



# THE LEADING EDGE

## NEWSLETTER OF MUROC EAA CHAPTER 1000

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

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

**October 2005**

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:



## What Was That Thing Falling Out Of The Sky?

Or

## You Don't Need Wings To Fly

**Saturday, 18 October 2005**

**1700 hrs (5:00 PM Civilian Time)**

**USAF Test Pilot School Auditorium**

**Edwards AFB, CA**

I always try to look out for my fellow *Project Policemen*. And sometimes looking out for you means seeing to it that you are well informed and know your aviation history. A couple of months ago I ran into **Wen** and **Joanne Painter** at Mojave Airport. We were talking and I asked **Wen** what he was doing over at the National Test Pilot School. He gave me that steely eyed stare and said "Wingless Flight."

Mmmm...now that seems like it would be a good topic for our next meeting so I asked **Wen** if he would come out to TPS and tell us about wingless flight. He said he would, so that's the program.

After a little more conversation I found that **Wen** is going to talk about wingless flight starting with the Wright brothers and moving through history ending with the Space Shuttle. Well I guess "lifting body" is a little more

accurate than "wingless flight", because that thing sticking out of the side of the shuttle kinda looks like a wing to me.

Anyway, this is shaping up to be an outstanding meeting and I think we'll all learn something too. Now, who says all we do is have fun? So, I expect to see everyone at the meeting, and remember we'll have chips, dips and beverages. Come and enjoy the great conversation and once again we'll finish off at the BK Lounge where we will once again solve the problems of the world. Maybe someone will take notes for a change.

### Last Month's Meeting

#### EAA Chapter 1000

Lancaster Aerospace Walk of Honor

Boeing Plaza, Lancaster CA

24 September 2005

**Gary Aldrich**, Presiding

Muster at the Fifth Annual **Lancaster Aerospace Walk of Honor** (AWOH) was held in lieu of the regular September meeting, marking the fifth appearance of EAA Chapter 1000. This year was a "passing of an era" of sorts. Followers of this column will recall the massive undertaking of designing and constructing the wooden fortress that was the original display booth, and affectionately known as **Fort Wagner** (after the designer and project manager **Charlie Wagner**). However, just like our chapter members, it seemed to gain weight each year, or we just grew more tired of hauling it around. The planning and logistics to deploy it required at least 2 days each way, and a number of six packs. It gave way a few years ago to the "EZ-Up" canopy which has served us well. But this year, we chose to pay the City of Lancaster a pittance to provide the booth and the full set-up took less than half an hour, including unloading **Russ Erb's Bearhawk** fuselage, making its fourth consecutive appearance at the AWOH. (*Fifth consecutive appearance for the tail surfaces.*) I have a pool going on how many more years will pass before Russ gets it flying. He claims he could have it in the air before next year, but is currently waiting on "fiscal year funding" issues to be resolved. Pleased with our rapid setup performance, we immediately departed the fix for **Katzenjammer's** to have breakfast with the AWOH Mega-Kahuna **Anne Aldrich** (the

## THE LEADING EDGE

**Project Police** get celebrity status treatment most everywhere they go.)

Display of the **Bearhawk** proved a winner as always, drawing admiring glances from young and old alike, and prompting only two inquiries of the PVC mock-up of the exhaust system (*we expected many more*).

**Kommandant Aldrich** ably stamped the sheet that each youngster brought to the booth which could later be turned in for a treat if fully stamped by all booths. **Gary** used the genuine government (city) issued stamp, a “**Teddy Bear**”, which somehow became his new call-sign. **Gary** was able to finagle the dumping of a box of old 1980’s vintage EAA Sport Aviation magazines by requiring all visiting youth to take at least two issues each. He explained that each magazine had great pictures of airplanes, but that he himself only read the articles.



The Chapter 1000 booth was honored by visits from **James Doolittle III AND IV** (call sign “Quad”), **Bob Hoey** (who did his annual **Bearhawk** inspection) **Fitz Fulton**, **Gordon Fullerton**, and **Jonna Doolittle Hoppes** who was signing her recently published book “**Calculated Risk**” about her grandfather **Jimmy Doolittle**.

