

Mountain Wave



SPRING 2005

Quarterly publication of the Colorado Department of Transportation - Aeronautics Division

THE AVIATION CULTURE NOW IN TRANSITION

Chris Pomeroy, CDOT-Senior Aviation Planner

ONE BILLION PASSENGERS! – this is the annual level of U.S. passengers the FAA is forecasting to utilize America’s commercial aviation system by 2015. This topic was one of many discussed at the **30th Annual FAA Aviation Forecast Conference** recently held in Washington, D.C.

Speakers at this year’s conference, including FAA Administrator, Marion Blakey, and US Department of Transportation Secretary, Norman Mineta, offered attendees important perspectives on the current state of aviation in the United States and where industry experts believe it is going. While a number of interesting topics were discussed, there were several reoccurring themes communicated throughout the conference:

- ➔ Current passenger levels are approaching pre-9/11 levels. While this is good, activity is still below levels forecast prior to 9/11.
- ➔ The airlines are continuing to struggle financially. While load factors are on the rise, low ticket prices and high unit costs continue to keep many airlines operating in the red.
- ➔ Low Cost Carriers (LCC) such as *Southwest* and *Frontier Airlines* are continuing to chip away at the markets once dominated by the “legacy carriers”.
- ➔ The rising cost of jet fuel is having a very negative effect on the already struggling airline industry. The impacts of the rising cost of fuel could have severe, long lasting effects on the industry especially considering that there appears to be no end in sight for the rising cost of oil.
- ➔ The forecast increase in activity will continue to strain an already strapped Air Traffic Control (ATC) system. Improvements to the system *will* have to made to accommodate future activity.

While much of the conference focused on commercial activity, discussions were also held on the increasing role of general aviation in the nation’s air transportation system as well as how airports are faring in these uncertain times. In essence, the business and corporate segments of general aviation are playing tremendous roles in shaping the future of air transportation in the United States. The increase in business/corporate activity is impacting not only the ATC system, but also the nation’s general aviation airports.

As we can attest to in Colorado, the conveniences of traveling to a general aviation airport versus a commercial service airport are very appealing. As activity such as this continues to increase in Colorado, the FAA, the Division of Aeronautics and, of course, airport sponsors, will all need to be very progressive in their approach to planning.

To say the least, the vast amount of information presented at the Conference made it very clear that the future of aviation in the United States looks to provide many challenges. Armed with this information, the Division of Aeronautics will continue to maximize our resources to ensure that the Colorado aviation/airport system remains one of the best in the nation.

With the regular airline bashing that routinely hits the morning news - red ink, deep pay cuts for employees, contract concessions, pension losses - it’s hard to focus on the “sometimes-good news” that **passenger activities are approaching pre-2001 levels and forecast enplanements call for a BILLION flyers in ten-year’s time.**

But our airline industry has changed. Regional airlines - those carriers generally operating 70-seats or less as code-share fleets linking smaller communities with legacy carriers at hub airports - are the ones making the news today with the greatest increases in passenger volume among commercial air carriers, up 15.4% from last year. The other bright spot is the international market, anticipated to show the greatest growth in Latin American travel over that same ten-year projection.

Non-commercial general aviation and commuter/ air taxi operations, however, remain at 1996 levels. What we think of as traditional *business travel* is down with the airlines - having been replaced, in part, by fractional ownership and executive travel operating point-to-point. Today’s customer is more often a leisure traveler who “shops” for airline services - and lowest price is definitely a leading factor in their decision-making.

There is no silver bullet or magic wand that will bring the old customers back, lower fuel prices and put costs of operations back in the black. But, so long as the demand and market are there, the air carrier industry and economic forces that drive it will find a level ground from which to move forward.

NEW LIFE FOR SUPERSONIC

The standard of speed and fashion from the 1970's, the **Concorde**, came to an ignominious demise beginning with the crash in 2000 of an *Air France Concorde* departing Charles DeGaulle Airport in Paris with the loss of all on board. Long a supersonic white elephant, the aircraft - designed for Mach 2 flight - was prohibited from such speeds within the airspace of all the markets it was trying to reach.

The blame was laid on the "Boom-Boom" that offended people on the ground. Because of this, the aircraft never broke even for its flag carriers, *British Airways* and *Air France*, and often flew half empty because of the cost of a luxury seat on board.

The cabin was too narrow and the headroom was limited; but watching it depart - from Heathrow or JFK or Dulles - was a sighting of elegance and grace that left a lasting impact.

