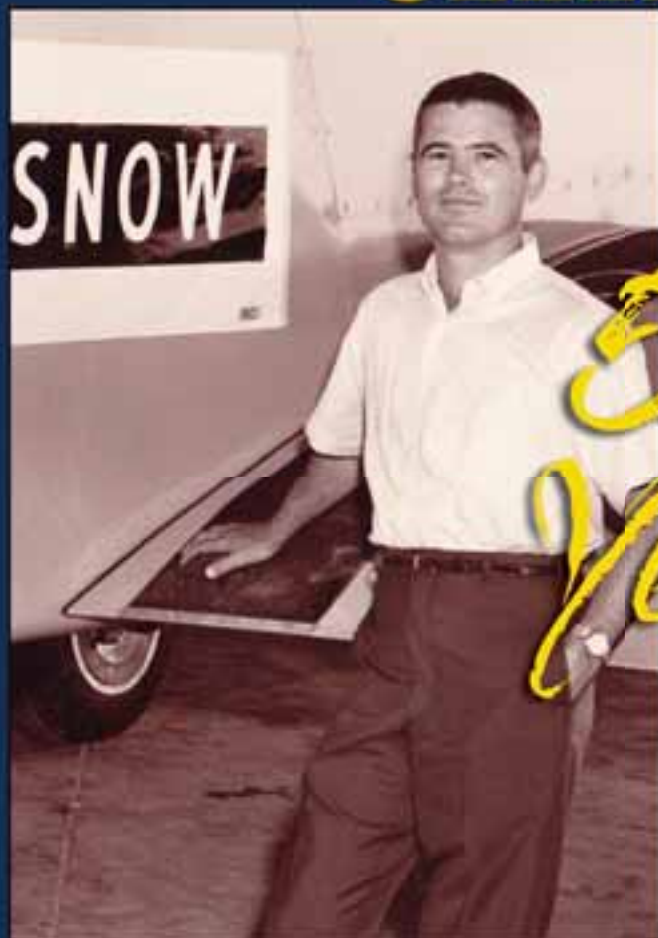


# Agricultural Aviation

July/August 2008  
Vol. 35, No. 4

Official Publication Of The National Agricultural Aviation Association  
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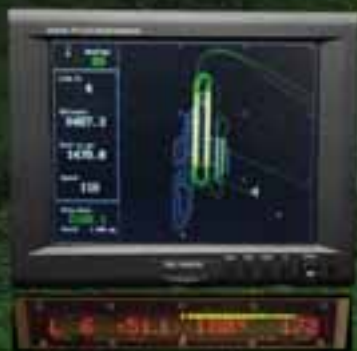


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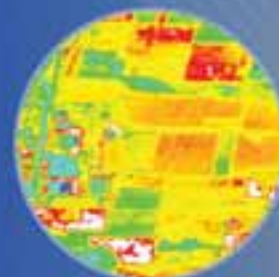
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## COMMUNICATING WITH YOUR COMMUNITY



I hope that everyone is having a good start to their season by now. As I write this in mid-May, we are having a slow start due to a lack of moisture. Mother Nature has not been overly kind to us here in the panhandle of Texas so far this spring, but we are now getting corn growing out of the ground and there is plenty of time to get things back on the right track for the season. On the South Plains of Texas, cotton is just now being planted and wheat is past the prime window for fungicide applications.

Information like this is what I use and report on in a weekly radio spot that I have on a local radio ag program in Amarillo, TX. Communication with the community and your customers is a huge issue with everyone's business today, and the more that we are informing people about our business and the industry, the less they are wondering what we are doing. Last week we had our local pre-school children out to our operation and gave them a tour of our facility; I think we had as many questions from the parents as the children. It's not just about educating the children, it's about educating the adults as well.

I received an e-mail from Eric Klindt, NAAA Secretary and pilot for Tri-State Air Ag in Campbell, MN, about how he had his local fire department visit his facility and he gave a presentation about safety issues within our industry and what to do in an emergency with an ag aircraft.

*Communication with the community and your customers is a huge issue with everyone's business today, and the more that we are informing people about our business and the industry, the less they are wondering what we are doing.*

In my last column, I wrote about safety; I cannot stress the importance of this topic enough, as everyone is now busy with their spraying seasons. An important safety issue and one that I report on in the radio program, is the need for information on towers in local communities. As most people in the ag aviation business know, there are a lot of towers constructed that are less than 200 feet in height, which means that companies are not required to mark them. These towers are used for weather monitoring, GPS guidance

and other things that make today's farming practices work. When I speak about this subject on the radio, my focus is to get the companies that are erecting these towers to inform the local applicators about where the towers are located. Again, a little communication with whoever is putting the tower in place could save an airplane and a life.

I recommend that everyone work with their local tower companies to set up some sort of system to help ensure that there are no further fatalities in the industry from tower collisions. These are a few examples of how you can get involved in your community and I hope these ideas are something that the membership can use. You can read more about what other operators are doing in their communities on page 24.

Until next time, have a safe and prosperous season! ✈

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## Executive Director's Message

ANDREW MOORE



## It's A Wonderful Life



Earlier this year, I was fortunate enough to attend the Golden Anniversary of manufacturing Snow-designed aircraft in Olney, TX. On page 15, you will find a comprehensive article on Air Tractor and the company's founder and owner, Leland Snow. To use a quote from the article, "Leland has attained legend status in his own time." I think anyone in this industry would have a tough time arguing against this statement. Many people have been touched by this great man in very positive and significant ways. One of my all-time favorite films is Frank Capra's "It's a Wonderful Life" starring Jimmy Stewart. Stewart plays George Bailey, a good man that makes selfless decisions that benefit his community. In the film, George Bailey finds himself in difficult situations and wishes he never were born. God, via the angel Clarence, allows George to see how things would have transpired if he had never existed. What George finds is that those people whom he touched (or, in this case, didn't touch) in his life are in dire straits and his community of Bedford Falls, a once idyllic town, is now corrupted and riddled with vices.

Leland, like George Bailey, has had a profound influence on many, especially the agricultural aviation industry. At the Air Tractor anniversary, David Dewil made a presentation to Leland on behalf of Transland, as did representatives from Wells Fargo, Pratt & Whitney Canada, the City of Olney, Texas State Legislator Rick Hardcastle on behalf of the Texas Department of Agriculture and Jim Hirsch on behalf of the Air Tractor employees. David stated that Leland has not only contributed profoundly to the agricultural and aerial application industry, but he has also been chiefly responsible in providing for and educating hundreds, if not thousands, of people who are part of his employees' families and the Olney, TX, community who are involved in Air Tractor's business.

*In the 57 years that Leland has been in the aircraft business, 2,817 of the aircraft he designed have been manufactured as of April 2008. Of these, 523 were pre-Air Tractor aircraft, and 2,294 Air Tractors have been manufactured. These are impressive numbers.*

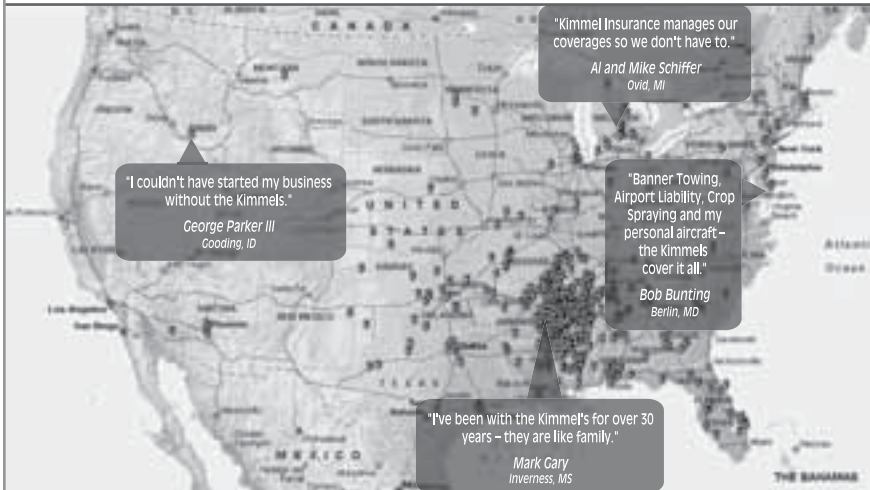
This is without taking into account the people and families he has contributed to who purchased his aircraft. In the 57 years that Leland has been in the aircraft business, 2,817 of the aircraft he designed have been manufactured as of April 2008. Of these, 523 were pre-Air Tractor aircraft, and 2,294 Air Tractors have been manufactured. Of course, not every Snow-designed aircraft that's been manufactured still exists, but a great number of them are still flying today. These are impressive numbers, especially when you take into account that, according to the Federal Aviation Administration's (FAA) General Aviation Activity Survey for 2006 (the most current available), there are 3,430 aircraft in the agricultural aviation fleet today. When you take into account the number of acres these aircraft are responsible for seeding, fertilizing and protecting, and the vast amount of food, fiber, and bio-fuel produced as a result of these aircraft across the globe – from Africa to Europe to the Americas – the numbers must be astonishing.

