

THE LEADING EDGE

NEWSLETTER OF MUROC EAA CHAPTER 1000

Voted to Top Ten Newsletters, 1997, 1998 McKillop Award Competition

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February 2017

Chapter 1000 meets monthly on the third Tuesday of the month in the USAF Test Pilot School Scobee Auditorium, Edwards AFB, CA at 1700 or 5:00 PM, whichever you prefer. Any changes of meeting venue will be announced in the newsletter. Offer void where prohibited. Your mileage may vary. Open to military and civilian alike.

This Month's Meeting:



The Laird Swallow Returns!

Chuck L. Laird

Tuesday, 21 February 2017

1700 hrs (5:00 PM Civilian Time)

USAF Test Pilot School Auditorium

Edwards AFB, CA

Any aviation history nut worth their salt gets excited at a chance to meet anyone who had a significant impact on aircraft development. When that is not possible, the next best thing is to meet a direct descendant of such a person. That's one reason amongst many why we enjoy having **Jimmy Doolittle III** around.

This month we have an additional such opportunity. Our speaker this month is **Chuck Laird**, who is known far and wide as the next door neighbor of famous Swiss-American aviator and mercenary **Hellmuth Steinlin**. Additionally, he is the grand-nephew of **Matty Laird**, designer of the **Laird Super Solution**, a famous race airplane that was piloted to victory by **Jimmy Doolittle I**.

Matty Laird also designed one of the first commercially successful aircraft designs, the **Swallow**. A few of these remain in the wild in flying condition, including one regularly seen at Oshkosh. Another one, pictured above, has been seen multiple times in Chuck Laird's hangar. For years, the fuselage has been sitting in the hangar, estranged from its wings by a gap of 50 feet or so. Based on the title of the presentation above, as provided by **Vice Kommandant Steinlin**, there is a

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suspicion that perhaps these two entities have been reunited. If so, this could be very exciting. **Junior PPO Emmy** has been following this story for her entire life, having been introduced to the Swallow at the tender age of 3 months.

There is also hope that **Chuck** can give us an update on the date for the Annual Adelanto Fly-In. Rumor has it

¹Simply write your name on a government printed "Free Dues" coupon and hand it to any chapter officer. "Free Dues" coupons are available at any bank, ATM, and many businesses. Ask for it by the secret code name "Twenty Dollar Bill."

that he is currently negotiating with the weather gods to arrange a Saturday in April without excessive winds. We should plan to get a picture of the *PPOs* around the resurrected Swallow, assuming our guess is correct.

Chuck is expected to be joined by his sons **Charley** and **William**.

As for the immediate post-meeting activity, we will make our traditional trek to the **BK Dead Kow Emporium** where we can get the real inside scoop on any restoration stories.

TAKE NOTE: If you do not normally have base access and depend on having your name on an Entry Authorization List to get past the young airmen with weapons, **you must get to the Visitors Center at the West Gate No Later Than 1630!** At 1630 the Visitors Center closes, and after that you will not be able to get in based on the EAL. Even more new procedures—the gate is no longer accepting phone calls to get you in. You have to be on the list. Don't ask questions and don't be late!

Contact **Gary Aldrich** if you need to be added to the Entry Authorization List. Do it now—the day of is several days too late.

- **Erbman**
For the **Vice Kommandant**

Last Month's Meeting

EAA Chapter 1000
USAF Test Pilot School, Scobee Auditorium
Edwards AFB, CA
17 January 2017
Gary Aldrich, Presiding

The January meeting was held at the Test Pilot School at Edwards AFB with 11 members and guests attending. Social hour began at 1700 with chips, dips, salsa, **Tuki Cookies** and soda (leaded and otherwise).