Envisioning a more economical and quieter supersonic, the engineers have begun going "back to the drawing board". Seems that the sonic boom is the result of the accumulation of air molecules that cannot dissipate adequately when the aircraft is traveling supersonic, and a huge pressurized cone-shaped sheath around and behind the aircraft forms. When the



cone-shaped sheath travels to the ground at the same supersonic speed, its resulting impact produces the infamous super sonic "Boom-Boom". To be able to "reshape" the sonic boom wave-form may minimize the "Boom-Boom" to a "Pump-Pump".

Blunting the nose of the aircraft might help push the pressurized air away from the aircraft and reduce the likelihood of a sonic boom wave. Not altogether, but enough to make the "Pump-Pump" barely audible to the guy on the ground.

NASA and Lockheed's famed "Skunk Works" has begun developing a super sonic biz jet that might prove friendlier by 20 to 25 decibels - 100 to 400 times quieter than the **Concorde**. Some even predict a commercial version will be flying within a decade.

Concorde herself may be gone, but man's love of flight and love of speed may well make it to another day and another plane.

Transportation Commission Adopts Statewide Transportation Plan

Jamie Collins, CDOT-Trans. Development

On February 17, the **Colorado Transportation Commission** adopted the **2030 Statewide Transportation Plan, Moving Colorado – Vision for the Future.**

Moving Colorado's statewide vision focuses on major messages from the Transportation Commission as well as from regional corridor visions, including maintaining the current transportation system so that Coloradans and tourists may enjoy Colorado's natural resources and be able to purchase goods and services that are delivered efficiently and cost-effectively. Other aspects of the statewide vision include assuring a transportation system that compliments local communities, economic growth and protects the environment.

The adopted plan culminates two years of work by CDOT and Colorado's 15 Transportation Planning Regions (TPRs). During that time the Commission held monthly meetings to develop the document framework and to guide the planning process. In addition, the Statewide Transportation Advisory Committee (STAC) met monthly to provide advice to the Commission for the plan and to guide the regional planning process. CDOT Aeronautics staff worked closely with the TPRs during the development of their Regional Transportation Plans and put together the Aviation Technical Report. The technical report provides supporting information to the statewide plan.

With the advent of Corridor Visions, Colorado now has Regional and Statewide Plans that reflect transportation needs from around the state. There are 350 Corridor Visions in the Regional Transportation Plans which incorporate various multi-modal needs, including aviation, transit,

You can now update your pilot certificate with one of the new fraud-proof "credit card" variety by logging onto the FAA website at faa.gov/airmen certification, submitting your certification info and paying \$2 for the new version. The FAA initially announced that certs would be replaced with the new ones only when receiving a new rating. But looking for increased security, the system was streamlined to accomplish it sooner than anticipated.

AERONAUTICS DIVISION ANNOUNCES STATEWIDE AVIATION SYSTEM PLAN UPDATE

The CDOT-Aeronautics Division has selected Wilbur Smith Associates, Inc. as contractors for the development of an update to the 2000 **Statewide Airport Inventory and Implementation Plan**. The System Plan Update will address the status of aviation services in the state - identify system needs and current trends.

The completed Update is expected in late summer or fall of 2006.

and bicycle/pedestrian needs, through a set of goals and strategies for implementing the vision. These Corridor Visions are the basis for prioritizing which transportation projects will be built through the year 2030.

To that end, the aviation vision is to maximize existing investment and meet interstate and intrastate travel and emergency needs while supporting Colorado's diverse economy. Supporting goals include providing a system of safe and efficient airports that is adequate to meet existing and projected demand while also considering community and environmental compatibility.

The Commission recognizes a funding shortfall, that if not remedied, will cause service levels to be reduced on the statewide transportation system. By building new, and strengthening existing partnerships, as well as utilizing creative alternatives, such as coordinated land-use and transportation development, commuter rail, toll roads, value pricing and other market-based approaches, the Transportation Commission hopes to maximize the expenditure of transportation dollars across the state.

