

JETSTREAMS

AHART AVIATION SERVICES

AHART AVIATION SRVC
186 Airway Blvd.
Livermore, Ca. 94551
TEL: 925.449.2142
FAX: 925.373.0944
ahart@ahart.com
www.ahart.com
May 2005

This Summer Ahart will be hosting two Instrument ground schools, please read through the newsletter for more details on each.

In March and April we were very fortunate to have two really excellent FAA safety Seminars. Terry Lankford gave a seminar on Weather Theory for Pilots and I am still receiving emails and phone calls asking for copies of his CDrom (which will be loaded on the back computer for anyone interested in reviewing it.) Then Fred Abrams presented an excellent seminar on Single Pilot IFR flying. Fred's humor and detailed information made the almost 2 hour presentation really "fly by". We are planning to continue hosting these wings seminars and will inform customers as they come up.

Happy and safe flying,

~Lysa Wollard

April Achievements

Tyler Peterson
Solo
James Hubbard

Eric Clifford
Solo
James Hubbard

Sam Hablitzel
Solo
James Hubbard

Jordan Weaver
Solo
James Hubbard

Chuck Cobery
Solo
Lysa Wollard

Cindy Smith
Private
Nenad Paleka

Jonathan Friedman
Private
Rob Goldman

Gene Van Nostern
Private
Rob Goldman

Felipe Castro-Vega
Commercial Multi-Engine Addon
Beth Duff/Nenad Paleka

Neal Beuerman
CFII
Peter Freund

Wayne Lieberman
Commercial Multi-Engine Addon
Bill Rohovit

FLIGHT INSTRUCTOR OF THE MONTH
James Hubbard

CHIEF FLIGHT INSTRUCTOR
Ash Pawla

IFR Ground School

A full length IFR ground school is scheduled to begin on May 23rd, it will be held every Monday and Wednesday evening from 6:30 to 9:30 PM. The course will cover the Jeppesen Instrument/Commercial Manual, Federal Aviation Regulations, as well as Weather and cross country planning. The cost of the course is \$300 and as always once you pay for the class you may take it as many times in the future as you would like.

Accelerated IFR Ground School

Back by popular demand is Fred Abram's Accelerated Instrument Ground School which will be held on June 10th, 11th and 12th from 8AM to 5PM. This course is designed to thoroughly prepare instrument students for the Instrument Written and Oral exam and flight instructors for the Flight Instructor Instrument exam.

The cost of the course is \$400. Please sign up via schedulepointe or call the front desk.

Altimetry and Density Altitude

by Terry Lankford

An aircraft's altimeter is directly affected by air density. To safely and effectively use the aircraft, a pilot must understand how the atmosphere affects this instrument and its limitations.

The **International Standard Atmosphere** is a hypothetical distribution of atmospheric properties (temperature, pressure, and density). In the standard atmosphere pressure and temperature at sea level are 29.92 in. Hg (1013.2 mb) and 15°C (59°F); the lapse rate—decrease of temperature with height—is approximately 2°C (3.6°F) per thousand ft. In the standard atmosphere indicated, pressure, true, and density altitudes are equal. However, since standard conditions rarely exist in nature, manufacturers must make accommodation for a nonstandard environment.

The **altimeter setting** is a value determined for a point 10 feet above airport elevation (approximate cockpit height) that will correct an aircraft's altimeter to read airport elevation. It corrects the altimeter for both nonstandard pressure and temperature at the surface. The altitude read off an altimeter when set to the reported altimeter setting is *indicated altitude*.

The actual altitude of an aircraft above mean sea level is *true altitude*. Indicated and true altitude are the same when the aircraft is on the ground with the altimeter set to the current altimeter setting.

The altitude of an aircraft above terrain is *absolute altitude*. A radio (or radar) altimeter provides the only direct measurement of this value. A radio altimeter "decision height" is designated for Category II and some Category III ILS approaches.