**Vice Kommandant “Knife” Gennuso** finally made an appearance about half an hour before quitting time, claiming he was delayed by having to keep America safe for democracy (he and his son put the finishing touches on his Eagle Scout project). He promptly departed the booth to inspect the other booths, thus actually logging no significant time in the Chapter booth. **Erbman** had arranged for him to speak to **Jonna** about a future chapter speaking engagement. **Knife** then further redeemed himself by chatting with **BG Bob Cardenas** of flying wing fame, and extracted a potential guest speakerage from him in the future.

Two o’clock rolled around, the official quitting time, and the Kommandant declared “**Victory**” and ordered the plug pulled. The booth was quickly cleared, the **Bearhawk** loaded on its trailer, and the sun set on another successful Aerospace Walk of Honor event.

- Kent “Cobra” Troxel  
Secretary



## Kommandant’s Korner

There seems to be a glimmer of light at the end of the “AuSepTober” tunnel. Yes, it’s that time of year when the months all seem to run together and personal and professional lives are, to use a radar analogy, in “high PRF (pulse repetition frequency)”.



A large milestone of the mega-month passed yesterday with another successful **Aviation Street Faire** experience on the boulevard in Lancaster. I’m sure **Cobra Troxel** will regale you with all the gory details in his report; but suffice it to say that we declared “Victory!” once more. Sadly, this was the last year for “**Bearhawk** on the Boulevard” as we all expect and hope that **NLE Erbman** will be finishing up the final touches in a hangar somewhere by the time next year’s event rolls around. Pieces of the fledgling “**Hawk** have been on display for the assembled masses since we responded to the call for the inaugural Street Faire in 2001...just days after the infamous attack. Chapter 1000 set the bar high with an interesting, professional display of sport aviation coupled with charming and entertaining aviators to answer the questions of young and old alike. A committee comprised of...well...*me* (*tops in Chapter efficiency, eh?*) has decided that Chapter 1000’s “work is done here”...and we will move on to other endeavours. I don’t want to give away too much detail on future plans, but there may be some deployments in the works, as well as an important **Young Eagles** event in December. **Watch this space** for details on these events.

This last week I had an opportunity, at the taxpayer’s expense, of re-visiting the “**National Museum of the United States Air Force**”. This world-class outfit, which used to be called simply “**The Air Force Museum**” has grown to rival any collection of military aviation artifacts in the world. I first visited the Museum, located in Area B of Wright-Patterson AFB in Ohio, on an AFOTC field trip in 1970. At the time, the collection of historic aircraft was largely kept outside in the harsh Ohio winter weather. There was one very large hangar that housed a B-36 as the centerpiece and the surviving XB-70 Valkyrie had just been ferried from its test program at Edwards.

Over the years the collection...and the facilities...has grown and become more professional. The current facility encompasses three huge, interconnected hangars, an IMAX® theater, a cafeteria, and other trappings of a world-class museum (and yes, there is a gift shop). There are still aircraft parked outside, and others in restoration facilities elsewhere on the base, but the vast majority of the collection is tastefully and chronologically displayed in air conditioned comfort. Interestingly, the XB-70, that I got to walk around in a restoration hangar, is still not on display 35 years later (*per the web site* (<http://www.wpafb.af.mil/museum>) *the XB-70 is in the R&D Hangar that is accessible by shuttle bus from the main museum, however, it also says that listed aircraft may not be on display...also in that hangar is Opus’ favorite airplane, the Lockheed Martin-Boeing RQ-3A*



*"DarkStar", aka "Dark Splat")*. However, that should not dissuade you from visiting this fantastic view of our aviation past. I suspect our NLE will have a few pictures of my latest trip displayed somewhere in this or later issues of the 'Edge. *(gotta fill the pages somehow)* He may even use one of the more obscure exhibits for his famous "name the plane" contest *(turn the page...)*. As a "Flight Test Fanatic", the opportunity to see many one-of-a-kind (and formerly highly classified) research aircraft was a real treat...especially since I know many of the pioneering aircrew that flew these weird aircraft. Don't let me hear that any of you passed anywhere near Dayton without taking in this experience!