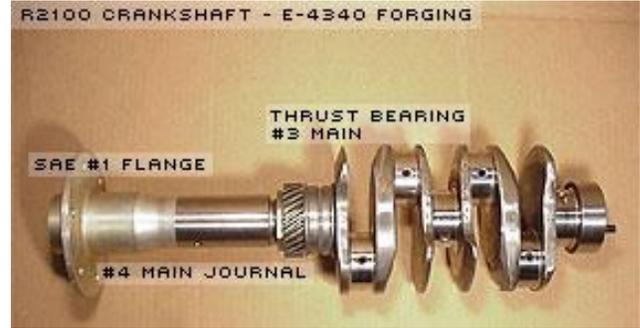
Our guest speaker was none other than **Joe Horvath**, President and founder of **Revmaster** (Automotive and Aviation) located in nearby Hesperia.

Revmaster was established in 1959 for the purpose of producing remanufactured Volkswagen engines for the automotive market.

Revmaster developed an aviation derivative engine to replace McCullough engines on North American target drones. The program was ultimately cancelled, but Revmaster's aviation interests continued.

Revmaster began a design and developmental program in 1968 to manufacture an all-new light aircraft powerplant. *Revmaster Aviation* was formed as a subsidiary headquartered at the Chino Airport in Chino, California, leading to the production of the legendary R-2100 engine, the mainstay of Ken Rand KR-1 and KR-2 as well as Q2 aircraft. The company remained in Chino through the 1970's and eventually relocated to newer facilities at the Hesperia Airport.

Revmaster's current offering is the R-2300 engine (2331 cc) featuring a forged 4 main bearing crank (as opposed to the 3 bearing automotive engine) developing 85 horsepower for \$8,825.00.



The magnesium case is essentially the only stock VW part and is acquired from the OEM in Brazil. All other parts are custom made by Revmaster.

Detailed information on the R-2300 and Revmaster can be viewed at their websites: revmasteraviation.com and revmasterautomotive.com.



Joe entertained us with several stories of Revmaster engines used in various motorglider applications, the R-3000 automotive engines developing 1000 horsepower for dragsters, and fires associated with the magnesium engine case.

I suggested that "Milk of Magnesia" should be used as it would be self-extinguishing. Joe was kind enough to appear mildly intrigued by the suggestion.

Activities were subsequently moved to the **Burger King Dead Cow Emporium** for dinner where Joe provided additional stories.

Thanks to **Vice-Kommandant Hellmuth Steinlin** for bringing in another excellent speaker.

Kommandant Aldrich closed the meeting with the assuring declaration the "Victory!" had been achieved.

Most of this is true.

- **Kent Troxel**
Minister of Propaganda
Chapter 1000 of the Experimental Aircraft Association of these United States of America and Occupied Territories
"We have more zeroes in our chapter than any other!"

Kommandant's Korner

EE Zurg may have a heart attack.

I'm submitting this month's K² **BEFORE** the deadline...something I rarely do. And, I probably wouldn't do it this month either but for the fact that I'm departing on another adventure in the morning. Sadly, this won't be an aviation adventure. **Mrs. Kommandant** and I will be traveling to the pleasant Central Valley town of **Paso Robles** to sample various ethanol-laced libations that are produced in and around the area. The adventure is sponsored by her Rotary club and includes tastings and meals at breweries, wineries, and distilleries. I bet **Erbman** is dying with envy! (*Uh, yeah. Sure. Whatever.*) We'll be traveling in the **Bayerische Motoren Werk X4** instead of the **Fightin' Skywagon** as we will be accompanied by another couple of **oenophiles**.



I briefly considered flying the four of us into Paso Robles Municipal Airport (KPRB) and renting a car for the weekend, but a quick weight and balance calculation indicated that our potential wine purchase would be severely restricted. Thinking back to the last time the **Aldriches** and the **Charests** did a wine weekend in Paso made up my mind to switch to terrestrial transport. At the end of that trip, I was forced to leave **Anne**, surrounded by cases of fermented grapes, in the terminal at KPRB while I ferried **Mike, Debra**, and their purchases northward to Byron Airport (C83). Even the impressive cargo capacity of the mighty Cessna was no match for four healthy adults and an impressive amount of wine (*maybe you should get a DeHavilland Beaver...*). Yes, I did retrieve **Anne**...and the wine, but I still hear about my lack of cargo planning and priorities.