MOUNTAIN AWOS PROJECT COMPLETE

The Division has completed a multi-year \$1.5M installation of **Automated Weather Observing System (AWOS)** stations in critical mountain passes along the Continental Divide. Coupled with numerous on-airport sites, the AWOS system can provide pertinent real-time information about winds, ceiling, temperature, precip, barometric pressure and active weather in the area. For a full listing of sites from Walden to Lamar and Cortez to Holyoke, check the Aeronautics Division website at www.colorado-aeronautics.org.

| | | | | | |
|-----------------|------------------------|----------------|--------------|---------------|------------|
| Monarch Pass | 124.75 | (719) 539-4436 | 38 29' 50"N | 106 19' 11"W | 12,030 MSL |
| Kremmling | 118.425 | (970) 724-9659 | 40 03' 14"N | 106 21' 46"W | 7,405 MSL |
| La Veta Pass | 119.925 | (719) 587-3120 | 37 30' 43"N | 105 10' 14"W | 10,216 MSL |
| Monument Hill | 134.375 | (303) 648-3479 | 39 13' 08"N | 104 38' 26"W | 7,050 MSL |
| Saguache | 118.625 | (719) 655-2229 | 38 05' 57"N | 106 10' 25"W | 7,820 MSL |
| Copper Mtn. | 118.075 | (970) 968 1715 | 39 28' 30"N | 106 09' 09"W | 12,075 MSL |
| Wolf Creek Pass | 121.125 | (970) 264-2160 | 37 27' 52"N | 106 48' 16"W | 11,760 MSL |
| Cottonwood Pass | 132.05 | (303) 512-4919 | 38 47' 57"N | 106 13' 05"W | 12,126 MSL |
| Wilkerson Pass | 132.3 | (303) 512-4918 | 39 03' 01"N | 105 30' W | 9,507 MSL |
| Sunlight Mtn. | 126.075 | (303) 512-4917 | 39 25' 32"N | 107 22' 45"W | 14,059 MSL |
| Mount Werner | 127.125 | (970) 871-5640 | 40 26' 94.6N | 106 44' 95.3W | 11,924 MSL |
| Mines Peak | Due on line mid-summer | | 39 47' 40"N | 105 45' 47"W | 12,493 MSL |

AWOS at Cottonwood Pass, Wilkerson Pass, Sunlight and Mt. Werner are subject to FAA certification when weather conditions allow access to the sites.

FLIGHT SERVICE STATION SYSTEM OVERHAULED AS NEW CONTRACTOR COMES ON BOARD

The FAA announced in early February that it had selected the giant government aviation contractor, **Lockheed-Martin**, to provide pilot briefing services formerly the bailiwick of **FAA Automated Flight Service Station**. With the announcement also comes the plan to reduce the number of AFSS from the current 58 to about 20 by March 2007.

Purported to be able to provide faster service at a lower cost, users (mostly GA and non-airline commercial pilots) are promised their phone calls to briefers will be answered by a live briefer within 20 seconds - and radio calls within 5.

But, perhaps most significant, is the assurance that the cost to the government will be reduced by \$2.2B over the course of ten years. This practically guarantees that no user fees are in the works...that costs can be off-set by existing aviation fuels tax revenues earmarked to ATC.

By further reducing the number of AFSS locations, three AFSS "hubs" will be located in Ft. Worth, TX, Leesburg, VA and Prescott, AZ. The Denver AFSS location at Centennial Airport will remain active as one of the twenty primary sites in the system.

Consolidation from the current capacity to twenty-one "super centers" will take place gradually over the next two years beginning Oct. 1, 2005.

The new privatized FSS system promises improved use of the internet, email and the ability to file NOTAMs via PDA. Emails can be sent to pilots enroute when significant changes in conditions occur.

But of concern to many are the vast areas covered by the 20 super sites - and the briefer's lack of knowledge of local terrain and weather peculiarities. The contractor, however assures the general aviation community that it will provide "specialized" knowledge for briefers familiar with the regions that they are working.

The FAA has spoken earlier about the likelihood of retraining current FSS briefers to assume some of the tower and center positions made available following the announcement of a major recruiting program to address Air Traffic Control needs in the next ten years. Other FSS employees may be attracted to employment with **Lockheed-Martin** in the revitalized AFSS system. Various protests have already been filed against the selection process.

In a similar inflight-safety move, **Jeppesen Corp.** of Englewood announced ice and turbulence forecasting through its online services to aid pilots in flight planning to avoid serious risk areas. Forecasts will be available at various altitudes in 3-hour forecast increments. Potentially severe conditions will be depicted in color laterations related to severity of the conditions forecast.

AIRPORT OPERATORS TO MEET

Members of the **Colorado Airport Operators Association (CAOA)** announce plans to convene in Winter Park for their annual Spring Conference - June 8 through 10. Venue for this year's gathering, which is sponsored by Denver International Airport, is the **WINTER PARK MOUNTAIN LODGE**.