Leland does far more than help the agricultural aviation industry by manufacturing aircraft. He is a very generous philanthropist to many industry programs. Over the years, Air Tractor has contributed hundreds of thousands of dollars to the National Agricultural Aviation Research & Educational Foundation (NAAREF) in its efforts to promote occupational and environmental safety and security to the industry. Air Tractor was the one of the largest benefactors to NAAREF when its Board was organizing a little program known as the Professional Aerial Applicators Support System (PAASS) more than a decade ago. PAASS has been a major factor in the 26 percent decline in drift incidents and the more than 18 percent decline in ag aircraft accidents over the past decade. Air Tractor seed money helped lead to this success.

Leland has also been a major contributor to the NAAA. NAAA's

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headquarters is only 10 blocks from our nation's capitol building. Air Tractor's generous donation to the Association made it possible for the Association to purchase this building, which is only a 15-minute walk down Pennsylvania Avenue to the offices of our nation's lawmakers. Air Tractor's beneficence has enabled the Association to strengthen the agricultural aviation industry's influence with our nation's government and with the media and public, thanks to its generous donations to the Association to help produce its public relations video *Agriculture's Air Force* in the early 1990s and the updated video that is expected to be released later this year.

For all these reasons and many more, "Leland has attained legend status in his own time." The industry has been fortunate to have leaders such as him touch our history. Best yet, Leland is still going and, by the looks of things, will still be going strong by the time Snow-designed aircrafts' Diamond Anniversary comes along. ✕

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## WNAAA President's Message

PATTI CLINE



# STOP AND TAKE JUST A MOMENT...



**A**s the season is full upon us and the days are long and hot, we get weary and sometimes a bit overwhelmed by it. The pressure is on and time is getting short to get the spraying done before harvest. It is the time of year when we are more likely to feel the stress of the long, hot workdays and short nights. This includes not only the pilots, but the ground workers and office staff. They all work together to keep an operation running smoothly and without one piece, the others don't function well.

I would like to encourage operators and pilots to remember the importance of taking a deep breath, a cool drink and a moment or two to clear your mind and rest your body. I know sometimes all you can think is, "There is not time for that," but in fact there is and you need to make time for it; just five or 10 minutes can keep you safer. A clear head and hydrated body work more efficiently and you'll be less prone to make a mistake.

Office staff should make sure the pilots eat breakfast and have cool drinks (especially water), healthy snacks and a healthy lunch with them while flying so they stay refreshed and fueled. I know eating is hard when you are busy, hot and tired, but it is so very important to maintain an active and alert mind. This includes you in the office, too!

As my husband, Ron, leaves for the hangar each day, I ask, "Do you have water and something to eat with you in that special red bag?" Yes, I am a broken record about it, but it helps remind him to make sure he is prepared for a long day.

Besides the pilots, office staff and ground crew should make sure they have drinks and food for the day, too. You never know how long the day will run. When customers are calling, fellow employees need an answer and your kids are looking to you to be with them, you need to take that deep breath. Your calmness and perceived patience can make a difference in attitudes all the way around.

Taking a moment with my dogs, Oso and Abby, can relieve my stress level and improve my attitude. Just a quick hug, throw of the ball and touch of their soft ears can restore me. For you, it might be a scripture, a quick call to a friend, a little Internet shopping (which works for me, too!) or a 10-minute nap. Find whatever it is you need to restore your peace and ability to work with a clear head.

For the pilots who are feeling the pressure of long hours of flying, every once in a while, sit back, quench your thirst and shut your eyes for just a few minutes. We need you with

us – whole and complete for a lifetime, not just for today's work.

Yes, take a short moment and smell the flowers of summer. Enjoy their beauty, and maybe even pick some for that one waiting for you at home! Be safe! ✂

*When customers are calling, fellow employees need an answer and your kids are looking to you to be with them, you need to take that deep breath. Your calmness and perceived patience can make a difference in attitudes all the way around.*



*Patti enjoys a spare moment with her dogs, Oso and Abby.*

# COOPERATION WITH AERIAL SERVICES MAKES US ALL STRONGER



*This article was written for AgProfessional magazine and is reprinted here with permission from the Ag Retailers Association (ARA). ARA represents the U.S. ag retail and distributor industry. NAAA and ARA work closely together on issues important to farm service providers.*

In the current agricultural economy, there are many challenges to overcome in providing products and services to maximize our customer's goals, which ultimately shape our prospects as applicators and retailers. In the quest for maximum yields, a renewed interest in crop protection, crop health and performance during the reproductive stage of many crops, including corn and soybeans, is occurring. Reliably applying crop protection products at this stage without damaging the crop often requires professional aerial application services. This has created a situation in which many retailers, distributors and registrants are trying to capitalize on aerial application services, without valuing the unique skills that are necessary to conduct safe aerial applications. The benefits to the crop protection industry are a result of increases in fertilizer and other inputs that achieve higher crop yields.

There are many experienced, professional aerial application operations across the country that have become capital and knowledge-intensive operations. Agricultural aircraft have become expensive and require a sophisticated skill set to operate and maintain. The infrastructure and labor, such as ground support facilities and loading equipment, needed to efficiently run an aerial operation are also specialized and expensive. The valuable expertise of an aerial applicator involves much more than spreadsheets or mapping programs; it is the knowledge of an area, the crops, the people, the environment and how they as applicators interact with the aircraft and the applied products. Mapping and communication tools are important in application operations, but the most valuable part is the operational knowledge that an experienced operator has to organize and manage efficient work, with the least amount of complaints and other problems.

When I hear of pressure from retailers to separate the product side of this business from the aircraft operator, I immediately think that this is an effort to subjugate aerial application to "second-class" status within the crop protection industry. A successful and progressive aerial application

operation must have the resources and the registrant support for the specialized equipment and infrastructure to provide the needed services. In addition, when an aerial applicator's business plan accepts nontraditional channeled product, it tends to decrease the effective margins for retailers and distributors alike. It also is a concern when aerial operations are not taken seriously as real businesses, but only as a service used by retailers. Cooperation with one another, rather than obstructing one another, should be our shared objective.

The NAAA and the Agricultural Retailers Association (ARA) have had a long history of working together to represent ground and aerial applicators nationally. Our organizations recently served together on an Environmental Protection Agency's (EPA) Drift Mitigation Work Group. This type of cooperation is important considering the existence of activist groups that want to limit our ability to protect crops.

Aerial applicators and retailers can work together in other important ways. Quality seasonal labor is a challenge for everybody. When aerial and ground peak seasons do not overlap, there is an opportunity to share labor, which reduces costs for both operations. Another very important activity is to share complaint information. If a grower has a bias against ground application and complains, this information can be very valuable to aerial operators, since these same growers tend to be sensitive to aerial applications as well (and vice versa). If a retailer believes that a customer is asking too much from an aerial applicator, such as a request to spray a field that has too much drift or other safety concerns, the retailer should dissuade the customer from using aerial services when it appears to be too perilous for the pilot or risky for all parties involved. When the crop protection community works together with all parties providing their best efforts, we are then the most efficient at expanding the output of America's farmers. Aerial application is an effective way of expanding crop prospects and production, and this production is a big benefit for retailers. ✕





# DEFINING SUSTAINABLE AGRICULTURE



**A** number of national farm, commodity and farm service associations, including the NAAA, have been alerted to a draft “sustainable agriculture” standard under development by the American National Standards Institute (ANSI) that shows hints of excluding the use of high-production agriculture methods, such as biological and chemical technologies in its definition of sustainable agriculture. ANSI is known for developing and accrediting uniform standards and guidelines that directly impact businesses in nearly every economic sector. ANSI has contracted with the Wisconsin-based Leonardo Academy to handle its sustainable agriculture standard. The following is a statement issued by the Leonardo Academy justifying the development of this standard:

*A large and growing segment of consumers in the U.S. are actively seeking to support companies whose agricultural products are grown and handled sustainably; however, there is little agreement about what sustainability means. When there is market confusion and an absence of government regulations, voluntary national standards serve as a vehicle for resolving differences to retain public confidence.*

When the Leonardo Academy held their first sustainable agriculture stakeholders’ meeting last fall in Berkeley, Calif., many representatives in agriculture were not aware of the meeting and, as a result, were not in attendance. A draft standard for trial use was prepared for this meeting by the California-based Scientific Certification Systems, which contains provisions aimed at “phasing out the use of dangerous agrochemicals,” and “establishing a practical path for transition to organic practices.” Four goals were set forth in the text from the Berkeley meeting including the following:

1. *Preferentially employ biological, mechanical and cultural methods to control pest and disease vectors;*
2. *Phase out agrochemicals that pose acute or chronic health risks or ecotoxic risks, moving toward organic practices;*
3. *Yield products of high nutritional value that meet national organic standards for purity; and*
4. *Establish a safe, equitable workplace and establish productive engagement with the surrounding community.*

This language and the draft goals run counter to a variety of expert opinions on organic agriculture’s ability to provide the solutions needed to feed an expanding population

and world. For example, the United Nations Food and Agriculture Organization (FAO) recently released a statement saying that it “has no reason to believe that organic agriculture can substitute for conventional farming systems in ensuring the world’s food security.” Director-General Jaques Diouf of the FAO said, “You cannot feed six billion people today and nine billion in 2050 without judicious use of chemical fertilizers.” The world’s population has grown by 12 percent since 1997. Meanwhile, the total crop areas harvested have grown only two percent in a decade. Biological and chemical technology has helped agriculture answer the call through greater productivity.