So the **VC-180** will remain on the Battery-Minder in Hangar 703 where it's been since the mid-January Chapter Fly-out to Camarillo (KCMA). That expedition was exceedingly pleasant and successful as a handful of airplanes rendezvoused in front of the Waypoint Cafe to enjoy a sumptuous meal. The weather was beautiful and even though it was our second choice destination (Harris Ranch being under the weather), a great time was had by all. Of course the nice weather and good food also drew many non-**PPTAF** aircraft but they only added to the festive atmosphere.

Speaking of a festive atmosphere; **General Fox Airfield** will once again host the Los Angeles County Airshow the last weekend of March. Assuming the taxiway construction is completed (currently scheduled for the middle of this month) the Fighting Falcons of the **USAF Thunderbirds** will headline the two-day event. If the last couple of years are any indication it will be a fine airshow. I'll probably be in and around my hangar on that Saturday if anyone chooses to stop by. Hopefully the weather will cooperate as well. If you wait till Sunday to do the show I

will be up at Mountain Valley flying Naval Test Pilot School students around in sailplanes.

Hope everyone is surviving the seemingly unending procession of drought-busting storm systems. The wet weather has put the proverbial damper on flying but I think we can all agree that the water is good for our environment...and the promised bumper crop of California poppies that should be blooming soon.

Looking forward to seeing you all at our next gathering. Until then...

Fly Safe and Check Six,

- **Gary Aldrich**
Kommanding

How Fast Is Fast Enough? or: How I Learned to Stop Fretting and Love My Airplane

Occasionally someone will ask me if I am happy with my airplane. It's a reasonable question to ask of someone who has invested a significant portion of their time and treasure to realize a result. In the last several years I have come to realize that I am generally happy with the way I have it set up, with all of the gee-gaws and whammydoodles to make it easy to operate, and, thanks to ADS-B, tell me what the weather is and warn me where that other airplane is out there that is trying to turn me into the subject of an NTSB report.

There are two things about my airplane that I am less than happy about. The first is the inability to fit four adults in the airplane with full fuel as was advertised. The airplane is just overweight with four FAA standard 170 pound adults, and that's using the extra gross weight the designer allows for the seaplane version. (The designer allows a max gross weight of 2700 pounds for the seaplane version because the limiting structure is the landing gear legs. He recommends a max gross weight of 2500 pounds for the land plane, but that is also assuming utility category and unprepared surfaces. I fly in the normal category on paved runways, so I choose to use the 2700 pound number. The FAA says I am the manufacturer and I get to decide that.) I'm no longer just 170 pounds, and I know most of you aren't either. My airplane's empty weight is higher than the prototype, which I assess to all of those gee-gaws that keep me happy (the prototype was barely a day-VFR aircraft) and all of the primer applied for corrosion control (the prototype had very little). These are choices made during the build process.

Besides weight, that many adults drives the cg right to the aft limit or beyond. I've flown very near the aft cg limit, and it can be rather exciting during the takeoff, and not in a good way. There's really nothing I can do about that, except possibly modifying the airfoil of the horizontal tail (now an option on new Bearhawks). However, such a modification would down the airplane for about six months, and is not guaranteed to make the issue any better. The requirement to carry four adults has been rare enough

that I've chosen to just leave it as it is. I say it is a 3-1/2 seat airplane, as the max I can take is three adults and one kid.

The other thing that I'm less than happy about is the cruise speed. I'm not sure why, but before building I led myself to believe that the cruise speed would be about 140 knots true airspeed. I'm not sure how that happened, but the prototype's cruise speed was quoted in miles per hour (which I still think is inappropriate for airplanes), and 140 miles per hour is 122 knots, which is pretty much what my airplane will do. I may be just the victim of units confusion.

Psychologists tell us that it is not good to compare ourselves to other people, and that we should just be happy with who we are. Intellectually that sounds like good advice, but it is virtually impossible to follow. The same should probably be said of comparing your airplane with other people's airplanes, yet the result is the same. I had flown many times with the **Kommandant** in the **Fightin' Skywagon**, which cruises at about 135 knots true. I was looking forward to having to pull the throttle back while cruising in formation with the **Fightin' Skywagon** on our way to Oshkosh, basking in the superiority of what homebuilding could do over the outdated certificated technology from Wichita. As frequently happens when you plan to gloat over your friends, it didn't work out that way. Yup, crow can be mighty tasty if you season it right.

