rolled off the production line.

Along the way a variety of sub models were produced, including PA-18s seaplanes and PA-18A ag planes. A total of 1,493 were built for the Air Force and Army as L-18s and L-21s, and many of those were sent to foreign countries un-

der the Mutual Defense Aid Pact. The military models were ordered and built in blocks of serial numbered right along with the civilian production.

In total, Piper Aircraft built 10,326 Super Cubs between 1949 and 1994. Just 44 were built at Vero Beach - all the rest at Lock Haven. The biggest year for Super Cub production was 1953, when 1043 were built.

Like the J-3s and PA-11s before them, most Super Cubs were initially used as working airplanes. They served as trainers, dusters and sprayers, banner towers, pipeline and bowerlike patrollers, border patrollers, military liaison aircraft, bush planes and in any other way pilots could use and abuse them. Few aircraft have ever been subjected to more aftermarket modifications than the Super Cub - in fact in their efforts to squeeze out more performance, Alaskan bush pilots have sometimes rendered them virtually unidentifiable as PA-18s.

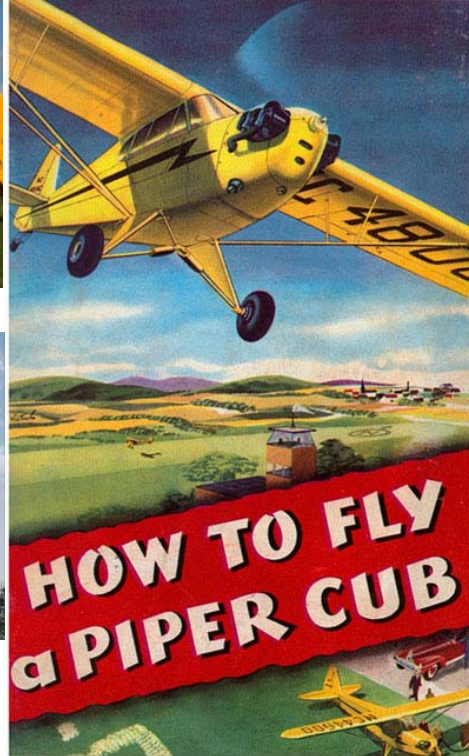
The Super Cub, however, did not die when Piper Aircraft ceased production in 1994. A host of small companies simply tooled up and began building their own versions of the airplane - in kit form to avoid the cost of certification. There are even turboprop versions flying today!

All the various models of Super cubs are highly prized today - as evidenced by the prices being asked for them in Trade-A-Plane ads. In a recent issue, for example, a rebuilt, highly modified 1963 model was listed for \$159,000! Many continue to be working airplanes, but, increasingly, they are being restored as showplanes by enthusiasts like Ron and Nancy Normark.

Good books related to Cubs and building:

- Piper High Wings - Budd Davisson
- Those Legendary Cubs
- Flight of Passage
- Sportplane Const. Books - Bingelis
- Richard Finch Welding Books

Blast From the Past Piper Cubs on Parade



Blast From the Past Piper Cubs on Parade



Blast From the Past

Historical Aviation Photo Log



2014 EAA Chapter 33 Leadership

by Tim Busch

Mike Jimenez has volunteered to be the chapter vice president if we'll have him, but we still need a program chair and a fund-raising chair for 2015. Others may be available as well (president and newsletter editor, for example!), so if you have any interest in helping this outstanding organization, please let me know.

This is a great time to give back to *your, local, aviation* organization. Chapter 33 has been active in the area for over 50 years, and we're not about to stop now!

Don't worry about being new to aviation. The best way to learn anything is to get involved.

Working together, we will contin-

ue to learn and grow Chapter 33, and aviation in general.

Elections will be held at the January meeting. We need you!

Come join us.