The ANSI sustainable agriculture standard is still in the draft process and high-production agricultural groups are now aware and pushing to be part of its development.

In addition, the Environmental Protection Agency (EPA) has established a Farm, Ranch and Rural Communities Federal Advisory Committee to advise the Agency’s administrator on environmental issues. This panel will also focus on sustainable agricultural practices. The Agency has stated that the focus of the Committee includes “the development of a constructive approach to advancing sustainable agriculture and protection of the environment, addressing communication between environmental and agricultural interests and urban encroachment in rural areas.” Agricultural groups representing high-production agriculture sit on the EPA Advisory Committee and will act to define sustainability to include using available technologies that increase crop yields.

Actions have also been taken outside of the U.S. by corporations to move away from traditional crop protection technologies. For example, The Home Depot® recently announced that it will voluntarily stop selling traditional pesticides and herbicides in its stores across Canada by the end of 2008 and will increase its selection of what it claims are “environmentally friendly” alternatives. According to Annette Verschuren, president of The Home Depot® Canada and Asia, “Our stores will prominently feature green pesticide alternatives.” Product categories affected by The Home Depot®’s voluntary phase-out include herbicides, insecticides, fungicides, slug baits, moss control products and lawn fertilizers with weed control. A total of

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60 products will be affected. In the company's press release announcing this policy it stated that "The Home Depot® Canada also offers more than 1,500 Eco Options products, including all-natural insect repellents, organic plant food and vegetables in biodegradable pots." These products tend to sell at higher prices than conventional crop and garden protection products.

As these efforts to define sustainability indicate, the battle between environmental activists pushing solely organic practices and high-production agricultural producers judiciously using biological and chemical technologies continues to heat-up. Some corporate interests are trying to profit on the debate by preying on people's emotions in an effort to pad their bottom line. The fight will not be an easy one for high-production agricultural producers; however, the will of its producers and the arguments it has at its ready—feeding a growing population without plowing up large tracts of undeveloped earth—are strong. ✎

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# LELAND SNOW – OVER 50 YEARS OF SUCCESS AND STILL GOING STRONG

By Lindsay Barber, NAAA Director of Communications

## The Early Years

Leland Snow was in awe of airplanes from a young age. Born May 31, 1930, in Brownsville, TX, Leland, at the age of six, began building model airplanes. At 15, Snow started working for two ex-military pilots in exchange for flight lessons. After eight months, he soloed in a J-3 Cub on his 16th birthday. Besides flying, Snow also became interested in parachuting and made several jumps during his late teenage years and early 20s.

Snow's biggest inspiration in life has been his father, who passed away when Snow was a sophomore in college. He said, "My father was a civil engineer and he inspired me to follow a career in engineering because I was good at math and science. He owned a small engineering business, which made me want to start a small business, and I admired him and the work that he did."

Snow had earned a reputation in his area for being a decent pilot and during his junior year of college, he worked towards his commercial pilot's license, which he received in 1951 and started crop dusting. Snow had an interest in agricultural aviation and a local farmer, who needed a seasonal pilot, hired Snow because of his good reputation.

Snow really enjoyed the agricultural aviation industry and quickly realized that there was a need for an aircraft dedicated to agricultural spraying. He spent a lot of his spare time designing his first airplane, called the Snow S-1, which was the forerunner of the S-2/Thrush series that would be built in future years. The 23-year-old made the first flight in the S-1 August 17, 1953. He flew the S-1 for spraying jobs in the Texas Rio Grande Valley and in Nicaragua. Snow provided spraying services

in Nicaragua until 1955 because pilots were making a lot of money in that country. He would randomly travel back to Texas, where he would work on aircraft designs.

## Snow Aeronautical Company

He returned to Harlingen, TX, and worked on building the S-2A over the next several years. Snow did flight demonstrations for the Texas Agricultural Aviation Association (TAAA) in the S-2 and upon landing the aircraft after the demonstration, several ag pilots laid down deposits to purchase the aircraft. In 1958, Snow Aeronautical Company moved its production facilities to Olney, TX.

Over the next several years, Snow and a small staff worked on various types of aircraft, including the S-2B. Besides designing and building aircraft, obtaining FAA Type Certificates for the planes took up a lot of time for Snow. In 1959, his company sold a total of 30 aircraft.

## Partnerships And Rockwell Standard

In 1962, Snow had to take on partners after a lawsuit was filed against his company and he ran out of funds. He contacted two of his customers, Wally Pankratz of Brawley, CA, and an English company called Crop Culture, to see if they would be interested in forming a partnership. They all agreed and within a few days, Snow Aeronautical had gone from sole proprietorship to a partnership. The partnership was divided into thirds: Snow, Crop Culture and Pankratz. Pankratz also had some California farmers within his portion of the partnership.

Within a couple of years, the partners became upset with Snow because he built the 240-horsepower S-2C after



Leland Snow in 1956.

they did not agree with the initial idea. At a stockholder's meeting in 1964, the partners released Snow from the general manager position. He stayed on as an employee and continued to investigate possible future designs.

During this time, Snow met his wife, Nancy Bacon, in May 1964. He knew he wanted to marry her after three weeks, but waited to propose until the sixth week of their courtship. They married in December of that year and are still happily married 44 years later. Together, they have two grown daughters, Kristin Edwards and Kara East.

There were some hard feelings when Snow was released from the general manager position and it was commonly thought that the company should be sold. According to Snow, "The reason that Snow Aeronautical was sold to Rockwell Standard was because my partnership began to fray. We all had different objectives for the future, were not getting along and there was just a lot of stress involved in the partnership. I read in an aviation magazine that a company named Rockwell Standard wanted to broaden their product line and they were actively purchasing small aircraft companies. I contacted Rockwell, told them about the business and asked them to visit the company. We sold Snow Aeronautical to Rockwell in late



Aircraft at the Air Tractor plant wait to be finished.

1965 for \$1 million." Snow was hired as general manager of the Olney division of Aero Commander and then was appointed as a vice president in the Aero Commander division.

Soon he started to hear rumors that the plant location would be moved from Olney to Albany, GA. Snow decided that he needed to design and build an aircraft that could make a profit to keep the Olney division open. He ultimately designed and worked to build his S-2R Thrush aircraft. Because Rockwell turned down a previous design and aircraft concept, Snow assumed his new design would also be turned down, so he decided to just draw the designs for the

S-2R, build the aircraft and seek out the certification without the president knowing what was going on. As Snow states in his newly published book, *Putting Dreams to Flight*, "There were five different presidents during the four years I was employed by the company. The fact that we were having this high turnover rate was probably one of the reasons I was able to get away with building the airplane without any official approval." The presidents were located in Pittsburg, which also made it easier for the staff to build the aircraft without being noticed.

Unfortunately in January 1970, he was informed that the Olney location would move to Albany, GA, and he would be offered a job. Snow declined the offer and stayed on until the move was complete in March 1970. The first 100 Thrush aircraft were built at the Olney division before the plant was closed. More than 500 aircraft were produced under Snow Aeronautical and Rockwell-Standard in Olney. Snow did not waste any time and the next morning after the completion of the move, he started working on a new aircraft design, which he named the Air Tractor.

### Air Tractor

Construction began in 1972 on the AT-300, which later became the AT-301. When asked about the greatest accomplishment in his life, without any hesitation, Snow responded,

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“When I first started Air Tractor. I walked into an empty building in July 1972 and the following September 27, 1973, I flew the first airplane that was started in that building. I am so proud that we flew the aircraft three days ahead of schedule, with only four employees working for Air Tractor, and we completed the project under budget. We had received an SBA loan of \$180,000 to build and certificate the first plane and finished with \$5,000 left over.”

In 1975, production was moving along quickly and Snow soon realized that Air Tractor needed more space. He and his staff moved into

“Plant One” at the Olney Airport, with 54,000 square feet of space, in November of that year. During the next several years, Air Tractor would develop and sell many different types of Air Tractor aircraft. (See sidebar on page 19 for Air Tractor timeline.)

Rick Reed of Reed’s Fly-On Farming in Mattoon, IL, said of Leland, “I bought my first Air Tractor in 1981 and picked it up from the factory. Leland himself walked me around the aircraft and ‘checked me out.’ I was impressed by how totally unpretentious he was then, and he is that same man today. For a man who has attained legend status in

his own time, I find that extraordinary. He has taken pride in each and every airplane he has built and feels a personal responsibility to those pilots who buy and fly his airplanes. He and his Air Tractors are the heartbeat of this industry and can be credited for helping the growth of aerial application throughout the world.”