Speed Is A Funny Thing

Our collective addiction to speed is a funny thing, as the idea of "more speed" gives us an emotional rush. Look at how many activities we engage in that are focused on speed. NASCAR and Indy Car racing. The Reno Air Races. Drag Racing. Downhill skiing. The Bobsled. The Luge. Speed Skating. The 100 meter sprint. Competitive swimming. While speed limits keep automobile speeds from being a major selling point, many bizjets tout their slightly higher cruising speed as a major selling point. Being slightly faster makes us feel superior.

However, when looked at analytically, slight increases in speed may get you to the "finish line" before someone else, but it doesn't make that significant of a difference in time. For example, my daily commute to work is about 17 miles. With the various speed limits, traffic, and stop lights, it takes me roughly 30 minutes to get to work. This calculates to an average speed of 34 miles per hour. Now, let's say that I feel like I'm late for work. Therefore, I drive 5 miles per hour faster on each leg of my commute because I think that is what I can get away with without being caught. With a new average speed of 39 miles per hour, how much time do I shave off of my commute? Just under four minutes. If I'm only four minutes late, I'm probably not freaked out about it. But let's say I'm 15 minutes late. How fast would I have to drive to make that up in the distance available? An average of 68 miles per hour, or 34 mph faster on each leg. To do this would require driving the 65 mph section at 99 mph! Do you think that might draw some attention?

The point is that it is very difficult to "make up time" just by going a little faster. This branches to a sidebar, which is **Erbman's Law of Driving**: "Be patient. That little bit of extra speed you are trying to gain won't amount to arriving significantly earlier." The corollary is "Patience rewards you with lower stress." If you're late, suck it up, Buttercup, because you won't fix it by driving a little faster.

The Usual Suspects

So ignoring the emotional feeling of superiority one gets from being slightly faster than someone else, I set out to try to come to terms with what the **Combat Bearhawk's** speed capability really means to me. This thinking probably started when a pilot I respect, who could have most any airplane he wanted, said that he thought 125 knots true airspeed was a perfectly adequate cruise speed. To get a feeling for how fast is fast enough, we need to look not at speed itself, but at its integral, for it is the cumulative effect of speed that affects our lives. In non-geek speak, it's time that matters.

We could take a very mathematical developmental test (DT) analysis approach by just picking true airspeeds and making some calculations. This would not be very satisfying, as the level of abstraction is too great. It falls very short in the "What does it mean to me?" department. Therefore, we will take a more operational test (OT) approach to make the results match with actual experiences better. We will analyze existing vehicles to accomplish this. These are the vehicles I have chosen.

Car: This is one standard of comparison that we all have extensive experience with. I could have said "Mustang" or "Corvette" or even the **Kommandant's** "BMW". It doesn't really matter, since for this analysis we are assuming that the car is limited by speed limits and other traffic factors. While highway speed limits are typically 70 or 75 miles per hour, many years of cross-country highway driving has consistently confirmed that a better planning factor is an average speed of 50 miles per hour. This accounts for slowdowns, stops to refuel and stops to address physiological "urges". Because this analysis will be done in knots, 50 mph equates to **43 knots**. The car is also a good reference for this analysis, because the **Bearhawk** is almost exactly twice as fast as a car at freeway speed (70 mph, 61 knots).

Piper Tomahawk: This represents a "slow" airplane. I could have used a Cessna 150, but I did my initial flight training in the "Mighty Traumahawk", so I have some experiential connection with the results. I remember taking some "long" cross-countries that took a lot of time, but didn't actually go very far. I still have the performance charts for this aircraft, and looking at nominal cruise conditions of between 7500 and 9500 feet altitude, 65 per cent power, and economy mixture yields a cruise airspeed of **95 knots** true airspeed. Yes, you probably wouldn't want to take a Tomahawk or Cessna 150 all the way from here to Oshkosh, but it makes a useful comparison for short trips.