Registration may be accomplished online at www.coloradoairport.org or by calling Sue Davidson at 303-342-4432 or online at sue.davidson@diadenver.net

NEW HEIGHTS FOR DIA

When all was said and done...2004 was the record-setting year that everyone expected at Denver Intl. Airport.. The annual total of 42,393,477 passengers through the airport amounted to a surge in activity of nearly 13%.

Although the numbers have increased over each of the past 13 months, co-manager Vicki Braungel says, "This double-digit growth is extremely gratifying and reflects to some degree the efficiency of the airport as a transportation hub for the region, but I don't believe it's realistic to think such large increases can go on for the long term."

The airport's success is attributed largely to the improving economy and its central location attracting a mix of business and recreational travel.

Ten-Year Review

A LOOK AT THE COLORADO DISCRETIONARY AVIATION GRANT PROGRAM

When the **Colorado Aeronautical Board** first conceived a discretionary grant program in the early 1990's, it's goal was to channel available fuel tax revenues in the Colorado Aviation Fund to meet the most striking and urgent needs of the State's public-use airports.

Three simple categories were identified as priorities: 1) to participate in meeting the local match for federal funds available as infrastructure, 2) to maintain and improve existing infrastructure - runways, taxiways, aprons, airside facilities, and 3) to improve safety and promote good flying habits.

In the early years, funds were limited to \$50,000.00 per airport - revenues were small and the immediate need was to step in to save the existing facilities "on the ground". The *Pavement Condition (PCI)* was indexed as fair to good; acute needs identified as safety issues were given attention first. Lesser federal funds were being matched, for the most part, by the local sponsor.

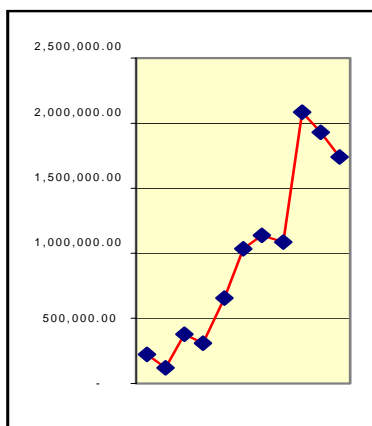
By the late 1990's, however, the **Colorado Discretionary Aviation Grant Program** began to see an increase in both the federal funds available and tax revenues into the Aviation Fund from higher volume sales of commercial jet fuel. State statute re-aligned the percentage of revenues reimbursed to airports from 75% to 65% and put larger dollars into the Fund. Having more money to award, the **Aeronautical Board** directed closer attention by the Aeronautics Division staff to coordination between state and federal funds and the completion by eligible airports of a *5-Year Capital Improvement Program* updated each year. Although there remained a need for continued support of maintenance projects, the PCI ratings were steadily climbing.

Available state funds more and more were being directed to participation in the local match for vastly expanded federal funding, brought about by the **FAA Airport Improvement Program (AIP)** increases in *Air 21* legislation. Then in the 2004 reauthorization of *Air 21*, the Congress dropped the local match share from 10% of the total project costs to 5%, freeing up large amounts of state and local money that had been earmarked for match participation to go to other uses. The number of airports relying on state participation in local match continued to increase, but because of the change in federal match-share, the money required to do so, immediately declined. Airports began to receive funding for automated weather, for approach facilities and for planning projects.

In all, more than 550 individual grants amounting to \$27.5M have been channeled into Colorado airports through the **Colorado Discretionary Aviation Grant Program** since its inception in 1992. Each grant represents a step toward the **Aeronautical Board's** goal to provide the safest, most-reliable infrastructure, while looking forward to greater economic and social impact for the state's citizens through a comprehensive aviation system that is truly ready for business in the 21st century.