In 1990, Air Tractor flew the first AT-802, which was developed for firefighting but later found wide acceptance for the treatment of agricultural crops. In 1997, the 2,000th Snow-designed, Olney-built aircraft rolled out of the factory doors and the company opened “Plant Two” at the



### Leland Snow’s Book: *Putting Dreams to Flight*

Earlier this year, Midwestern State University Press in Wichita Falls, TX, published *Putting Dreams to Flight* by Al Cleave, as told to him by Leland Snow. This book is a great read for anyone in the aerial application industry, whether you’re an Air Tractor owner or not. The book goes into depth about the history of Air Tractor, as well as the history of Snow, his daring flights and parachute jumps in his younger years and his dedication to building each of his aircraft. Nothing stopped Snow from building his aircraft and it’s an empowering story about his life’s mission to help ag pilots have an aircraft dedicated to the aerial application industry. The book is a quick read at 157 pages and is a must-read. *Copies of the book are available on the Air Tractor website at [www.airtractor.com](http://www.airtractor.com).*

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Propellers are lined up in the Air Tractor plant waiting to be added to airframes.

Olney Airport, with 57,000 square feet of additional space.

In 2002, the first of many highly-modified and armored AT-802s was delivered to the U.S. Department of State for use in narcotic crop eradication in Colombia. By 2008, Air Tractor had delivered 280 AT-802s. Snow states that he owes a lot of this success to the late Chuck Kemper of Queen Bee Air Specialties in Rigby, ID, and Vicente Huerta Jr. in Valencia, Spain, who helped Air Tractor become a competitor in the international market, with the AT-802 used for firefighting. In 2004, the 2,000th Air Tractor was manufactured and delivered.

According to Chip Kemper, co-owner of Queen Bee Air Specialties in Rigby, ID, "We've been an Air Tractor

dealer since the mid-80s. My dad, Chuck Kemper, had a history in sales. With this background, he became interested in selling Air Tractors for Leland Snow and he helped Leland get into the firefighting sector. Our company was one of the first to purchase an Air Tractor and the first plane we received was serial No. 11. Since then, we've operated and sold Air Tractors. We've always had a great relationship with Leland. I believe besides having a business relationship, it has been a friendship as well and we'd like to think that's a two-way street."

Today, Air Tractor produces a line of aircraft that includes the 400-, 500-, 600- and 800-gallon capacity planes powered by Pratt & Whitney piston or turbine engines. Air Tractor has

grown from a little company in Olney, TX, to an international competitor in ag planes. Air Tractors are working all over the globe, including in Canada, Mexico, Central and South America, South Africa, Australia, New Zealand, Spain, Croatia, Saudi Arabia, South Korea and China.

Air Tractor has dozens of employees who have worked for the company for two or three decades, which is impressive for a small company. Snow stated, "I went into business for myself because of the freedom of being an entrepreneur and in return, I've provided my employees with as much freedom as possible. I trust my employees and give them the opportunity to go beyond their job description if they want to try something else in the company. I think those two items combined create a good working environment."

He added, "I was with Rockwell for a little more than four years and there was so much effort required to cover up mistakes and not get blamed. I realized that everyone makes mistakes, but at Air Tractor I expect there to be recognition when a mistake happens. I'm of the opinion that mistakes come from the people who do the most work."

According to Byron Nelson, owner and operator of Frontier Agricultural Service Inc. in Calexico, CA, "Our small family business believes lower maintenance costs and higher production in the field are two very important reasons that have enabled our agricultural operation to remain in business and we believe this is due to Air Tractor."

## 50th Anniversary Celebration

On April 5, 2008, in Olney, TX, several hundred people celebrated the 50th anniversary of Snow's move to Olney, TX. The celebration included aerial demonstrations featuring aerobatic performers, an open house tour of the Air Tractor factory, a presentation ceremony and a dinner, dance and fireworks. The celebration was attended by Air Tractor employees, dealers, vendors, Olney residents and elected dignitaries at the company's

*continued on page 20*



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## Air Tractor – 57 Years In The Making

*Courtesy of Air Tractor Inc.*

- 1951 – Design of Snow S-1.
- 1953 – Snow S-1 Test Flown.
- 1955 – Snow S-2 Test Flown.
- 1958 – Snow Aeronautical Company moves to Olney, TX, from Harlingen, TX; starts with six employees. The first plane, S-2B, completed and flight-tested. FAA certification received. Ground broken for new manufacturing plant.
- 1959 – Company moves into new facility. First three planes leave the factory. First-production S-2B flown.
- 1960 – First delivery to a foreign country (Panama).
- 1961 – S-2C test-flown. 100th plane delivered to Mississippi operator.
- 1963 – First flight of the S-2D prototype.
- 1964 – Company moves into new office building and expands plant facilities.
- 1965 – Production increases to one plane every three working days. S-2D certification completed. Snow Aeronautical acquired by Rockwell-Standard.
- 1966 – First S-2R test-flown.
- 1970 – Rockwell moves ag plane production to Albany, GA.
- 1972 – Leland Snow begins construction of the first Air Tractor.
- 1973 – AT-300 test-flown.
- 1974 – AT-301 test-flown.
- 1975 – Twenty Air Tractors delivered. Twenty-four employees move into new plant.
- 1977 – AT-302 test-flown.
- 1979 – AT-400 test-flown.
- 1983 – AT-250 test-flown.
- 1984 – AT-500 test-flown.
- 1986 – AT-503 test-flown. AT-401 test-flown.
- 1987 – AT-501 test-flown. AT-502 test-flown.
- 1988 – AT-402 test-flown.
- 1990 – AT-802, world's largest ag plane, is test-flown.
- 1992 – AT-502A test-flown.
- 1993 – 1,100th Air Tractor delivered.
- 1995 – AT-602 test-flown.
- 1996 – Groundbreaking for new 55,000-square-foot facility in Olney, TX. 1,400th Air Tractor rolls off the assembly line. AT-402A test-flown.
- 1997 – 2,000th Snow-designed Olney-built aircraft delivered. AT-401B certified for 7,000 pounds gross weight. Opened plant #2: 57,000 sq. ft. of additional space. 110 aircraft manufactured.
- 1998 – Celebration of 40 years in Olney, TX. Dropped boom introduced for all models.
- 2002 – First highly modified and armored AT-802 delivered to U.S. Department of State for narcotic crop eradication.
- 2005 – 200th AT-802 delivered to Conair Group, Inc., British Columbia.
- 2006 – AT-602 and AT-802 Ram Air inlet approved and installed. Air Tractor receives International Torch Award for Marketplace Ethics from Better Business Bureau.
- 2007 – First Fire Boss on contract in United States. Prototype AT-504 introduced at the NAAA Convention in December.
- 2008 – AT-402 and AT-502 Ram Air installations approved and installed. Celebration of 50 years.



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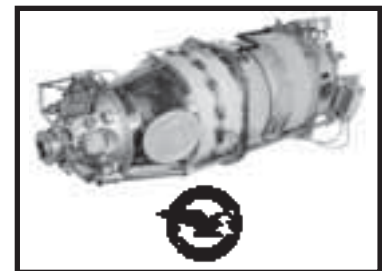
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Olney, TX, manufacturing facility. The occasion honored not just Snow, his career and innovations, but also the many people who, through the years, helped Snow make his vision take flight. At the anniversary celebration, Snow unveiled his new book, *Putting Dreams to Flight*. (See sidebar on page 17 for more information on the book.)

According to Peter Mackay of Field Air Group in Ballarat, Australia, "I always think that it is a privilege to be an Air Tractor dealer. Leland produces an aircraft that is the world's best ag plane and he continues to develop these planes with a thorough understanding of what the industry needs. Leland holds genuine principals of servicing the customer requirements, he is open and honest to deal with and he underpins his business with a strong engineering foundation. Leland is unassuming of the success and vast contribution that he has made to the worldwide productivity of agriculture. It is highly evident that everyone involved in the production of Air

Tractors is proud and motivated to be a part of the success and positive direction that Leland gives to this business. Despite his busy schedule, Leland makes the time to know his customers, to listen and to understand; I believe that he knows all the customers in Australia and he is respected for his approachable, genuine nature."

### The Future Of Air Tractor And Leland Snow

When asked about the future of Air Tractor, Snow responded, "We are not slowing down. Air Tractor has been working on developing a bigger plane, which is the AT-1002 1,000-gallon Air Tractor, for about six years and I'm looking forward to having that aircraft available. I've also been working on a 10-seat utility airplane, but it was shelved for awhile because our resources had to go toward the development of the state department plane for narcotic spraying in Colombia. These days we're focusing on the 1,000-gallon aircraft and then I'd like to get back to the 10-seat utility

aircraft. My vision for the utility plane is to fly in remote areas, hauling passengers and freight. It will be a different type of plane than other Air Tractors, but because we're efficient at building planes, we think we can successfully market this type of aircraft."

He added, "In regards to the 1,000-gallon aircraft, we would like to see this plane on floats, which would create competition for the Canadair firefighting airplanes. We think we'll play a more substantial part in the firefighting industry with the 1,000-gallon Air Tractor. Currently, 80 percent of single engine air tankers (SEATs) are Air Tractors and our planes are established in foreign countries, such as Spain, Italy and around the Mediterranean, for firefighting purposes. Greece will also have some 802s on hand in case it has fires again like it did last year."