Cessna 172: The classic GA airplane. The 172 comes with a whole range of performance numbers. Engine power ranges from 145 HP in 1956 to 180 HP or



more in current models. Which to choose? On 3 August 1973 I had my “Young Eagles” flight in a 1972 Cessna 172M N20018. (Though this flight took place in Texas at Grand Prairie airport (now KGPM), that airplane is still registered to an LLC in Montana.) I still remember on that day deciding that I wanted to own a Cessna 172 Skyhawk when I grew up. That airplane had a Lycoming O-320 of 150 HP. Available performance data for that year model claims a cruise speed of 132 miles per hour (115 knots) at 9000 feet altitude and 75 percent power. I seriously doubt a normally aspirated engine could produce 75 percent power at that altitude, with my experience saying that 65 percent power would be more reasonable. Therefore we will use a cruise speed of **110 knots** for this analysis.

Bearhawk: This, of course, is the nominal case for comparison. The major reason I chose to build a Bearhawk was that I wanted a 4-place airplane, and the Bearhawk was one of the very few 4-place homebuilts available. The assumed cruise conditions are for the way I fly my airplane, at 2100 RPM and best economy mixture. With all of the fairings and wheel pants installed, continued flight test has shown standard day cruise speed to be **122 knots** true. Yep, notably slower than the **Fightin’ Skywagon**.

Another possible flight condition is to run the engine at 2400 RPM, at the cost of an extra 1.5 gallon per hour of fuel flow and more issues with engine cooling. This increases the true airspeed by 5 knots to **127 knots**.

Cessna 180: This represents the performance I had originally hoped to match. It is also comparable because it has four seats. The **Kommandant** informs me that he flight plans the **Fightin’ Skywagon** at **135 knots**.

Van’s RV-10: This was originally a non-option, as the RV-10 was not available at the time that I started building the Bearhawk. However, it does fit the mission requirement of four seats. One decision that I’m glad I never had to make was to decide between building a Bearhawk or an RV-10. My personal preference for a high wing would have favored the Bearhawk. However, would I have accepted the low wing to get the RV-10’s significantly higher cruise speed on the same engine? I choose not to make this decision because I don’t have to make that decision. Based on information from Van’s Aircraft web site, a 260 HP RV-10 at 65 percent power should have a cruise speed of **165 knots**.

The Missions

Comparisons of time en route are meaningless without an associated mission. Distances given are air distances from Rosamond Skypark (L00) to the specified airfield. In the case of the Car, the same straight line distance is assumed. Actual road distance would increase the travel time of the Car.

Ground time is added to the flight time to give a better representation of the actual mission time. Extensive experience has shown that my recorded Hobbs time is consistently about 20 minutes longer than the Foreflight predicted flight time per sortie. This time accounts for ground operations and taxi time. For missions requiring multiple sorties, additional time is included for refueling operations.

Changes in airspeed due to climbing or descending are ignored, as these make up a small part of the total mission and would not materially change the results.

No ground time is assumed for the Car, as that was accounted for in the assumed speed.

Negative variation means less time in transit. Positive variation means more time spent in transit.

Tehachapi Mountain Valley (L94): This represents the shortest practical flight, and is a route I have flown multiple times. Route distance is 17 nautical miles.

L00 – L94
17 nautical miles

Aircraft	TAS	Flight Time	Ground Time	Total Time	Variation
	knots	minutes	minutes	h:mm	minutes
Car	43	23.5	0	0:23	-4.9
Piper Tomahawk	95	10.7	20	0:30	2.4
1972 Cessna 172	110	9.3	20	0:29	0.9
Bearhawk 2100 RPM	122	8.4	20	0:28	0.0
Bearhawk 2400 RPM	127	8.0	20	0:28	-0.3
Cessna 180	135	7.6	20	0:27	-0.8
Van’s RV-10	165	6.2	20	0:26	-2.2

At this short range, time differences from differences in airspeed are insignificant. In fact, they may be even less because of the very short time spent in cruise, especially because of the 4100 foot climb and 2300 foot descent to clear the mountains. The time en route is dominated by the ground operations. At this short distance, the Car is actually the fastest means of transportation. This is even more the case when considering the time spent preflighting the airplane. My experience has consistently shown that I can get to Mountain Valley faster by car than I can by air.