Fly safe and Check Six,

**- Gary Aldrich**  
Kommanding



**Icarus—"To Infinity and Beyond! Or At Least Sicily!"**



**Curtiss OX-5, with a TBO of about 2000...minutes...**



**Curtiss AT-9 "Jeep" – there's a reason it's very rare**



**"FAT? Who're you calling FAT?"**



**"We don't need no steenkin' B-4 stands"**



Beaver on floats...uh, I mean Beaver on wheels...uh, no,  
I mean Beaver on skis...



So that's where our F-117 disappeared to...

### How To Groundloop Your Taildragger

*(Dug up somewhere by PPO Miles Bowen and forwarded for your enjoyment—you nosedragger pilots just don't know what fun you're missing...)*

Judging by how frequently it is performed, the Groundloop is indeed a popular maneuver. The Groundloop is an extreme low-level figure that is highly acrobatic in nature, which may be executed in many exciting variations. It is customarily performed as the last figure in a sequence, but I have seen the Groundloop attempted as a preliminary or warm-up maneuver.

It is rarely scored however, because it is most often performed out of the Judges' line-of-sight. Also, the Groundloop is categorized as a surprise maneuver, and therefore nobody is really prepared when it is executed.

In fact, the figure is not considered genuine unless Judges, spectators and the pilot-in-command are all surprised! The many interesting and dynamic variations do not have a Degree of Difficulty or "K" attached, but rather are rated on the International HC\* scale. (\*Holy Cow)

### Historical Perspective

The Groundloop is one of the earliest recorded aerobatic figures. It was performed on virtually all of the taildraggers dating back to Aviation's infancy. The maneuver really came into its own during the Golden Era of the Groundloop which was when the cross-wind landing was invented. Previous to this, circular landing fields were the norm and the pilot simply eye-balled the windsock, and landed into wind. However, it was soon discovered that a short, straight landing strip could be plowed out, and now there would be lots of room for hangars, clubhouse, and an expansive cocktail lounge. Once everyone saw how much fun this new land-use concept generated, it was adopted internationally. The daily Groundloop displays were an instant hit, and helped cast the new idea in tarmac.

### Analysis

Most Groundloops are weathercocking related phenomena. This means that at least one main wheel must be touching the earth, and a wind is blowing. Traditionally, the maneuver is started in a cross-wind; during the landing roll-out the tail is allowed to be blown down-wind. At this point there are a variety of options that can be exercised depending on your inputs, and the maneuver can take off in almost any direction, and finish in a variety of attitudes. Groundloops that occur under calm conditions are more rare, and require vigorous control inputs, so you really have to work at it to get a decent one.

Groundloops can be generated anywhere from 5MPH to flying speed. When executed at high speed, the figure covers more territory and generally spawns the most interesting variations. High-wing taildraggers probably Groundloop the best because the upwind wing is more exposed to the breeze. The high-wing also enjoys a longer arm to really accelerate things once the maneuver starts. If the airplane is designed with the wheels forming a small triangle (short-coupled), and in the hands of the right pilot, this could be a Groundlooping champion.



### Essential Background Knowledge

Avoid the study of the following subjects: a) Cross-wind Landings and Take-offs. b) Ground-Handling in winds.

Avoid seeking instruction on these subjects, for it will greatly reduce your chances of producing a truly World-Class Groundloop. Also, you might want to have a good line ready in case someone raises one of these subjects in



conversation: "Cross-wind Landings, heck, wasn't that about lesson 5 on your Private License? I'm way beyond that.

### Preparation

To be successful, we must prepare both pilot and aircraft.

### Pilot

To perform good Groundloops, the best preparation is no preparation.