When asked about retirement, Snow replied, "I will always be involved in Air Tractor as long as I am able. I really enjoy working and I like what I do. Because of my dedicated work

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over the years, I haven't developed any specific hobbies or interests, or at least not enough to sustain me in a retirement. I like to work and I can still contribute to the industry."

He did start running in 1986 because an FAA doctor informed him that he needed to lower his blood pressure. "I do like to run and I still run every day. I get out on the street and I run hard because it's good for me and will lead to a longer life." Snow has kept a journal of his running mileage and between the years of 1986 and 2008, he ran a total of more than 16,000 miles. He has completed two 26.2-mile New York marathons, as well as the Dallas White Rock Marathon.

Snow added, "I really enjoy my home. My wife, Nancy, has made and provided me with a very loving home. This is very important to us and I'm just content to take up pursuits around the home and I also enjoy working from home. We are also expecting our first grandchild and that is exciting." His daughter Kristin, who is the vice president of sales for Air Tractor Inc., and her husband, Trevor Edwards, are expecting their first child this year.

According to Leonard Felix, operator of Olathe Spraying Service Inc. in Olathe, CO, "Leland and Air Tractor have always been there for me. Whether it's answering a question or helping my company, I feel like I've been his only customer and I know that's not the case. He is so dedicated to every one of his customers and he truly cares about each of us and the industry. I know I can call Air Tractor and get a quick response. Leland has always taken care of me and he's always looking out for my best interests."

### A Philanthropist For The Industry

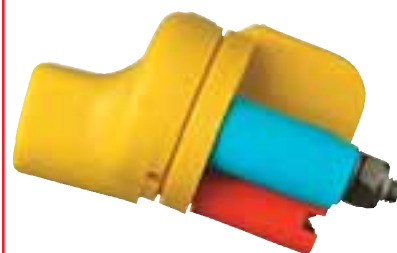
Air Tractor and Snow have not only contributed to the industry through aircraft, but he also sponsors industry events and donates money to various projects in the industry. He has been very generous in donating funds to the National Agricultural Aviation Association (NAAA) for the National office, sponsoring at the National convention each year, sponsoring the new industry

video that will be available at the end of the year and donating hundreds of thousands of dollars to the National Agricultural Aviation Research & Education Foundation (NAAREF). Snow has been a driving force behind ensuring the NAAA can be the best it can be. He stated, "It is important to Air Tractor to be a philanthropist to the aerial application industry. We've done well with our product and we've worked hard to make a profit. As long as that continues, we will continue to give back to the industry because we have benefited so much from the industry. I want NAAA to be a strong organization and be able to help us and other sectors of this industry. I not only plan to continue donating funds to industry projects, but I'd like to do more when I can."

According to Dana Ness, operator of Ag Air Inc. in Chester, MT, "My dad started buying Air Tractors years ago when he started his business, and Dad always had a great relationship with Leland. It's nice to have someone as committed to the ag aviation industry as much as Leland has been and he's contributed so much to our industry. He's helped spread the good word about our industry far and wide. Any problems that we've had, Air Tractor makes them go away and we are grateful for its help through the years."

Air Tractor hopes to expand its gifts to the industry. Snow added, "We've been so focused on so many projects within our company that we have not spent as much time as we should looking at ways to help the industry where help may be needed. I want to fix that. We want to expand our giving and it's appropriate and easier now that we've had many years of doing well."

Snow stated at the end of his book, "Whenever I'm tempted to slow down and maintain status quo, I try to reject the urge because I feel that slowing down results in precious time being lost, time that can never be regained. There are too many things yet to be done for me to waste a day of my life. This philosophy has been the driving force throughout most of my years in aviation. It has served me well." ✖



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# FUEL FOR THE FIRE

By Bill de Decker



In 1970, the cost of Jet-A was 50 cents per gallon, and a barrel of oil cost \$2.50. Today, oil is well above \$125 per barrel; Jet-A is \$4.00 to \$4.50 if you have your own fuel tank and buy from a distributor, or it is \$6.00 to \$7.00 per gallon if you have to buy it at an FBO. That's double what it was even 3 years ago. This increase has had a tremendous impact on the economics of aviation operations, with many operators adding fuel surcharge clauses in their contracts. It has also caused all operators to look for ways to lessen the impact. Before we talk about the available options, let's take a look at what's included in that price per gallon.

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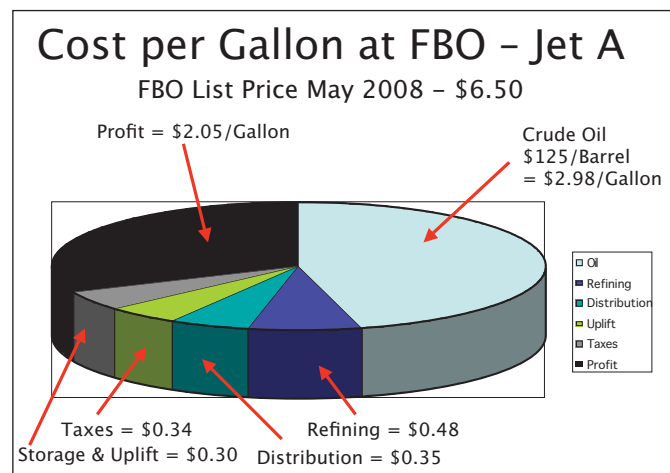
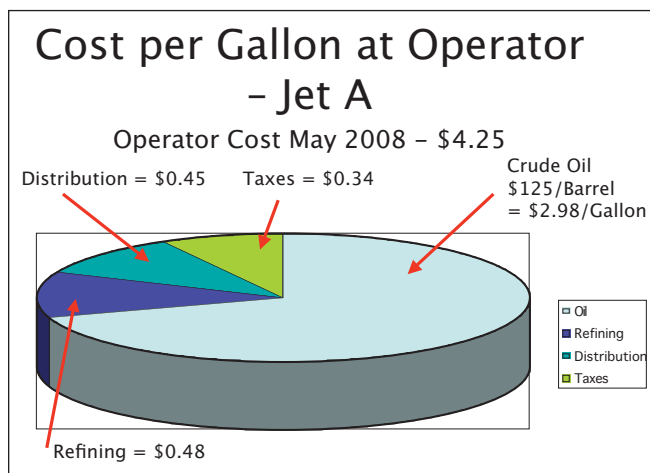
This is illustrated in the following two pie charts. The first shows a typical cost of \$4.25 per gallon of fuel when you buy from a distributor and have your own fuel storage; the second shows a typical cost when you have to buy fuel from an FBO.

Looking at these charts shows several interesting facts. One is that crude oil represents almost \$3.00 of the total cost per gallon and the other is the difference in cost between fuel delivered by a distributor to your base of operations and the list price of fuel at an FBO. The largest portion of the difference is the FBO's markup of just over

\$2.00 per gallon. Equally interesting is that everything else – including taxes – amounts to only about \$1.25 to \$1.50 per gallon. Based on this information, what are the options to decrease your fuel costs?

## Crude Oil

At first glance, it may not appear that there is much maneuvering room in this cost. However, consider that in 2007, Southwest Airlines paid about \$0.60 per gallon less for the crude oil that went into its Jet-A than the average open market price. This allowed them to be far more profitable than any of their competitors. How did they do this? Well, they bought fuel for delivery in 2007 in earlier years when the average cost per barrel was lower. So, when 2007 came around, they



were taking delivery of \$51 per barrel of oil while everyone else was paying an average of about \$75 per barrel – a difference of about \$24 per barrel or about \$0.60 per gallon (there are 42 gallons in a barrel).

The interesting fact is that anyone can do this, and futures contracts can be bought for up to 60 months from now. For example, right now a buyer can purchase a contract for delivery in December 2010 at \$127 per barrel. If 30 months from now, the price is \$150 per barrel, the buyer has locked in a price advantage of \$23 per barrel or about \$0.55 per gallon. Of course, if the actual price is \$105 per barrel, one hopes that they sold before the asking price went below \$127 or they would sustain what could be a substantial loss of \$22 per barrel. This strategy is called “hedging” and involves a good deal of risk. Minimizing the risk requires a lot of attention.

Some other problems that prevent most operators from participating in this arena are that the minimum contract size is 1,000 barrels or 42,000 gallons. The purchase of one of these contracts requires cash or a line of credit equal to the price of a contract – \$125,000 for one 1,000 barrel contract. One way to decrease the need for cash is to purchase options rather than contracts, but that further increases the risk. Other problems include the need to store 42,000 gallons when it is delivered, along with the fact that, while there are futures markets for gasoline and diesel fuel, there is no futures market for Jet-A. Instead, what Southwest acquires is a mix of crude oil, gasoline, diesel and home heating fuel futures to mirror the price behavior of Jet-A. The way this works is as follows. Let’s say you have bought two contracts (84,000 gallons) of home heating oil for delivery in December 2009 at a cost of \$3.60 per gallon. Over the course of the next 18 months, the price keeps on going up; and in November 2009, the price for home heating oil for delivery in December 2009 is \$4.10 per gallon. At that point you would sell your two contracts, making a profit of \$0.50 per gallon – which, in effect,

would reduce the actual cost of the Jet-A delivered to your tanks by the same amount.

