

# Penelope's Page



[www.girlswithwings.com](http://www.girlswithwings.com)

Girls with Wings

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dreams take flight...



# Happy New Year!

Happy New Year everyone!

Not only is it a new year, but it is also the **SECOND ANNIVERSARY** of *Penelope's Page!*

That's right - we've turned 2 and, wow, have we covered a lot of ground in these past two years. We've met a lot of intriguing and pioneering women, along with getting our ground school knowledge up to speed in weather, science and the phonetic alphabet.

We've been keeping up with NASA, creating cool crafts, and learning about planes and places to visit them and flying lessons in between it all.

We are *thrilled* to have you come along as we start this New Year - a year of "Adventures." And, we start this one off right with "Ultralights." Don't know what one is? Well, you will, by the time you've finished reading this edition *and* after meeting **Arty**, a pioneering aviatrix who is the **"Ultralight Adventurer."**

Grab your gear and come along for this 2012 kick-off of high flying adventure with Penelope's Page!

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*Life is either a daring adventure  
or nothing at all.*

*~ Helen Keller*

## Arty Trost Flying Adventurer!



Penelope's Page is proud to introduce Arty, an ultralight pilot and pioneer who is the only female long-distance ultralight pilot in the United States.

Arty is a Girls With Wings role model, Mom, and oh, did we mention motivational speaker? She also has at her Oregon home what she calls an "old MacDonald" farm, to include llamas! Arty is someone anyone would love to meet and hang out with and this is your chance. So please join Penelope Page as we had the chance to interview this amazing woman. ★

### So, what's an ultralight?



Before we meet Arty, we thought we'd explore exactly what an ultralight is. According to [Wikipedia](#), the United States [FAA](#)'s definition of an ultralight is significantly different from that in most other countries and can lead to some confusion when discussing the topic. The governing regulation in the [United States](#) is [FAR 103 Ultralight Vehicles](#), which specifies a powered "ultralight" as a single seat vehicle of less than 5 US gallons (19 L) fuel capacity, empty weight of less than 254 pounds (115 kg), a top speed of 55 knots (102 km/h or 64 mph), and a maximum [stall speed](#) not exceeding 24 knots (45 km/h or 27.6 mph). Restrictions include flying only during daylight hours and over unpopulated areas. Unpowered "ultralights" ([hang gliders](#), [paragliders](#), etc.) are limited to a weight of 155 lb (70 kg) with extra weight allowed for amphibious landing gear and ballistic parachute systems.

In 2004 the FAA introduced the "[Light-sport aircraft](#)" category, which resembles some other countries' microlight categories.

In the United States no license or training is required for ultralights but training is highly advisable. For light-sport aircraft a [sport pilot certificate](#) is required.

For more information click on [All About Ultralights](#) - a great resource that has even more links to this exciting field of aviation! ★

### Now, let's talk to Arty . . .

**Penelope:** When did you first discover your interest in aviation?

**Arty:** I always loved to fly but did not think I could afford my own airplane. My friend had an ultralight and offered me a flight. After five minutes and a lot of shrieking I said, "I want to take lessons!" By the next Sunday I had and in May of 1989 I soloed. I am the only one in my family to fly ultra lights. The fastest I have ever gone is 116 mph (miles per hour).

**Penelope:** What was your flight training like for ultralights?

**Arty:** I took my training in Oregon where I live; however we have a lot of rain so air instruction took a lot longer than normal. Ground school was a simplified version of the Private pilot flight school; aerodynamics, some regulations, and simplified airspace as we are not allowed in all airspaces. And, of course, navigation.

Arty's interview is continued on page 3.

**Penelope:** Did you experience any setbacks or have any naysayers?

**Arty:** Well, my major problem in training was weather during training and my schedule. I also would get irritated with those who would say I could not do it - I had to go do it. When I got home the day I had my first ride I told my husband, "I have my first flight training this Sunday". He said, "What?" And I said, "I am starting ultralight training this Sunday," and he again said "What? You signed up?" Even though he knows my nature it still surprised him that I made up my mind that quick and had made my plans to do it.

**Penelope:** Does the light sport folks have a mentoring program like the EAA (Young Eagles)?

**Arty:** Not formally due to single seating. High end and instruction aircraft do have two-seaters. We encourage young folks to give it a try.