Nonstandard temperature also affects the altimeter, although not to the same degree as pressure. Since warm air is less dense than cold air, the aircraft's actual or true altitude will be lower than that displayed when operating in temperatures below standard. Changing conditions of pressure and temperature have led to a sage saying: "When flying from high to low (or hot to cold), lookout below!"

Pressure altitude is the altitude in the standard atmosphere—above the mean sea level constant pressure surface or Standard Datum Plane—that has the same altitude as the location of the aircraft. Since most performance charts require the use of pressure altitude, our first task is to calculate its value. This can be done in several ways: the use of a chart or graph, a "rule of thumb," or simply by reading the altitude off the altimeter when set to 29.92 (standard pressure).

Rule of Thumb: The difference between indicated altitude and pressure altitude can be determined from the difference between the airport's altimeter setting and 29.92. In the lower troposphere atmospheric pressure changes about 1 in. Hg per 1000 feet; each .10 of an inch of pressure equals approximately 100 feet.

Certainly the most accurate method of determining pressure altitude is interpolation using the Pressure Altitude Conversion Factor Table. However, the maximum difference between values determined from the Table and the "Rule of Thumb" is less than 100 feet. Since the altimeter is consider usable with a

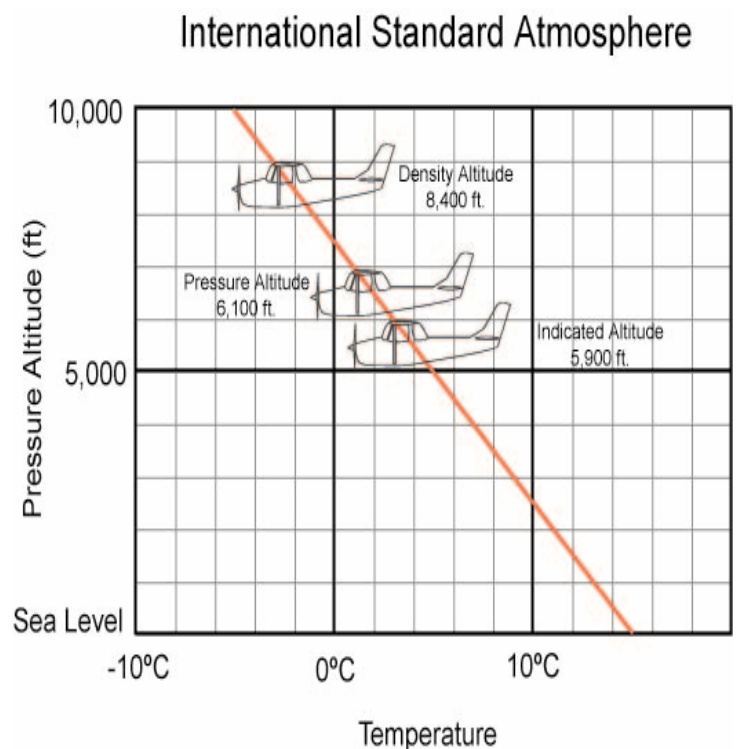
difference between field elevation and indicated altitude of 75 feet, this error is negligible.

Density altitude is the altitude in the standard atmosphere that has the same density as the location of the aircraft. Density altitude is affected by altitude, pressure, temperature, and moisture. Density altitude can be calculated using a flight computer or graph. Required parameters are temperature and pressure altitude.

On the ground at Truckee, with an altimeter setting of 29.75, indicated altitude read off the altimeter is 5,900 feet—airport elevation. Pressure Altitude at Truckee with an altimeter setting of 29.75 was approximately 6,100 feet. The aircraft's location—on the ground at Truckee—under given conditions has the same Pressure Altitude in the standard atmosphere as 6,100 ft.

We'll use a temperature of 24 degrees Celsius for this example. Under existing conditions of elevation 5900 feet, temperature 24 degrees, and altimeter setting 29.75, density altitude is 8400 feet. Even though airport elevation is less than 6000 feet, the aircraft will perform—take off distance, climb, and landing distance—as if it were at 8400 feet in the standard atmosphere!