It’s clear that this is a complicated and high risk way to decrease the cost of fuel. But as Southwest has shown, it can work very well if the operator has high annual fuel needs. One of the main trading floors for fuel and oil futures is the New York Mercantile Exchange (NYMEX.com). Their website contains a wealth of information about the futures trading/hedging business and makes for very

interesting reading on a long cold winter evening.

Note that the futures market and hedging is nothing new to many of the large agricultural growers – they use the futures market to lock in prices for their crops to protect themselves against the vagaries of the market.

### Refining, Transport, Storage, Uplift And Taxes

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*continued on page 36*

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# CREATING POSITIVE PUBLIC RELATIONS THROUGH GOOD STEWARDSHIP

By Lindsay Barber, NAAA Director of Communications

**A**g pilots must maintain the utmost professionalism in all aspects of their businesses. Professionalism includes everything from being a member of the National Agricultural Aviation Association (NAAA) and the state/regional associations, to maintaining proper spray records, to calling customers – and others with concerns – back in a timely manner. Professionalism also involves communicating positive messages to government leaders, media, school groups and everyone in your community. It is important to inform people about the aerial application industry so that they understand the important things ag pilots do and the precautions they take to do them safely. Talk about the work done by aerial applicators and how the industry

positively impacts agriculture, food, clothes and fuel for heating, manufacturing and transportation. Unless someone explains what that little plane is doing flying 140 mph, 10 feet above the crops, no one will understand. It is the job of everyone in this industry – from NAAA to allied suppliers to pilots, operators and ground crew – to explain what we do and our positive benefits to American agriculture. This is not only called professionalism, but it is also being a good steward.

Professionalism and good stewardship not only involve being an educator about the industry, but it also includes acting in a manner that will be welcomed in the community. A number of operators can attest to the statement that “just because one has the legal right to do something, does

not mean other people will be okay with it.” There is ample evidence in the industry, however, that shows if aerial application businesses work with neighbors and other people in their communities, they will be more respected and appreciated in their communities.

According to NAAA Executive Director Andrew Moore, “We are flying more; the ag economy is healthy; commodity prices are high; farmers are being paid more, and they’re using aerial application services, which means we’re flying more; we’re three-dimensional as opposed to other forms of application, which are two-dimensional, because we’re in the skies. As ag pilots fly more hours, the industry needs to ensure that it practices good stewardship and leaves a positive public image.”



*Conduct field days with students in your local area to inform them about the benefits of aerial application.*

## Good Steward in the Community

Leonard Felix, operator of Olathe Spray Service, Inc. in Olathe, CO, stated in the fall 2007 Colorado Agricultural Aviation Association newsletter, “I station Melody, my observer, on the county road to help me keep track of traffic. Traffic is coming and going pretty regularly, but she keeps me posted on the radio so I can adjust my passes to keep from scaring someone half to death. Sometimes they stop to watch, so she asks them to do so at a safe distance.”

Felix added, “In regards to community support, I suppose the most valuable thing we do in our area is firefighting with the aircraft. We have been involved in many wild fires over the years. We’ve worked on a couple of fires that involved heavy fuels

and one that involved a pallet fire at a sweet corn processing plant. Last year, and this year, the local fire department called for the helicopter and the Bambi bucket for controlled burns that the wind swept into subdivisions, and we were credited with saving homes and structures. We also do search-and-rescue and I, along with my sons Deven and Seth, have all helped find lost hunters or hikers. Last September, Deven rescued a lady off the top of a 14,000-foot mountain on the continental divide, and that same day he found a lost hunter. People in our community seem to appreciate when we do our job, especially keeping the fires away from the community.”

J.R. Reabe, operator of Reabe Spraying Service, Inc., in Waupun, WI, also works to ensure that his pilots are aware of sensitive areas and can avoid people with known concerns. “Our spraying service has master maps of our area that detail the location of all the people who have complained to us in the last 25 years. Each work order contains a small map of the field, as well as the location of all of the people who complain and exactly what their concern is. For those who want notification before spraying a neighboring field, their phone numbers are provided, and at the bottom of the work order is an area where we log the notification. Therefore, the pilot can be sure that they’ve been notified before he starts spraying. Besides the work order, pilots also have an area map for navigation that includes the complainer’s location highlighted in red and a one word complaint code for each. This gives the pilot information he needs to avoid bothering them, even if he is just ferrying.”

Reabe Spraying Service also uses many techniques to work with the person issuing complaints. Pilots will time their applications and spray when the neighbors are at work or when the cows are in the barn. They will also fly the field from a different direction, or pattern, or even use a helicopter so that the pilot doesn’t have to cross a property line. Reabe added, “If the complainer feels that we are trying to work with them, they will generally

***“I believe that ag pilots should have good morals and ethics – both in and out of business. This way of life is the first step that will make people believe us and believe in the good that our industry does.”***

***Rod Thomas, Thomas Helicopters, Inc.***

give us a little slack, and we can both win; we can spray the field without lawyers getting involved, and they feel relief from their legitimate concerns about the application.”

Besides working with neighbors to apply products at different times, many operators also become very involved in their communities and show support. This includes everything from participating in community events, to conducting field days at the operation, to helping to clean up or assist in building new structures in the community.

Craig Bair of Ag Flight, Inc. in York, NE, stays very involved in community events. His company participates in several hunting banquets by attending or sponsoring events, such as “Ducks Unlimited,” that take place in his local area. He also donates 100 acres of spraying to a church’s auction – something that has given his company a lot of recognition. Bair will also donate money to high school or middle school children if they come to his operation to ask for a donation. Ag Flight actively participates in working with the local and state firefighters’ association to educate firefighters about aerial application, including the aircraft and the crop protection products used in emergencies. (*An article about educating firefighters and EMT personnel will be in a future issue of this magazine.*)

According to Rod Thomas, operator of Thomas Helicopters, Inc. in Gooding, ID, “I think everyone should work to be a good steward and a good neighbor in their communities. I let our neighbors know that we’re an integral part of the community. For example, when a community event happens, I always make sure we participate. I always hang the biggest banner and have a truck at the events. When the

high school teams need money, I’m always there to help. I always have pilots at the schools speaking, and I have kids out to my operation to learn more. I also do customer appreciation certificates and offer a free lunch or dinner at a local restaurant. I recommend serving on governing boards in your community; give back and help build pools, play grounds, hospitals, etc. If you act as a pillar of your community and non-farming neighbors see that, they forget that you’re spraying crop protection products for a living – something that can be an activity they don’t need or appreciate.”

### **Good Stewardship with Other Agriculture Groups**

According to Terry Sharp, operator of Agri-Tech Aviation, Inc. in Indianola, IA, “My operation not only acts as a good steward in our community, but also the entire agriculture community in our state. I was asked to participate on a committee – put together by our Iowa Secretary of Agriculture Bill Northey – that was convened to discuss aerial application issues that were brought to light last summer. In our area, there were many out-of-state applicators working and unfortunately, not all acted professionally. The committee members include people from the fruit and vegetable association, the organic association, the Iowa Honeybee Association, the seed corn industry and four aerial applicators, all of whom are NAAA members, including myself; Joel Meyer of Meyer Agri-Air, LLC in Wellsburg, IA; Dennis Meyer of Steier Ag Aviation, Inc. in Whittemore, IA; and Ralph Storm of Storm Spraying Service, Inc. in Webster City, IA. We spent half a day listening to the concerns of the other groups, and we discussed how applicators work and what we can do to help protect

the other sectors of agriculture in the state.”

Sharp added that he has started working with the organic association in his state to develop a sensitive area registration system. This system is voluntary, but all of the agriculture groups in Iowa will be able to register their crop locations on a master register, and applicators can view where these sensitive locations exist. “I don’t think this will solve the problem, but hopefully it will somewhat help the situation,” Sharp said. “This will allow us to stay away from organic fields if we know where they’re located. But, because organic fields look similar to conventional fields, I also went a step further and helped the organic people develop a sign, which will be distributed to all organic farmers. The sign can be posted on their fields, and the signs are visible from the air. I found out this is something that has some funding backing it by taxpayers, and I also raised \$10,000 for the project. Operators and pilots working in the state will see these and know they’re sensitive areas.”

Bair is involved with agricultural groups in Nebraska. He works with the Nebraska Wine and Grape Growers Association to make vineyards more visible from the air for ag pilots.

Vineyards are extremely difficult to spot because they’re usually located in the middle of a pasture. “The president of the vineyard association spoke at the Nebraska Aviation Trades Association (NATA) meeting about when the best time to spray and when we can apply around vineyards where aerial application services are taking place.”

After the NATA meeting, Bair and several other operators attended the vineyard association meeting where

*Besides working with neighbors to apply products at different times, many operators also become very involved in their communities.*

all the vineyard owners supplied the locations of their vineyards. Before the meeting, NATA designed a 3-by-6-foot flag that had the NATA logo on one side and the vineyard association logo on the other side. Each vineyard owner was given two flags to place on their properties.