**Penelope:** What is your life motto or quote or verse you use?

**Arty:** "You're never too old to go for the bold!"

**Penelope:** What is your most memorable adventure - good or bad - and lessons you learned from it?

**Arty:** It was my flight to Florida from Oregon. So many said I can't fly that far in an ultralight – it's dangerous because you are a woman - but I had a friend I was to fly with but he got delayed. He told me to press on from Oregon down the west coast and he would meet me the next stop. So, I went by myself. Then he got delayed again. Five days later, in Southern California, he still was not there and told me to start heading east (see the chart on page 5 and imagine yourself as Arty!) Well, seven days later he finally caught up to me in Phoenix, AZ.

The most negative adventure was this year when going to AirVenture (Oshkosh) and my engine quit. I tried a restart twice and then had to plan a landing (in a field).

I flipped my aircraft, but only had minor damage.

And, what did I learn? I was already a cautious pilot and religious about being careful - I follow major highways and carefully planned my route so anyone could find me if I went down. I always planned it near a highway and never 100 yards from it - which is what I did prior to this crash so it was not a long wait for rescue.

**Penelope:** What is your advice to these young women seeking a possible career in aviation?

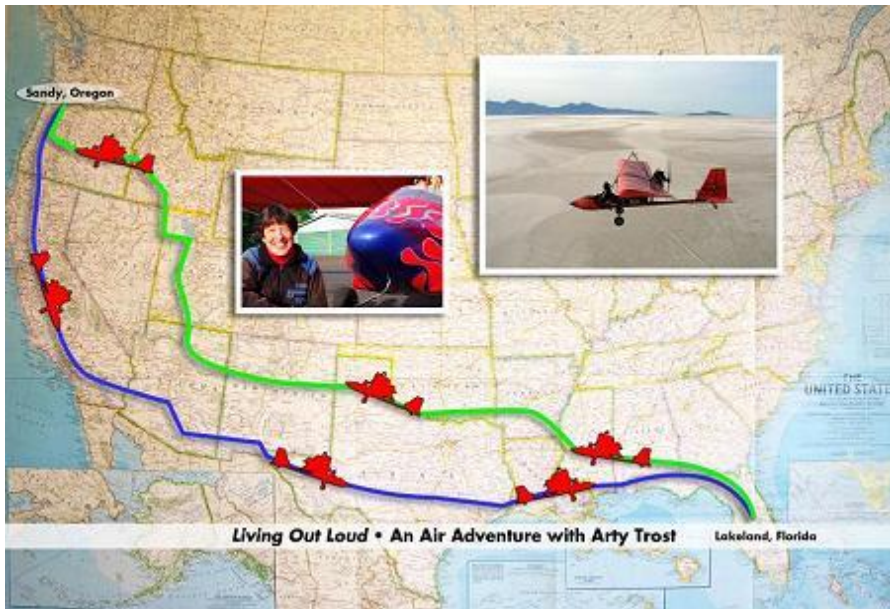
**Arty:** Stretch your boundaries carefully and with practice. "Believe your heart and soul to do anything you want. Do careful risk taking."

Finally **Penelope** says: "Not all risks are worth taking, but those that are will last a lifetime and lead to adventure you may have otherwise not known". Talk to your mom and dad more about what that means for you as you go through your life! ★

From Arty's mentor page on the  
Girls With Wings website:

In 1997, I got the crazy idea that I wanted to fly my Maxair Drifter to Sun 'n Fun – the 2nd largest airshow in North America. I live in Sandy, Oregon and Sun 'n Fun is in central Florida. It seemed impossible. But that dream took hold and wouldn't let go. And finally, twelve years later - in 2009 - I did it! It took me seven weeks to make the round trip flight, and I flew over 7,500 miles. It was truly the adventure of a lifetime. I strapped all my camping gear onto the Drifter and took off. There were lots of adventures along the way. If you want to read my blog about that flight, go to [www.LessonsFromTheEdge.com/uladventure2009.htm](http://www.LessonsFromTheEdge.com/uladventure2009.htm) ★

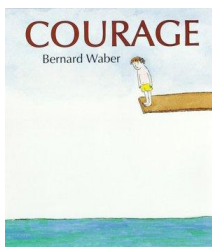
"You're never too old to  
go for the bold!"



### Arty's route from Oregon to Florida

She flew 7500 miles roundtrip in seven weeks on this trip. Can you name all the states she flew through? (Check your answers on page 11.)