### Aircraft

The aircraft can be prepared in a variety of ways to ensure consistently good Groundloops. First of all, the main wheels should be shimmed to a toe-in condition. If the wheels are adjusted to track straight ahead or are shimmed slightly toe-out, the tracking will be too stable to assist your attempts at Groundlooping. Keep the tire pressures different from one another. If you know the direction of the cross-wind, reduce the pressure on the up-wind tire before going flying. And remember, it isn't necessary to change the tires until you can see the second ply of fabric showing; a blow-out can be the start of a dazzling Groundloop. Avoid the hassle of taking off those troublesome wheel-pants by putting a drop of Loc-tite on the screws. Now you have a good excuse not to inspect the brakes. So, when the brake fails on one side or the caliper pinches through a rusted disc, you will enjoy a splendid groundloop.

At the back end, you can start by loosening the fitting that holds the tail-wheel spring to the fuselage. Just back the nuts off a few turns. Also back off the nut that attaches the tail-wheel casting to the spring. Now, slack off the steering springs a couple of links so the chains sag. And while you're at it, cut off that lock wire that some conscientious Engineer installed in case the chains break. From time to time they break on landing and produce a thrilling, and rakish Cramer-like lurch. Fantastic! These simple mods will produce a delightfully loose rear-end that feels like it's on ball-bearings.



The little tail-wheel is best left alone; over time it becomes worn into an interesting cone-shape by the effects of slipstream, P-factor and gyroscopic effect. These left-turning forces create more wear on the starboard side of the tire, and soon you have a beautifully unstable little demon back there to really help you out.

Install the push-to-talk switch in a remote area of the cockpit. When the tower talks to you on the roll-out, you can look down into the cockpit to locate the button, and when you look up, you may be treated to the wonderful green-and-blue kaleidoscope of rotation about the vertical axis.

### Technique (How-To)

Once the pilot and aircraft are prepared, it's a little like shooting fish in a barrel; there's really nothing to it. There are several things you can do to get the Groundloop going, but really the best thing to do is nothing. Just let it happen. If you are landing or fast-taxiing in a cross-wind and you want a Groundloop... you guessed it- do nothing.

Taxi with abandon. As a pilot, you are a free-spirited individual, and this can be best displayed by a carefree jaunt down the taxiway. Just let go of the stick and use the hands-free time to organize your maps and sequence cards. If the tail-wheel comes off the ground, you're going a little fast. Maybe you'll want to use the time to put on your seatbelt, polish the inside of the canopy, re-tie your shoelaces or perhaps light up a smoke. Taildraggers have the right-of-way, so you won't have to stop suddenly.

When cleared for take-off, start bringing the power up as you swing out on to the runway. Of course you'll want to shove the stick forward quickly to get that tail up (you can't get it up too soon). If the plane will fly at 50, hold it on until 65. This technique spreads out the landing gear and brushes off some rubber, but everybody does it and it looks cool. If you get rolling quickly, any cross-wind won't matter. Now rotate as you would a 767. Haul straight back and blaze into the blue.

On the approach, keep it low and fast. If the airplane lands at 50, cross the fence at 100. It's best not to have a planned touchdown point because that can interfere with the free-spirited nature of the flying event. Start fanning the rudders through 500 feet, and keep it going until you've cleared the runway. The fanning technique is to let the airplane know who's boss. Get the plane down to the runway as soon as possible, and force it to land with plenty of forward stick. The fast-landing method is good for all weather conditions, especially quartering tail-winds. Once the plane is firmly on the ground, let go of the stick, but keep fanning the rudder to cool the tail-wheel assembly. Taxi in as you taxied out.



### Variations

#### 1. 45-Degree Overland Express.

This one is best done at about 40 MPH. The airplane is allowed to weathercock slightly, the upwind wing and wheel are allowed to rise about 30 degrees and the plane swings into wind. At 45 degrees off the runway heading, sharp downwind brake, full aft stick and aileron into wind are added to stop the Groundloop. The plane is now headed off overland. This is useful for taking a short-cut to the washrooms after a long flight.