Bair added, “From there, the Nebraska State Department of Agriculture volunteered their services to take all the information, create a map

of the entire state and label the location of all the vineyards. This has been very helpful to all the ag pilots, and there are probably less issues with this group because of the work we’ve done. We may also start working with the organic growers to set up this same type of map.”

Bair re-iterated that it is important to communicate with all the agriculture groups in your state, because you can develop a good relationship with them. Once he builds a relationship with growers, he supplies them with a photo of his airplane so that they know who is out spraying. If they see a different plane, they often call him, and Bair explains who is working the field. Bair stated that development of these relationships can quickly solve problems should issues arise.

### Good Stewardship in the Industry

Besides being a good steward in the community and with other agricultural groups, it is also important not to forget the aerial application industry. Everyone in the industry should act in the same way – professional and ethical – because once one person makes a mistake, the community and media view it as an industry-wide issue.

According to Thomas, “I believe that ag pilots should have good morals

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***“If the complainer feels that we are trying to work with them, they will generally give us a little slack and we can both win. We can spray the field without lawyers getting involved, and they feel relief from their legitimate concerns about the application.”***

***JR Reabe, Reabe Spraying Service, Inc.***

and ethics – both in and out of business. This way of life is the first step that will make people believe us and believe in the good that our industry does. I expect people who I do business with to trust me. Our industry is in a unique situation where we deal with hundreds of thousands of dollars in crop protection products, and if our customers or people we deal with can't trust us on a small matter, they won't trust us when it comes to applying these products. For example, some people in this industry get away with cheating their customers out of a little chemical or water, because how will the customers know otherwise? Growers rely on ag pilots to be the professional they come to for advice. If they discover a lie, that will be bad for the entire industry and not just that one pilot. You should not want to be that type of person.

“Pilots who come in and undercut pilots in the local area – or pilots who don't do a good spray job – are not people you want to do business with. It is not ethical, and they're cheating other pilots as well as the growers. We must all work together in this industry. When pilots are visiting from out of state to do work, they should respect the areas they're visiting and leave it as they arrived. It is like the statement, 'leave no footprints.'”

Sharp also mentioned that pilots need to be aware of state laws and regulations. “An issue with non-resident pilots working in Iowa is that all ag pilots are required to have containment and loading sites, and most non-resident pilots bypass this and don't pay any attention to it. Also, if an ag pilot is in Iowa for 30-plus days, they must register their aircraft with the Iowa Department of Transportation. Non-resident pilots use public airports, which the airports like, because the pilots are buying fuel. But, the public who own planes at the airport don't like it. I attended an airport authority meeting to talk about the excess of planes and was told that private pilots couldn't access their personal aircraft because of the influx of ag planes and the retailers trucks and equipment. Incoming pilots and the retailers really need to take notice of this. Pay attention and be ethical. There are other people at the sites to take into consideration.”

Sharp added, “I believe all applicators intend to do a good job, but someone needs to supervise non-residents and give them accurate information to do a good job. I believe that ag pilots entering a new area to work need to be professional and have strong ethics. This is one of the most critical issues for our industry. It takes a lot of pilots

to get the work done that we need done, but I believe that non-resident pilots should be somewhat supervised or given information from resident pilots about the community and sensitive areas.

“I just ask that every pilot going to work in a new area have some professionalism and be ethical. Learn the state's rules, and learn about the area by calling a local operator to ask questions about the community and where sensitive areas are located that need to be avoided. Get insight from local operators.”

Thomas reminds all applicators, “Everyone should remember the PAASS mantra – ‘Upon the performance of each rests the fate of all’ – because it is a fact.”

*How do you, as an operator and/or pilot, practice good stewardship practices in your area of the country? Let NAAA know by email at [information@agaviation.org](mailto:information@agaviation.org) to be included in a future article.* ✕

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# SOYBEAN APPLICATIONS INCREASING WITH RISING PRICES

By Mary Lou Jay



*A pilot sprays a soybean field. Photo courtesy of David Glover.*

**T**he U.S. Department of Agriculture calls soybeans the most important grain legume crop grown in the United States. It's easy to see why. The oil from the versatile plant is used domestically for food products such as salad dressings and margarine; the meal is an important source of high protein animal feed; and the plant can be used for biodiesel fuel. The soybean even helps our balance of trade; U.S. growers exported \$8.9 billion of soybeans in 2006.

Agricultural aviation has played a role in soybean production almost since the crop was introduced in the U.S. in the 1920s. With prices for the crop relatively low, however, farmers usually called aerial applicators only when there was a specific threat to the beans from pests or disease. But the steep increases in prices and the arrival of Asian Soybean Rust (ASR) and new pests have led to an increased demand for aerial applications.

## Spraying Reduces Rust Risk

ASR is a fungus that can reduce soybean yields by as much as 80 percent. It was found in Japan more than 100 years ago and over the years gradually spread via spores to Asia, Africa, Europe and South America. ASR made its first appearance in the continental U.S. in 2004, with reports of infected fields in nine states. By 2007, 19 states were reporting some fields with the rust.

Aerial applicators are seeing an increasing demand for their services as farmers take preventive measures.

"We do a lot of preemptive strikes on soybean rust," says David Glover of Glover Aviation in Tillar, AK. "The growers just put on Quadris®, a fungicide produced by Syngenta Crop Protection, or Headline®, a fungicide produced by BASF, as a preventative measure.

"We have found Asian Soybean Rust in the county, but it has always been a little late getting here," he continues. "But every year it seems to be getting here a little sooner. It's something that we can't predict. Last year, we had one field in the county with damage due to soybean rust, but they keep finding spores here and they keep warning us that we could have a problem."

Aerial applicators in other parts of the country report similar increases in fungicide applications on soybeans over the last few years.

## Higher Prices And Better Yields

Soybeans jumped from \$4 or \$5 a bushel a year ago to an average of \$12.62 on May 9, 2008, so spraying the crop to increase yields makes good economic sense. Chuck Holzwarth of Holzwarth Flying Service in Virden, IL reports that 70 to 80 percent of the soybeans he has treated show yield increases, sometimes as high as 10 to 15 bushels an acre.

"We're using more fungicides today than we ever have before," Holzwarth says. While it would have previously taken a five or six bushel increase to make aerial applications cost effective, now farmers can cover the costs with just an extra bushel or two.

Barry Jo Wilson of Wil-Co Flying Service in DeWitt, AK has seen a change in his customer base. "We do a lot of seed beans here, and the seed companies spray for all diseases, like frog eye and leaf spotter, not just soybean rust," he says. "They also found that they can get an eight to 15 bushel increase by spraying with fungicides. So now farmers who are just growing regular beans are having us spray them, too."

For many years, corn was the mainstay crop for Bart's Flying Services in Storm Lake, IA, but in the last five to eight years, soybeans have taken prominence. "Today they are probably three-quarters of our business," says company pilot Mike Bartholomew. The appearance of new pests, such as bean leaf beetles, spider mites and aphids has triggered this increase, he says.

Glover sprayed 25,000 acres of soybeans last year, and expects to do as much or even double as many this year.

"Soybeans have always been a stepchild, a filler crop in this area, but with the prices they're getting now, farmers will treat them more like a crop than they have before," he says.

"We've got the micro-managers who will treat their soybeans religiously, regardless. But then you have the farmers who previously treated only after they got an infestation. Those are the growers that I think we will be picking up this year."

Glover says farmers are planting more acres in soybeans. "For 20 or 30 years we have done mostly cotton and rice with a small amount of soybeans," he explains. "But this year my seed growers say we will have a 40 percent cut in cotton and an eight percent cut in corn, and some of this land is rolling into soybeans."

That's not a positive change, however. "Soybean applications don't measure up to cotton applications. We'll treat cotton six to 10 times a season, while soybeans will be as few as one and as many as three times," Glover says.

## Summer Applications

Farmers plant soybeans from late April through early June. Most pretreatment of soy fields is done by ground rig, but Glover starts his soybean spraying in April with burn downs of a few thousand acres using Roundup® and 2,4-D on Roundup®-ready beans. Bartholomew also does ground preparation work if the spring is an exceptionally wet one and ground rigs can't get in.

Aerial fungicide applications sometimes continue into July, and insecticides are done in August through early September.

"Generally, one type of application is usually sufficient for each type of treatment. Farmers tend to time them a little differently, although sometimes they will combine fungicide with insecticide. A lot depends on the weather we have and how it hits. If the bugs start chewing early, we may have to go in with a second application to control reinfestation," says Bartholomew.

Glover says the micromanagers in his area will usually spray three times, twice with fungicide alone and once with a fungicide and a pyrethroid. "This year we will have a lot of soybeans behind wheat, which means that we will have some late soybeans," he comments. "Those are usually treated more

heavily. At that time of year, they are more likely to have rust or fungus and they'll get more treatments for worms or other pests, such as grasshoppers."

"Our soybean treatments have really been a mixed bag; every one of these guys seems to treat things a little differently," Glover adds. Some of last year's mixes were glyphosate, Headline®, Quadris® and CoRoN®, Quadris® and Karate®, methyl parathion for stinkbugs, and Orthene™, Intrepid and Tracer for cabbage loopers.