*Pictured below –*  
Arty flying over the Grand Canyon



### Recommended Reading

Go to your local library or bookstore and check out this book Arty recommends:

"This charming book for children talks about many kinds of courage – 'awesome kinds and everyday kinds' - all the way from tasting a vegetable before making a face to holding on to your dream." *Courage* by Bernard Waber, Bernard Waber (Illustrator)

## Current Events

Date	Event
January 14, 2012 10 a.m.	<a href="#">"Fly Marines! The Centennial of Marine Corps Aviation: 1912 – 2012"</a> Gallery 211 - Flight and the Arts National Mall Building Smithsonian National Air & Space Museum, Washington, D.C. Free
January 14, 2012 11:45 a.m.	<a href="#">Hiller Aviation Museum</a> – San Carlos, CA Girl Scout/Experimental Aircraft Builder Gail Turner Bauer-first woman to build her own airplane and complete a transcontinental flight in it. Girl Scouts in uniform get in free!
January 19 – 22, 2012	<a href="#">Havasu Island Balloon Festival and Fair</a> – Lake Havasu City, AZ Go up in a tethered balloon for just \$15! Kids 12 and under get into the show free.
January 19 – 22, 2012	<a href="#">U.S. Sport Aviation Expo-Light Sport Aviation Show!</a> – Sebring, FL Largest in U.S. Exhibitors from all over the world. Check out some of the aircraft discussed in this Page.
February 11 – 14, 2012	<a href="#">Heli-Expo 2012!</a> – Dallas, TX Dallas Convention Center - The world's largest trade show dedicated to the international helicopter community.

## Let's Talk Weather!

### Fronts for Everyone

~by Erin Willison

If you've ever heard someone say the word "occluded", your first instinct might be to say "Bless you" since it probably sounds like that person sneezed. An occlusion, though, is actually a type of front that can combine the weather characteristics of a warm front and cold front.

Last time, we talked about warm air and cold air masses, and fronts as being the boundary between them. So, let's see what type of weather we can find along a warm front, a cold front, and also the 2 other types of fronts: occluded fronts, and stationary fronts.

The types of clouds, temperatures, and wind directions are all important factors in figuring out what kind of front you have. Wind direction changes as the front passes.

#### WARM FRONT:

A warm front is where warm air overtakes cold air and gradually pushes that cold air out of the way. Often times, warm air is very moist. Take a look at this table to see what weather we might find with a warm front:

	<b>Before the WARM Front Passes</b>	<b>While Passing</b>	<b>After Passing</b>
<b>Wind Direction</b>	South-southeast	Variable	South-southwest
<b>Temperature</b>	Cool or cold, but slowly warming up	Warming	Warming, then staying steady
<b>Types of Clouds</b>	Cirrus, Cirrostratus, Altostratus, Nimbostratus, Stratus & Fog—Cumulonimbus in Summer	Stratus-type	Clearing with scattered stratocumulus—occasionally Cumulonimbus in Summer
<b>Precipitation</b>	Light to moderate rain, snow, sleet, or drizzle	Drizzle or no precipitation	Usually no precipitation, but sometimes light rain or showers
<b>Visibility</b>	Poor	Poor, but improving	Better, but still hazy

In the March 2011 Edition of Penelope's page, we talked a little bit about the different names of the clouds and what they look like. See if you can remember what cirrostratus clouds or nimbostratus clouds might look like!

Looking at the table above, you can see that visibility is not very good during a warm front. This means that it is hard to see long distances in front of you. As a pilot, this is important to know because in poor visibility, it is more difficult to see mountains, other tall objects, or even the ground.

**COLD FRONT:**

A cold front is where cold air overtakes warm air and pushes it out of the way like a bulldozer. Cold air stays low to the ground and moves faster than warm air, so the rate that the warm air gets pushed out of the way is much quicker and can lead to unstable air. Typically, cold fronts move at 25-30 miles per hour, but they have been reported to move as fast as 60 miles per hour! What kind of weather can we expect to see with a cold front?

	Before the COLD Front Passes	While Passing	After Passing
Wind Direction	South-southwest	Gusty, changing directions	West-northwest
Temperature	Warm	Sudden drop	Steadily dropping
Types of Clouds	Cirrus, Cirrostratus, Cumulonimbus	Cumulonimbus	Cumulus
Precipitation	Short period of showers	Heavy rains, sometimes with thunder, lightening, and hail	Showers, then clearing
Visibility	Good, but decreasing	Poor, but steadily improving	Good, except in showers

Depending on the strength of the cold front, there can also be thunderstorms, or even tornadoes. The visibility is often better than with a warm front. But, if you fly an airplane under the clouds, the air will likely be more turbulent.