#### 2. 90-Degree Quick Turn with Prop Curl.

Use the same technique as above, except at about 20 MPH. When you stomp on the downwind brake, also shove the stick forward. Even though you are traveling slower, the gyroscopic effect of shoving the stick forward will give you that extra 45 degrees of rotation. The tail will rise briskly. As soon as the prop touches the runway, pull hard back on the stick and apply both brakes. This was how the original Q-Tip Propeller was invented. If you've done it just right, you'll probably have a much more efficient prop.

The Prop Curl can also be done straight ahead. Taxi at about 10 MPH while tucking in your shirt or cleaning your sunglasses. Keep your hands off the stick and slam on the brakes. Voila! Also try this while maneuvering the tail-wheel over an obstacle. For a more dramatic Curl, hold the stick forward and add a burst of power.

#### 3. Pitts Special Twin Arcs.

Start the Groundloop from the roll-out at about 25 MPH. Remove all cross-wind inputs and allow the airplane to weathercock. Move the stick forward to at least neutral to lighten the tail-wheel and reduce its directional control. The little biplane will rise up on the downwind wheel and begin a concise pirouette. The downwind wing-tip will hit the runway and begin scribing an arc of red butyrate, Dacron and plywood. Without hesitation, slam in full upwind aileron, as if to attempt to lift the lower wing. The downwind aileron will shoot down and describe a beautiful red arc parallel to that made by the wing-tip. Pull the stick full back, push full downwind brake with full rudder and a burst of power to erect the plane. These little red arcs are very artistic and will attract a good crowd in the evening following the days flying.

#### 4. 180-Degree Pirouette with back-track

This one is best attempted in a light high-wing with narrow bungee landing gear, a Cub will do. The maneuver works best in a quartering tail-wind. This figure looks difficult, but is really pretty simple. It works best if the pilot does not interfere.

Get the weather-cocking started in the usual manner. Move aileron out-of-wind and push the stick forward to get weight off the tail. 20 MPH is fine. As the up-wind wing rises, the center of gravity swings as a pendulum toward the lower wing. About the time the down-going wing smacks the runway, the center of gravity will have swung to the outside of the downwind wheel. Apply this brake hard. Now it's as if you had two upwind wheels because the center of gravity has migrated outside via centrifugal force. So now it wouldn't matter which brake you applied, the effect would be to increase the rotation of the Groundloop.

The wing-tip smacks off the tarmac, the brake completed a full 180-degree turn, and fast-taxi back to the button.

#### 5. Groundloop with Bunt.

This is certainly one of the more dramatic figures in the Groundloop family. You'll want to be traveling a little faster to get this one. Say 35 MPH. The figure should start slowly then get faster and tighter as rotation sets in. A dry runway is necessary, and a quartering tail-wind from the left is best. Once rotation starts, shove in full down-wind stick and full forward elevator. This will really tighten up the rotation. Now add full brakes and full power. The tail will shoot upwards and the airplane will do a kind of shoulder roll right on to its back. This is really low-level inverted, and you should ensure that your belts are very tight. This figure should be reserved for the last flight of the day.



### Conclusion

The Groundloop has been around for almost a century and I'm sure it will be with us forever. And to keep it alive, all we have to do is be a little complacent, a little cock-sure and in a little hurry. Most important, one needs a thorough misunderstanding of weathercocking, cross-wind take-offs, landings and ground-handling. Sounds pretty easy to me.

Enjoy your spin-around!

*(If anyone knows who the real author of this piece is, let us know and we'll attribute it.)*

### Project Police Aircraft Spotters Quiz

Last month **Evil Editor Zurg** asked you the question:

**What was the first aircraft to be restored, and who did the restoration?**

For purposes of this quiz, a restoration was not just rebuilding a crashed airplane. Restoration was defined as rebuilding and flying an airplane that had been in a non-flyable condition or storage for an extended period of time (i.e. a year or more). Also, the restoration was done by someone different than the original builder.