- Tim

First	Last	Position	Email	Phone
Tim	Busch	President	timcfi@yahoo.com	319-373-3971
	OPEN	Vice President		
David	Miles	Secretary	david.miles@mchsi.com	585-703-2485
Denis	Sailer	Treasurer	rv9a@mchsi.com	319-294-0084
Dan	Meyer	At Large Board Member	D319Meyer@aol.com	319-362-0507
Chad	Wilhelm	At Large Board Member	chad.wilhelm74@yahoo.com	319-270-3218
Martin	Pauly	At Large Board Member	mpauly@mac.com	319-431-3174
Rob	Myhlhousen	At Large Board Member	robert.myhlhousen@gmail.com	319-640-0293
Tim	Busch	Newsletter Editor	timcfi@yahoo.com	319-373-3971
David	Miles	Web Editor	david.miles@mchsi.com	585-703-2485
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Connie	White	Young Eagle Coordinator	rcwhite691@gmail.com	319-393-6484
Dan	Meyer	Membership Chair	D319Meyer@aol.com	319-362-0507
Dave	Lammers	Flight Advisor	davelammers@mchsi.com	319-377-1425
Marvin	Hoppenworth	Technical Counselor	pedalplane@imon.com	319-396-6283
Tom	Olson	Technical Counselor	tcolson6@mediacombb.net	319-393-5531
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	OPEN	Programs		
Martin	Pauly	Social Chair	mpauly@mac.com	319-431-3174
Rob	Myhlhousen	Social Chair	robert.myhlhousen@gmail.com	319-640-0293
Sarah	Hammonds	Public Relations	Sarah.hammonds@gmail.com	
	OPEN	Fund Raising		

The Editor's Hangar

by Tim Busch

Every single day, we make choices. What do I want for me, my family, my friends, my job, my hobbies, my organizations, my future?

What is your expectation of Chapter 33 and EAA in general? Do you want to learn something, socialize, build something, fly Young Eagles, or what is it that makes you want to be part of this organization? I really want to know, so send me an email!

For me, I guess I want to help grow General Aviation while enjoying this fantastic activity. I suppose that's no secret to you.

There are many ways to grow

always tried to limit the rides to one per kid. Oops. Keep flying those kids!

Other ways to grow aviation include taking friends and family flying. There are a lot of empty seats flying every day. We really need to fill them.

Building and sharing that experience is another way. We've been discussing a chapter build project to get folks interested in the building process, and thereby getting them close to aviation. Hopefully that translates into



cent numbers for our chapter's seven county area.

The good news is that Sport Pilot continues to grow. We have 13 Sport Pilots in our area, and 89 across the state. The bad news is that our overall numbers continue to decline.

I would sure like to see this trend reverse itself. It would help reduce the cost of flying, instead of the continuous rise we've been experiencing.

In this month's meeting, we'll be discussing flying clubs and how they can help keep us flying and even grow the pilot population by sharing the cost of getting in the air. If you promise to come to the meeting, I will share a little secret: it involves a chapter build project.

Blue Skies!
Tim

IOWA ACTIVE PILOTS DETAIL									
Y1205									
COUNTY	STU	SPT	REC	PVT	COM	ATP	TOT	FOR	FLT
	PILOT	PILOT	PILOT	PILOT	PILOT	PILOT	US PILOT	PILOT	INSTR
BENTON	5	1	0	21	14	7	48	0	7
CEDAR	9	0	0	19	4	3	35	0	1
IOWA	7	0	0	5	7	6	25	0	6
JOHNSON	51	4	0	120	42	35	252	1	43
JONES	2	2	0	6	5	2	17	0	3
LINN	74	6	0	214	81	54	429	10	70
WASHINGTON	2	0	0	17	12	4	35	0	5
Jan-15	150	13	0	402	165	111	841	11	135

General Aviation. Young Eagles has been a great way to introduce kids to flight. The sad thing is that EAA recently figured out that the more you fly them, the better their odds are that they will actually continue and get a license. I say it's sad because in the past we

more people who might fly.

When I was running the statewide non-profit Iowa Aviation Promotion Group, I started tracking pilot numbers, county-by-county, across the state. The chart you see here are the most re-

EAA Chapter 33 Application & Questionnaire

Name: _____

EAA #: _____ expires: _____ Young Eagles # _____

Address: _____

City: _____ State: _____ Zip: _____

Daytime Phone: _____ Evening Phone: _____

Email Address: _____

Copilot's Name: _____

Pilot Ratings (if any) _____

Aircraft Owned and/or Flying (if any): _____

Aircraft Under Construction / Restoration (if any): _____

Newsletter: Email (y/n) _____ Paper (+ \$10/year y/n): _____

What do you want from EAA? _____

(Socializing, Learning, Building, Restoring, Traveling, Flying, etc.)

How would you like to contribute to EAA? _____

(Socializing, Teaching, Young Eagles, Flying, Building, Restoring, etc.)

Dues are \$20/year, \$30 for 2 years, or \$40 for 3 years. Add \$10/year for paper delivery.

Please send your completed application and check to:

EAA Chapter 33, c/o Denis Sailer, 120 15th Ave Ct. Hiawatha, IA 52233