Now, what about a stationary front and an occluded front?

**STATIONARY FRONT:**

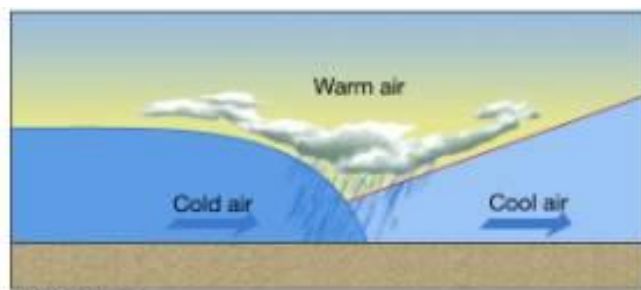
A stationary front is when a cold front or a warm front stops moving. When this happens, the cold air and warm air are closely matched in strength and speed, so neither of them is really strong enough to force each other out of the way. The front just stays there, and the weather is often a combination of warm front and cold front weather. A stationary front can remain in an area for days. Wind directions vary depending on if it was a cold front or warm front that stopped moving.

**OCCLUDED FRONT:**

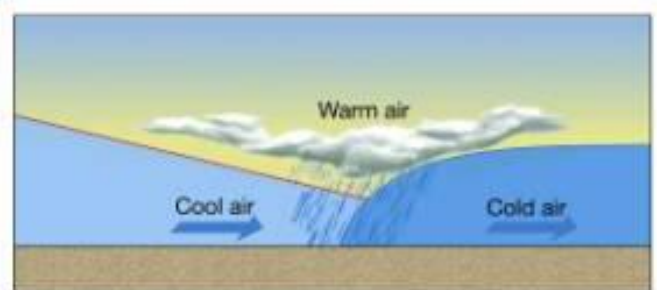
An occluded front occurs when a fast-moving cold front overtakes a warm front. Think of the story, the *Tortoise and the Hare*. The slow moving tortoise (the warm front) is minding his own business as he slowly moves forward. The hare (the cold front), though, is blasting along and eventually collides with the tortoise, and their arms and legs get all tangled up!

There are two types of occluded fronts: warm front occlusion and cold front occlusion. A warm front occlusion happens when the air ahead of the warm front is colder than the air of the fast-moving cold front. The cold front moves over the top of the warm front, since the really cold air ahead is very heavy and is difficult to move. With the cold air above the warm, the warm air will keep rising. If it is already unstable, perhaps because of the really cold air head of it, thunderstorms, rain, and fog can occur. Embedded thunderstorms can happen too. These are very dangerous for pilots because they are hidden in surrounding clouds, so they are more difficult for pilots to avoid flying into.

During a cold front occlusion, the air of the fast-moving cold front is colder than the air ahead of the warm front. When this happens, the cold air of the cold front replaces the cooler air head of the warm front, and also forces the warm air upward. Warm front weather usually happens first, and then is followed by cold front weather. Here is a picture that shows what is happening during an occluded front:



(a) Cold-type



(b) Warm-type

What kind of weather might we be able to expect?

	Before the OCCLUDED Front Passes	While Passing	After Passing
Wind Direction	Southeast-south	Variable	West-northwest
Temperature	- Cold or Cool - Cold	- Dropping - Rising	- Colder than before passing - Warmer than before passing
Types of Clouds	Cirrus, Cirrostratus, Altostratus, Nimbostratus	Nimbostratus, sometimes towering Cumulus and Cumulonimbus	Nimbostratus, Altostratus, and scattered Cumulus
Precipitation	Light, moderate, or heavy steady precipitation	Light, moderate, or heavy showers or steady precipitation	Light to moderate precipitation followed by skies clearing
Visibility	Poor in precipitation	Poor in precipitation	Getting better

See page 10 for this issue's weather project – how to make your own weathervane! ★

## SPACE CORNER

By Sheila Thompson



### DO YOU KNOW WHAT SPACE AND ANTARCTICA HAVE IN COMMON? METEORITES!!

Besides being one of the best places on Earth to study the stars, Antarctica is also a great place to find meteorites! The first one was found in 1912! The Antarctic Connection has a great [web site](#) full of information not only about this cold continent but also about meteorites.