The **Kommandant** claimed he knew the answer, but never bothered to send it in. He should, since he read the book *Unlocking The Sky* (provided by **PPO Leigh Kelly**, written by Seth Shulman, available on Amazon.com and highly recommended for **PPOs**) that I derived the question from right before I did. Then again, **Leigh** didn't submit an answer either...

The sole **PPO** who took the extra step to actually submit a response was **Murry Rozansky**, who sent in "Hi Russ, a guess. Langley "Aerodrome" restored by Glenn Curtiss." which was, of course, correct.

Glenn Curtiss was asked by the Smithsonian Institution to restore Langley's Aerodrome (which had been stored in pieces after the second botched attempt at flight). While they claimed that they merely wanted to see if the Aerodrome would have flown had it been properly launched, the Wright Brothers interpreted it as an attempt to discredit them and their patents. While Curtiss certainly had an interest in weakening the Wright's patents, he got the job (in spite of the conflict of interest) because he and the Wrights were about the only people in the country at the time that knew anything about building airplanes (and the Wrights certainly weren't going to take the job).

What I didn't know was that Charles Manley, the engine's original builder, was part of the team. While the engine had produced 50 horsepower in 1903, the best they could get out of it during the restoration was about 40 horsepower.

*Unlocking The Sky* is an outstanding book and highly recommended. Most accounts of the Wright Brothers stop around 17 December 1903. This book covers what came after that. Somewhere around 1905, after figuring out how to make their aerial machine turn, the Wrights pretty much declared that development of the airplane was completed, acquired a very broad patent, and then sat back and expected to get rich as the royalties from all of the airplane builders started rolling in. Curiously, they generally refused to fly their airplanes in public, expecting everyone to just believe them without proof. Well, these plans for monopoly worked about as well for the Wrights as they did for George Selden and his patent on the automobile when Henry Ford got a hold of it.

Enough of that nonsense! On to other nonsense! **Evil Editor Zurg** in cooperation with **The Kommandant**, challenges you to identify the airplane in these pictures.



And, no, "Good ol' 622" is not an acceptable answer.

Your job is to simply identify the aircraft shown above and send that information to [erbman@pobox.com](mailto:erbman@pobox.com) or to the editor's address seen on the last page of this newsletter. Include any other information you know. Links to web sites with more info are a plus. Next month we'll tell you who (if anyone) was correct.

### Web Site Update

As of 28 September 2005 (*we had to move up the editorial process this month*), the hit counter stood at **101664**, for a hit rate of about 24 hits/day for the last month.



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**

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

Nov 1: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Nov 8: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

**Nov 15: EAA Chapter 1000 Monthly Meeting**, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Dec 6: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Dec 13: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

**Dec 20: EAA Chapter 1000 Monthly Meeting**, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. Watch for change of venue. (661) 609-0942

Jan 3: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Jan 10: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, Rosamond CA. (661) 609-0942

**Jan 17: EAA Chapter 1000 Monthly Meeting**, 5:00 p.m., Edwards AFB. USAF Test Pilot School, Scobee Auditorium. (661) 609-0942

Feb 7: EAA Chapter 49 Monthly Meeting, 7:30 p.m., General William J. Fox Field, Lancaster, CA. (661) 948-0646

Feb 14: EAA Chapter 1000 Board of Directors Meeting, 5:00 p.m., High Cay, 4431 Knox Ave, 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 21: 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, Doug Dodson, 4431 Knox Ave, Rosamond CA 93560-6428. Membership in National EAA (\$40, 1-800-843-3612) is required.

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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](mailto:erbman@pobox.com)

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**THE LEADING EDGE****MUROC EAA CHAPTER 1000 NEWSLETTER****C/O Russ Erb****3435 Desert Cloud Ave****Rosamond CA 93560-7692****<http://www.eaa1000.av.org>****ADDRESS CORRECTION REQUESTED****THIS MONTH'S HIGHLIGHTS:****REGULAR MEETING 18 OCT AT TPS****AWOH REPORT—WHERE WERE YOU?****KOMMANDANT GOES TO AF MUSEUM****GROUND LOOPING INSTRUCTIONS****The Leader In Recreational Aviation**