Harris Ranch (308): This represents the most common cross country flights that I make, with flight times on the order of one hour each direction. Route distance is 130 nautical miles.

L00 – 308
130 nautical miles

Aircraft	TAS	Flight Time	Ground Time	Total Time	Variation
	knots	minutes	minutes	h:mm	minutes
Car	43	179.4	0	2:59	95.5
Piper Tomahawk	95	82.1	20	1:42	18.2
1972 Cessna 172	110	70.9	20	1:30	7.0
Bearhawk 2100 RPM	122	63.9	20	1:23	0.0
Bearhawk 2400 RPM	127	61.4	20	1:21	-2.5
Cessna 180	135	57.8	20	1:17	-6.2
Van's RV-10	165	47.3	20	1:07	-16.7

Because this has been shown to be representative of the most common flight range, these results are the most significant. At this range, we already see the benefit of flying over driving a car, making the trip in 1.5 hours instead of 3 hours. My fixation on the **Fightin' Skywagon** speed shows only a 6 minute difference, which means I would arrive while the **Kommandant** was still tying down his aircraft. As for the RV-10, the significantly higher speed is starting to show its effect at 17 minutes, but the distance had to be this far for that to happen. Still, 17 minutes of flying is not terribly long for a typical mission, and certainly not long enough to significantly affect the ability to complete the mission in a day.

Chandler Municipal (KCHD), Phoenix AZ: This represents as far as I can comfortably fly the Bearhawk on a single sortie. Route distance is 350 nautical miles.

L00 – KCHD
350 nautical miles

Aircraft	TAS	Flight Time	Ground Time	Total Time	Variation
	knots	minutes	minutes	h:mm	minutes
Car	43	483.0	0	8:03	290.9
Piper Tomahawk	95	221.1	20	4:01	48.9
1972 Cessna 172	110	190.9	20	3:30	18.8
Bearhawk 2100 RPM	122	172.1	20	3:12	0.0
Bearhawk 2400 RPM	127	165.4	20	3:05	-6.8
Cessna 180	135	155.6	20	2:55	-16.6
Van's RV-10	165	127.3	20	2:27	-44.9

At this distance the Bearhawk starts to show a significant benefit over the Tomahawk, and over the Cessna 172 to a lesser extent. Running the Bearhawk at 2400 RPM only reduces the flight time by 7 minutes, which is hardly significant at the cost of about 4 to 5 extra gallons burned (currently \$19 to \$24, or about \$3 per minute). The **Fightin' Skywagon** is sufficiently faster to have time to arrange the rental car before I arrive. Since a flight of this distance is likely to be one way for the day, the additional 17 minutes of flight time is not excessive to

a reasonable schedule. The extra speed of the RV-10 starts to be significant, arriving about 45 minutes earlier.

Durango CO (KDRO): This represents a two hop mission, but one I would hope to do once or twice a year. A fuel stop is made at Kingman AZ (KIGM). Twenty minutes of ground time are included for each sortie, plus an additional 20 minutes for refueling and other activities. Route distance is 537 nautical miles.

L00 – KIGM – KDRO
537 nautical miles

Aircraft	TAS	Flight Time	Ground Time	Total Time	Variation
	knots	minutes	minutes	h:mm	minutes
Car	43	741.1	0	12:21	417.0
Piper Tomahawk	95	339.2	60	6:39	75.1
1972 Cessna 172	110	292.9	60	5:52	28.8
Bearhawk 2100 RPM	122	264.1	60	5:24	0.0
Bearhawk 2400 RPM	127	253.7	60	5:13	-10.4
Cessna 180	135	238.7	60	4:58	-25.4
Van's RV-10	165	195.3	60	4:15	-68.8

The advantage of the Bearhawk over the Cessna 172 continues to be small but noticeable. The **Fightin' Skywagon** arrives just under a half hour early, but the difference between 5 and 5.5 hours in the cockpit is not that great—anything past an hour or two seems long, so what's a little more. At over an hour earlier, the faster speed of the RV-10 would be a noticeable difference in the time spent in the cockpit. The RV-10 would probably be 40 minutes earlier than shown by flying in one sortie.