#### Why Are So Many Meteorites Found in Antarctica?



They are easily seen against the ice. They are quickly covered by snow and eventually frozen solidly into the icepack, protecting them from rusting, weathering and corroding. The ice sheet both transports and concentrates the meteorites as it slips off the plateaus and churns against the mountains. The meteorites are generally found in the 'blue ice' areas of Antarctica, which are expanses of old ice kept free of snow by constant winds. Areas of sublimating (evaporating) ice allow the meteorites to gradually 'rise' to the surface.

#### ANSMET



What is **ANSMET**? (hint: they discovered some meteorites are actually from the moon and mars!)

Since 1976, the [Antarctic Search for Meteorites program \(ANSMET\)](#), funded by the Office of Polar Programs of the National Science Foundation, has recovered more than 10,000 specimens from meteorite stranding surfaces along the Transantarctic Mountains. The ANSMET specimens are currently the only reliable, continuous source of new, non-microscopic extraterrestrial material, and will continue to be until future planetary sample-return missions are successful. The samples already recovered provide essential "ground-truth" concerning the materials that make up the asteroids, planets and other bodies of our solar system, and their continued retrieval is the cheapest and only guaranteed way to recover new things from worlds beyond the Earth. The study of ANSMET meteorites has greatly extended our knowledge of the materials and conditions in the primeval nebula from which our solar system was born, revealed the complex and exotic geologic nature of asteroids, and proved, against the conventional wisdom, that some specimens represent planetary materials, delivered to us **from the Moon and Mars**, free of charge.



Follow this season's expedition team in Antarctica [here!](#)



The Antarctic meteorite pictured above is an 8-Kilogram (17 lb.) piece of Mars? Remains of dark fusion crust, created during high speed entry through Earth's atmosphere, are visible (NASA photo). ★

## A HOLLYWOOD MOMENT

~By Bette Bach Fineman



After a winter of restoring a vintage airplane, I was flying again by early summer, and I hadn't forgotten too much of what I had learned the previous fall. I even learned some new things out alone, for instance, tight turns near the ground aren't such a good idea. Oh yes, THAT day had been one for the memory books.

A big movie company was starting production in the little town of Greenfield, Iowa, filming a movie called "Cold Turkey" with Bob Newhart and Dick Van Dyke. The story premise was a little town whose residents were to give up smoking to win some dubious prize. The bad guys from the cigarette companies bet that the town would never win. They wanted to drop cigarettes from the air over the town, get the folks to smoke again, and win the bet. The movie people thought that an old biplane doing the drop would look great on film. That was just what we happened to have!

My husband Dick and I got into our airplane fleet, him in the open-cockpit 1929 biplane, and me in the freshly-painted Champ. I had the map, as my closed cabin had no breezes, and we flew over to Greenfield. The producer looked over the airplanes, then took us into town to have lunch at the largest motel in town, with actor Dick Van Dyke. There we were, Dick and I in our leather flying jackets, rubbing shoulders with the stars!

After lunch, back at the airfield, we prepared to take to the air. Dick headed down the runway first, with me right behind him. He swung the clanky antique around back the other way down the corn rows to say good-bye up close and did a steep pull-up, so they could imagine what the biplane would look and sound like on the screen. I whipped around to follow, immediately lost half my airspeed and sunk into the tall corn!

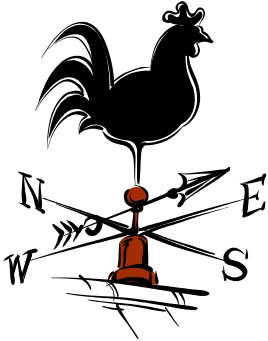
All I could hear was the bang-bang of mature corncobs beating on the wheels. I didn't want to land in the corn! Full power...I glanced at the airspeed...needle bouncing on thirty nine miles an hour...airplane stalls out at thirty-eight, on a good day...ahead of me, telephone poles...I couldn't pull the nose up any more...was the corn taking off my wheels...I couldn't look down to check...the plane lifted a bit out of the corn stalks and I headed under the telephone wire.

Climbing out, my heart racing, wondering what that show looked like from a producer's viewpoint, I sheepishly pointed the nose the opposite way and headed home. Dick, who had given them another pass, had completely missed my show. Being a faster airplane, he caught up and joined up on me, a bit below and behind my wing. I looked over at him. I didn't dare look at my wheels, because from the beating they had taken, I just knew they weren't there! All Dick did was put his head back in that open cockpit and laugh into the wind. All he saw was a lovely row of corn stalks nicely cut and bent over the entire length of my wing struts. I led the flight to the nearest airport on the map and landed. Looking at the Champ, even I had to laugh. Bits of corn tassel were jammed into the carburetor intake, and the corn stalks looked quite nicely cut. Later they told me I had de-tasseled fifty feet of that farmer's crop.