High density altitude operations pose no additional inherent danger as long as we calculate aircraft performance and do not attempt to exceed the aircraft's design limits.



The Flying Gourmet

by Jim Jellison

My flying experiences are not as deep as some pilots, so I'm much more comfortable flying in the light plane environment and I try my best to keep a good distance from the "big boys". Most of the major airports that I have flown in and out of intentionally keep the light aircraft and the heavies well separated for a variety of obvious reasons, speed being the first that comes to mind. But there are those airports where the two sometimes intermingle and Mather is such a place.

On a recent trip into Mather my wife and I were given taxi instructions that brought us nose to nose with a Boeing 757 Freighter. I stopped, and as I stood on the brakes I found myself at eye level examining the status of the tire tread on the Freighter's nose gear. What seemed like minutes passed in this stand off between a Cessna "David" and the Boeing "Goliath". Suddenly, the ground controller's voice crackled in my headset instructing the Boeing to give way to the Cessna and we continued uneventfully to the FBO.

My wife and I frequently fly to the Sacramento area to visit our daughter and her family. It is a wonderful opportunity to combine pleasurable things like visiting with loved ones, sight seeing, eating, and flying all in one afternoon or evening. We usually fly into a small airport near the activity planned for the day Cameron Park, Rancho Murieta, Lincoln, or Mather. Our destination for this visit was Old Town Sacramento. We had a ride waiting for us, but you can just as easily pick up a car for the afternoon at Trajen Flight Support's Hertz counter.

Old Town Sacramento is not far and has a variety of things to see and do to please almost anyone. There are river boat and horse drawn carriage rides, the train museum, restaurants, and enough stores to keep a world class shopper happy. It was a very pleasant Spring day, so what could be better than enjoying brunch on a shaded porch that over looks the river and what better place to have that brunch than the Rio City Café? Rio City has a terrific menu selection that is seasonal so that the next time you're in town you will want to stop by and see what's new. What really caught my fancy was that they can accommodate a romantic candle light dinner for two in their main dining room, complete with white table cloths and a fire place, or an informal lunch on the back porch. Whatever your taste, from a Dungeness crab sandwich to a grilled filet mignon and prawns, you will find it at the Rio City Café located at 1110 Front Street, Sacramento.

Sacramento, Mather Field is 57 nautical miles from LVK on a heading of 08 degrees. The winds at Mather usually favor the use of runways 22. The phone number to reserve that rental car thru Trajen Flight Support is (916) 368-1455.

Reduction in Mooney Rate

The rental rate on the Piper Mooney is being decreased to \$126/hr for a special summer time deal. Please call the front desk to schedule your checkout!

99s Flying Companion Seminar

Ahart Aviation is very pleased to be sponsoring this year's Flying Companion Seminar which is being presented by the San Joaquin Valley 99s. This all day session has been designed to allow non-pilots who fly with their husbands, wives, friends, etc to learn basic preflighting, charting, radio communications, emergency situations and much more. At the end of the session attendees will be encouraged to take a flight lesson or two with an instructor to learn basic landing skills and practice their radio communications.

Date: Saturday May 21, 2005

Place: Ahart Aviation large classroom
186 Airway Blvd, Livermore

Time: 9:00 AM to 4:00 PM

Pre-Registration is requested

Call Deb T. at 209-599-7527 or
Andy McCarthy at 925-606-5508

Donation of \$45 includes seminar, mid morning snack, great lunch and afternoon snack.

A/C Rate Increases

Please note that due to the rising fuel costs, effective June 1, 2005 Ahart Aviation will be increasing the aircraft rental rates on the following aircraft:

Cessna 152	\$63/hr
Cessna 172N,P,	\$86/hr
Piper Warrior II	\$86/hr
Cessna 172R	\$99/hr
Cessna 172S	\$116/hr
Cessna 182T	\$144/hr
Piper Warrior III	\$105/hr
Diamond Star	\$142/hr
Mooney	\$126/hr
Piper Arrow	\$105/hr
Piper Seminole	\$170/hr