Arlington TX (KGKY): This was the original design mission I had in mind when I started to build an airplane. I wanted to be able to take my family to visit my parents in Arlington TX. Fuel stops are made at Prescott AZ (KPRC), Albuquerque Double Eagle NM (KAEG), and Lubbock TX (KLBB). Twenty minutes of ground time are included for each sortie. An additional 20 minutes for each refueling and other activities, and 90 minutes are included for eating lunch and dinner. Route distance is 1073 nautical miles.

L00 – KPRC – KAEG – KLBB – KGKY
1073 nautical miles

Aircraft	TAS	Flight Time	Ground Time	Total Time	Variation
	knots	minutes	minutes	h:mm	minutes
Car	43	1480.7	0	24:40	723.0
Piper Tomahawk	95	677.7	230	15:07	150.0
1972 Cessna 172	110	585.3	230	13:35	57.6
Bearhawk 2100 RPM	122	527.7	230	12:37	0.0
Bearhawk 2400 RPM	127	506.9	230	12:16	-20.8
Cessna 180	135	476.9	230	11:46	-50.8
Van's RV-10	165	390.2	230	10:20	-137.5

This mission is long enough that the question is no longer a desire to get there quicker as much as can the mission even be done without night flying. I flew this mission in the **Fightin' Skywagon** with the **Kommandant** in July 2000. We departed at 0600 PDT (0800 CDT), and arrived at something like 1900 CDT. It was quicker than shown above because we only stopped for one meal instead of two. It was a long day, but it seemed very doable. Later I would realize that it wasn't as fatiguing for me because I didn't have the responsibility of being Pilot In Command (PIC) and it was in an airplane that I had high confidence in.

Based on this experience, and an assumption that the Bearhawk was of similar performance to the **Fightin' Skywagon**, **Tuki** and I set out to make this same trip in mid July 2011. We departed at 0600 PDT (0800 CDT) as the sun was coming up. We arrived at about 2037 CDT, just at the sun was setting, meaning we really didn't have much more time before having to fly at night. I was exhausted to the point of not feeling safe anymore. This time I had logged 10.6 hours of PIC time in one day, with turbulence, and in an airplane that I was still working a few bugs out of. At KLBB, with 2.5 hours of flying to go, I debated whether I should just stop there for the night. I didn't, but later decided that I really should have.

I came to the conclusion that the Bearhawk was not fast enough to complete that mission in one day, even on the longest day of the year, especially when I was the only qualified pilot on board. Having a second qualified pilot on board to share the duties (and with the airplane much more reliable now) might make it doable, but there would need to be a strong requirement to do that. The **Fightin' Skywagon** is only slightly more suitable for completing this mission in just one day at about one hour less time, but the likely fatigue would still make that a questionable choice. The Cessna 172 I once thought I wanted wouldn't be able to make the mission in daylight hours at all.

The RV-10 would have been much more suitable for this mission, and in fact would make it much quicker because it would probably only need to make one fuel stop, reducing the mission time to about 8 hours. Arrival would be about 1600 CDT, plenty soon to get ready for dinner.

But, alas, there are no sour grapes here. The importance of the original mission is significantly reduced, since the kids I had intended to take to see their grandparents are long since adults, and in fact have moved to Texas anyway. Only one of their four grandparents remain. As for my new kid, she's not old enough to make that trip yet, and in the meantime there's Skype. Skype didn't exist in 1996 when I started down this road, but it does now. Skype isn't exactly the same as being there in person, but you can do it far more often, and the cost (d**n near nothing) sure beats the \$800 to \$1000 avgas bill for the round trip. When the time comes to make that trip, we long ago decided that it was far less stressful and far more enjoyable to plan to do that trip in two days.