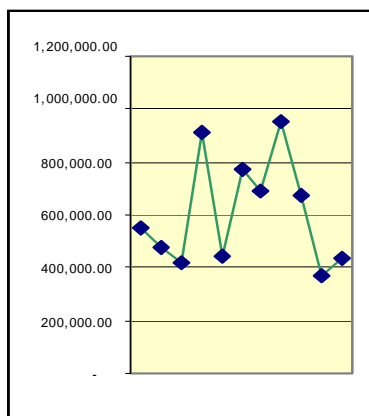
LOCAL MATCH

| | | |
|------|--------------|----|
| 1995 | 225,000.00 | 6 |
| 1996 | 118,384.00 | 3 |
| 1997 | 385,823.00 | 5 |
| 1998 | 317,945.00 | 3 |
| 1999 | 662,874.00 | 10 |
| 2000 | 1,028,078.00 | 12 |
| 2001 | 1,132,030.00 | 16 |
| 2002 | 1,090,356.00 | 13 |
| 2003 | 2,090,823.00 | 28 |
| 2004 | 1,927,493.00 | 33 |
| 2005 | 1,735,058.00 | 24 |



MAINTENANCE

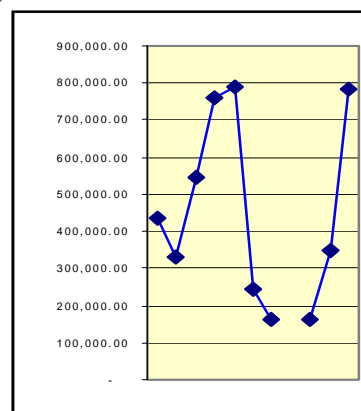
| | | |
|------|------------|----|
| 1995 | 551,517.00 | 14 |
| 1996 | 473,463.00 | 13 |
| 1997 | 417,390.00 | 10 |
| 1998 | 910,573.00 | 12 |
| 1999 | 446,642.00 | 7 |
| 2000 | 768,622.00 | 18 |
| 2001 | 688,702.00 | 12 |
| 2002 | 954,155.00 | 13 |



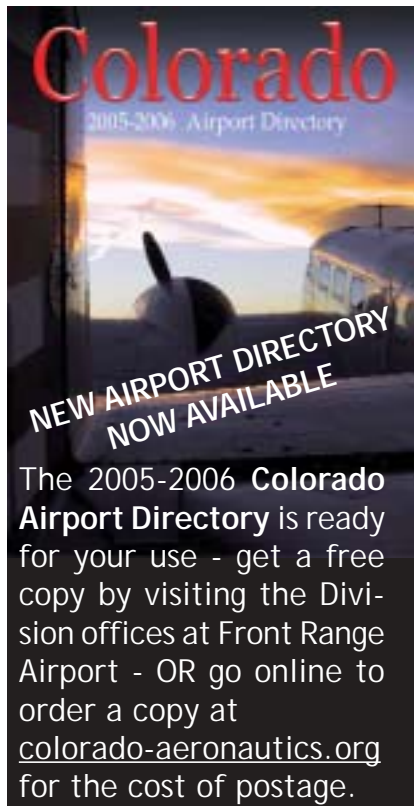
| | | |
|------|------------|----|
| 2003 | 673,458.00 | 12 |
| 2004 | 373,144.00 | 9 |
| 2005 | 437,647.00 | 7 |

SAFETY

| | | |
|------|------------|----|
| 1995 | 434,972.00 | 13 |
| 1996 | 332,712.00 | 9 |
| 1997 | 548,232.00 | 15 |
| 1998 | 759,381.00 | 16 |
| 1999 | 787,564.00 | 17 |



| | | |
|------|------------|----|
| 2000 | 243,400.00 | 7 |
| 2001 | 161,480.00 | 4 |
| 2002 | None | |
| 2003 | 163,000.00 | 4 |
| 2004 | 346,816.00 | 7 |
| 2005 | 785,667.00 | 11 |



Colorado
2005-2006 Airport Directory

**NEW AIRPORT DIRECTORY
NOW AVAILABLE**

The 2005-2006 **Colorado Airport Directory** is ready for your use - get a free copy by visiting the Division offices at Front Range Airport - OR go online to order a copy at colorado-aeronautics.org for the cost of postage.

The 2006 Bush budget proposes doubling the security tax being levied on airline tickets from \$2.50 per leg to \$5.00, with the maximum cost for any one-way travel not-to-exceed \$8.00. The requested increase is attributed to higher TSA operations costs.

If you really need an excuse to go to Oshkosh in July ..



...how about having your first glimpse at the **GlobalFlyer**, which circumnavigated the earth non-stop in 64 hours on one tank of fuel...or getting up close with the **White Knight** and **Space Ship One**, winner of the **X Prize** as the first civilian-built ship to penetrate into space.

Both are celebrities at this year's **EAA AirVenture**, which runs from July 25 through the 31st at the venerable Wisconsin locale.