Dick patiently explained about lifting off the ground, keeping the nose low, power in, until you had plenty of airspeed with which to play, THEN making a turn. By then he didn't have to explain. I kept the sheaf of corn tassels on the wall of the den as a grim reminder of what could have happened if the little Champ hadn't given extra to save me from myself. To this day, I pat the airplane on the nose and say thanks. ★

## WEATHER PROJECT

# Make Your Own Weathervane!



Winds can tell us a lot about the fronts and the types of weather we can expect. Weather vanes are useful tools for telling us wind direction. Some common weathervane shapes are roosters, horses, and arrows, but you can make the top of your weathervane be whatever design you'd like.

What You'll Need	
Pie plate, plastic plate or regular plate	Straw
Masking tape or some modeling clay	Wooden dowel or wooden skewer
Print out of Compass Rose	Front and back designs for the top of your weathervane, or you can design your own. Best to print on cardstock or a heavier paper.

## What to Do:

1. Tape your compass rose to the bottom of your pie plate or dish. Use a small-medium chunk of modeling clay, and put it in the middle of your compass rose. Stick your straw in the middle of it. You can also tape your straw in the middle of your compass rose, and make sure the straw is standing straight up and down.
2. Color both copies of your weathervane.
3. Tape the dowel to either your front or back design for your weathervane. Use glue to stick both sides together.
4. Slide your wooden dowel into the straw, and it should swing around freely.
5. A compass rose is what we use to tell us direction like North, South, East, or West. Use a compass to find north. Make sure your weathervane's compass rose is also facing north.
6. See if you can tell which way the wind is blowing! Your design should point into the wind.
7. The finished product will look something like the one pictured here:

**\*Note:** This will probably not hold up in very strong winds! If you use a pie dish, you can fill it with rocks to help make it heavier.\* ★



## Skye Bleu's around-the-world adventure!



Visit [www.thinkglobalflight.com](http://www.thinkglobalflight.com) for more information regarding this first flight through India and her planned future global flight. Be sure to sign-up for email updates on the **Join Us!** tab located on the ThinkGlobal Flight web site.

*Yes, it's true!  
Penelope's Page is two!*

Are you a new reader to our newsletter? Want to catch-up on previous issues?

Visit our [website](#) to catch-up on some great aviation information!



## Time to Check Your Answers!

Do you remember the map of Arty's route for her trip from Oregon to Florida (page 4)?

Were you able to list all of the states she flew over?

Well, you can check your answers here (states listed in alphabetical order). How many did you get right?

Alabama	Mississippi
Arizona	New Mexico
Arkansas	Oklahoma
California	Oregon
Florida	Texas
Georgia	Utah
Idaho	Possibly Nevada*
Louisiana	

\*Appears she flew over the border of Nevada and Utah.

*"I believe it's stupid to take a dumb risk, but it's stupider to pass up a calculated risk with a good chance of success . . . most of us are pretty good at avoiding dumb risks . . . But we're also mostly scared of taking calculated risks. I believe the dumbest mistakes we make in life come from not seizing the moment – even if the moment looks a little scary. I have learned to respect my intuition and I have flown by the seat of my britches so many times, they're stretched out."*

~Paula Deen

## Create – Aviate – Navigate - Communicate



Create

### Foam Ultralight

Create your own adventures with this [foam Ultralight!](#) With your parents help, you can design, decorate and get flying like Arty with this "ultra" cool craft from eHow!



Aviate

### Arty's Maxair Drifter

This aircraft is considered an experimental light sports plane. This single seat plane weighs 320 pounds, carries 16 gallons of gas, and gives a totally unobstructed view. This view gives the impression of free flight-like flying in a chair! Now that's a way to get around!



Navigate

### Smithsonian Air & Space Museum

Navigate to the Smithsonian Air & Space Museum and check out their ultralight collection! This exhibit is located in the Steven F. Udvar - Hazy Center, Boeing Aviation Hangar. Learn the great history of ultralights and, if time permits, head to the Sport Aviation exhibit located in the same hangar- get a firsthand look at aircraft like Arty's.



Communicate

Aviators have been using the phonetic alphabet since 1927. As you learn it you can speak code with your friends. This month our phonetic letter is:

**M = Mike** (pronounced MIKE)