So Are You Happy With Your Airplane?

I guess I will be. Even though it wasn't as fast as I originally thought it would be (what program hasn't fallen a little short on the promised performance?), for the type of flying I do most frequently, the difference in time aloft is almost insignificant. Someone once said "If our goal is to enjoy flying, why are we in such a rush to get there?" For the less frequent but longer missions, I can account for the slightly longer flight times by adjusting the departure times.

I've wanted to do this analysis for a long time now, and I'm glad I did. This was a major step on the road to being happy with my airplane instead of feeling like it failed to meet the specification. I also know that if we ever fly somewhere together, the **Kommandant** is quite gracious to pull the throttle back and improve his gas mileage (specific range) to stay with me.

The One Saving Grace

Lest you think that I think my airplane is completely the Wolowitz of the chapter, there is one thing that it will do better than the **Fightin' Skywagon** or the **Glamorous Glasair** – Climb! Even taking measures to keep the engine from overheating, the **Combat Bearhawk** has been shown on multiple occasions to out climb both of these aircraft, and many other aircraft too. In 2009, on the way to Oshkosh, Stormy and I would get to cruising altitude well before the **Fightin' Skywagon**. When the **Fightin' Skywagon** would get to altitude, copilot **Doolittle** would call for the **Combat Bearhawk** to execute the **Octafluger**, a series of S-turns to allow them to close up the formation.

Yes, they will eventually get to altitude and eventually pass me and leave me behind, but that's okay. At least my airplane does one thing best!

- Russ Erb

(Besides, that just means they get to get there first and make the tie-down and rental car arrangements)



Web Site Update

 Just a reminder that the EAA Chapter 1000 Web Site is hosted courtesy of Quantum Networking Solutions, Inc. You can find out more about Qnet at <http://www.qnet.com> or at 661-538-2028.

Chapter 1000 Calendar

Feb 14: CNX EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Feb 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Mar 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Mar 21: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Apr 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Apr TBD: EAA Chapter 1000 Monthly Meeting, Semi-Annual Cookout with the Cadets (661) 609-0942

Late Apr: Annual Adelanto (52CL) Fly-In. Let's all go see Hellmuth! (661) 256-3806

May 9: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

May 16: No Monthly Meeting! Go to Airport Barbecue instead

May 19-21: Flabob's DC-3/C-47 Fly-In. <http://www.flabobdc3flyin.com>

May 20: Twenty Sixth Annual Project Police Airport Barbecue, Rosamond Skypark (L00), Rosamond CA. (661) 609-0942

Jun 13: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Jun 20: EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Jul 11: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., El Indio Restaurant, Rosamond Skypark, Rosamond CA. (661) 609-0942

Jul 18: (?) EAA Chapter 1000 Monthly Meeting, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

To join Chapter 1000, send your name, address, EAA number, and \$20 dues to: EAA Chapter 1000, George Gennuso, 3119 Lennox Ct, Palmdale CA 93551. Membership in National EAA (\$40, 1-800-843-3612) is required.

Contact our officers by e-mail:

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Inputs for the newsletter or any comments can be sent to Russ Erb, 661-256-3806, by e-mail to erbman@pobox.com

From the Project Police legal section: As you probably suspected, contents of The Leading Edge are the viewpoints of the authors. No claim is made and no liability is assumed, expressed or implied as to the technical accuracy or safety of the material presented. The viewpoints expressed are not necessarily those of Chapter 1000 or the Experimental Aircraft Association. Project Police reports are printed as they are received, with no attempt made to determine if they contain the minimum daily allowance of truth. So there!

**THE LEADING EDGE
MUROC EAA CHAPTER 1000 NEWSLETTER**

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<http://www.eaa1000.av.org>**

ADDRESS SERVICE REQUESTED

**THIS MONTH'S HIGHLIGHTS:
REGULAR MEETING 21 FEB @ TPS
PAY YOUR DUES!
KOMMANDANT CONSIDERS GROSS WEIGHT
HOW FAST IS FAST?**