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Contact us at: 303-261-4418 or at www.colorado-aeronautics.org

A NEW IDENTITY FOR AN OLD FRIEND

Thanks to the goodwill and generous support of a long-time user and part-time local resident, Tom Redmond, **Silver West Airport** at Westcliffe, CO, is sporting a new image.



The 7000 ft. runway - field elevation nearly 8300 ft. MSL - has been widened and repaved to a standard 60 ft., safety areas have been improved, object-free areas cleared and taxiways and ramp resurfaced.

Silver West Airport lies within the Wet Valley southwest of Pueblo and north of Alamosa, in some of the most elegant stretches of the Sangre de Cristo Mountains. Because of exception "lift" coming off the peaks, look out for glider operations near by. You can reach **Silver West** on 122.9. 100LL is available.

THE CHANGING FACE OF GENERAL AVIATION

Dramatic growth continues in the use of general aviation turbojet aircraft. The FAA projects an 85% increase between 2002 and 2015 in the activity associated with very light jet (VLJ) aircraft, defined as those 4-6 passenger, sometimes-single-pilot jet aircraft which are proliferating the manufacturing industry. A number of such aircraft expect FAA certification within the next few months or years and will be in the air shortly thereafter, ranging in cost at the low-end from \$1-2M at delivery.

Suddenly remote, obscure airports are anticipating increased jet traffic. A number of Colorado mountain airports have already begun to accept second-homers, outfitters' parties, investors in "heavy-iron". What once was a community based airport has increasingly become a destination airport for larger and larger, heavier and heavier equipment.

What does this mean for the industry? Runway lengths and pavement strengths must meet the demand - improved approach procedures and expanded safety areas are needed to adequately serve the customer who is arriving in a heavier, faster aircraft. Quick response snow removal, improved ground services and turn-around ... available catering, ground transportation and up-graded business facilities, all play an important role in bringing this lucrative customer into an airport.

And, don't forget the negative community reaction to more traffic and increased noise concerns.

But the market is changing - very light jet (VLJ) traffic will soon become a fact of life. The CDOT Division of Aeronautics, in conjunction with the FAA-Denver Airports District Office, has begun a long-term review of the changing face and climate of general aviation in Colorado. The upgrade to the statewide aviation system, expected for completion next year, will carefully evaluate the impact of VLJ as we move into the second decade of the 21st century.

House Bill 1314, sponsored by the venerable friends of aviation, Lewis Entz and Alice Borodkin, continues its process through the General Assembly at this writing, supporting tax incentives to aviation manufacturers who bring an expanding business enterprise to a Colorado airport. Stay tuned!

AVIATION EDUCATION TAKES WING IN COLORADO

CDOT-Aeronautics Division Aviation Education programs continue to expand, developing partnerships both nationally and statewide.

Through its “**Get ‘Em Flying**” program, the Division supports teachers’ implementation of an aviation curriculum - and partners with the local EAA chapters to schedule *Young Eagles Fly Days* for students who have successfully completed the program.

In March, the Division partnered with the **Wings Over the Rockies Museum** to introduce the *EAA Einstein Project* - a six-week standards-based aviation curriculum. Because of the strong existing State aviation education program and the unique facilities of the **Wings Over the Rockies Museum**, Colorado was one of only two states nationally to receive the innovative new program from EAA for implementation in the classroom.

The most recent “**Science of Flight Workshop**” was held at the Weisbrod Museum at **Pueblo Memorial Airport**, attended by more than 50 teachers from as far away as Grand Junction. All participating teachers agreed that the Day-two *First Flight for Teachers* outing, when the local EAA chapter provided an introductory flight in a general aviation airplane, was the highlight of the workshop.

Annually, the Aeronautics Division offers three teacher workshops statewide. The program continues on **July 15 and 16** at the **Central Colorado Regional Airport** in Buena Vista. More information about the workshops, registration and academic credit is available from CDOT-Aviation Education program director, Darci Wert. She can be contacted at (303)261-4418 or at darci.wert@dot.state.co.us.

Look for announcements of future teacher workshop on our website www.colorado-aeronautics.org.

“This was the best workshop I have ever been to since 1978. Everyone was so knowledgeable. Awesome.” Joel Marquart, Mesa K-12



Under wing of a vintage DC-3 proved to be the perfect setting for the recent teacher workshop held in Pueblo.



Colorado Division of Aeronautics
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Watkins, CO 80137

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A perspective on the future

New AWOS sites on-line

10-Years of grant funds

Contract FSS coming