"Depending on the conditions, the main problem we have in soybeans in Central Illinois is spider mites, soybean aphids and bean leaf beetles," said Holzwarth.

Quilt® and Headline® are the most popular fungicides with Holzwarth's customers, although some farmers use Stratego®. Fungicides generally get just one aerial application. "If we ever do get soybean rust, there are fields that might require more than one application but that depends on the time of year and what stage the plant is in," Holzwarth says.

Stinkbugs and worms create most of the insecticide work for Wilson in southeast Arkansas. "The stinkbug has become a big problem because it gives the soybeans green bean syndrome. Once the stinkbugs sting a plant, the bean's stems stay green and they don't drop their leaves very well," Wilson says. He primarily uses methyl parathion, some pyrethroids and Orthene™.

In Iowa, Bartholomew generally sprays Headline® as the fungicide and Lorsban®, Warrior® and Asana® as insecticides. If the fall weather is unusually warm, and no frost occurs to kill off the soy plants, Bartholomew will also do some burn down of the soybean fields as a pre-harvest aid.

## Calibration And Spraying

Treating soybean fields by air offers farmers several advantages.

"The advantage of air is that if it's wet we can go, and with our speed we can get more covered in a day," says Glover. "And in our area, if it's hot, and they're irrigating a lot, they won't want to drive over the irrigation pipe."

"There is some competition from ground rigs, but when bean prices get this high, the farmers don't want ground rigs rolling over them," Holzwarth adds.

Bart's Flying Services uses two Piper Braves, an Ag Cat and an Air Tractor 401 in treating soybeans. "They provide a more even application than ground rigs," says Bartholomew.

"We get pretty good coverage on the canopy [with insecticides] due to the fact that as the aircraft goes across the field, all the air that's disturbed makes the bean leaves flip upside down," says Bartholomew. "Ground rigs just can't get that kind of coverage. Ground rigs are also going to have a bigger droplet size, like raindrops, so the droplets hit the top of the leaves and run off. The drops don't get to the bottom of the leaves where the aphids congregate."

Aerial application benefits soybean growers because the planes don't touch the crop canopy, as a ground rig would, which means that diseases, such as ASR, would not be spread to other fields. Also, an airplane or helicopter can accomplish three times the amount of work in a day than ground equipment or any other form of application. This means less fuel used, less air pollution and no soil compaction.

Control of droplet size is critical in spraying soybeans. "When we do a fungicide application, we make sure that we can put out a droplet size of between 250 and 300 microns," says Holzwarth. He takes his airplanes—Air Tractor turbo props—to Operation S.A.F.E. fly-ins each spring to ensure that they are set up correctly for the work.

Wilson flies an Air Tractor 602 and two Thrush 510 aircraft. "We pattern test our airplanes so we have got our droplet size down and we know what nozzle settings to run," he says.

Glover, who flies Air Tractor 502s, uses a CP-09 nozzle with the deflector set for the largest amount of medium sized droplets when applying the glyphosate. "They help keep our drift down. We also use a small amount of Control® in every load of glyphosate Roundup® when we apply."



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## Outlook: More Application Ahead

Soybean prices are expected to remain high, and that's likely to mean more work for aerial applicators. But some pilots question how long this boom can last. "This season I'm optimistic, but it's anyone's guess as to what may happen," says Glover. "Many of our growers booked beans at the \$8.00 per bushel range, but input costs, such as the 60 percent rise in glyphosate prices, are rapidly catching them. The growers that booked later with higher prices will

have more to spend with aerial applicators, but who and how much we'll just have to wait and see."

Holzwarth remains optimistic about the future with soybeans. "With the way the population in the world grows every year, and with every acre that we lose to urban sprawl, every acre of ground has to produce more and more," he says. "With the soybean rust threat and with the commodity prices, we have a good market right now. I just don't see our work getting any slower or our industry getting any smaller." ✈

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# LAS VEGAS WELCOMES THE AERIAL APPLICATION INDUSTRY THIS DECEMBER



Attend the ASABE session and concurrent sessions for potential CEUs.

**N**A AAA Convention attendees have asked to return to Las Vegas! This year, we'll take over South Point Casino, Hotel and Spa from December 8-11, 2008 in Las Vegas. Celebrate the end of the year at one of the most exciting locations in the United States.

## Attendance At The 2008 NAAA Convention In Las Vegas Gives You:

- Four days of educational sessions, networking, meeting new people and catching up with friends! The convention will take place Monday-Thursday. (Stay tuned to the NAAA Website at [www.agaviation.org](http://www.agaviation.org) and future magazine issues for the schedule and further convention details.)
- Education and professional development. Attend the American Society of Agricultural and Biological Engineers

## Book Your Room Today

Don't delay! Make your room reservations today by calling (866) 791-7626 and give the code "NAAA Annual Convention & Trade Show" or book online at [www.southpointcasino.com](http://www.southpointcasino.com). The room rate is \$69.00/night. *Please be advised that the National Rodeo is also in town during the same time; therefore, please make your room reservations as early as possible.*



(ASABE) sessions and more than a dozen concurrent sessions to earn possible CEUs. Attending these sessions will keep you up-to-date with the latest precision technologies to mitigate drift and to make your applications more efficient and effective.

- Visit the 100+ exhibitors on the trade show floor that provide the services and products that maximize your business' productivity.
- Opportunity to bid on products in the Live and Silent Auction to support NAAA and WNA AA programs, as well as your business with your purchases.
- You've asked to attend Las Vegas for years! Enjoy all the fun that Las Vegas has to offer: top-rated shows, world famous dining and potentially profitable gaming.

## Register Online

*Please register for the convention today online at the NAAA Website at [www.agaviation.org](http://www.agaviation.org) under "Convention."*

## Current Auction Items (as of June 9th)

- Air Tractor – Ram Air Engine Retrofit Kit (no installation)
- BASF – Men's XL Bomber Jacket with BASF & Top Gun Logos and Ray Ban Aviator Sunglasses
- CP Products – 50 CP-11TT Flat Fan Nozzles and 50 CP-06 Swivels
- California AAA – Ag Plane Print
- Agriflite Services – 30 Check Valves
- AgNav – Ipac Organizer and \$500 gift certificate
- TumbleWeed Lodge – 2 day/3 night Bird Hunt at the TumbleWeed Lodge in Harrold, SD (Supports WNA AA)



## Kickoff Breakfast Speaker – Captain Brian Udell, Supersonic Survivor

Attend NAAA's Kickoff Breakfast on Monday, December 8th and hear a compelling story of survival, rescue and personal success from accomplished military Strike Eagle pilot Brian Udell. He holds the record for surviving the highest speed ejection from a U.S. fighter aircraft at nearly 800 mph. His riveting story of how he survived with a crushed body and crippling injuries for hours 65 miles off the Atlantic Coast is remarkable. Capt. Udell applies the principles of determination, faith and the sheer will to survive to facing life's everyday challenges. His triumphant return to the Strike Eagle is an inspiring story about perseverance and character. You won't want to miss this Kickoff Breakfast!



## Call For NAAA Award Nominations

Who will be recognized as the best in our industry by receiving an award this year? The NAAA Awards Committee is accepting nominations for the 2008 NAAA Awards. If you've attended the awards ceremony in the past and have

thought of a person who should be nominated, don't delay! Nominees don't need to be known nationwide; they can be an outstanding individual in your area. Nominate someone today. It is easy to make a nomination for a fellow NAAA member and all you have to do is fill out a single-page form.

Nominations are only accepted for individuals who are NAAA Members (Contact NAAA if you are unsure of their



membership status by phone at (202) 546-5722 or by e-mail at [information@agaviation.org](mailto:information@agaviation.org)). For a list of the available awards, a nomination form and further details, please visit the NAAA Website at [www.agaviation.org/awards.htm](http://www.agaviation.org/awards.htm). Awards will be presented during the Farewell Banquet on Thursday, December 11th.

## Exhibit At The 2008 NAAA Convention

2008 Exhibitor Booth Sales packets have been sent out. If you did not receive a packet and are interested in exhibiting, contact NAAA today. Premium booth spaces go quickly! Spend twelve hours on Tuesday and Wednesday meeting potential clients and educating attendees about your cutting edge products, technologies and services. This is one of the most widely attended events at the NAAA Convention and it's your opportunity to do business with 1,000+ attendees. If you have any questions or are interested in exhibiting, please contact Peggy Knizner by phone at (202) 546-5722 or by e-mail at [information@agaviation.org](mailto:information@agaviation.org).

## Sponsor An Event At The 2008 NAAA Convention

Thank you to the following companies who have already committed to sponsoring events at the NAAA Convention:

- Auction Reception – Syngenta
- Kickoff Breakfast – BASF
- Program Guide (back ad) – Air Tractor, Inc.
- Program Guide (inside ad) – Kimmel Aviation Insurance Company.

Sponsor an event at this year's NAAA Convention! Sponsorship opportunities are available at the welcome reception, farewell banquet, general session program, coffee breaks and several other options. The earlier you sponsor, the more advertising you'll receive! Get your company's name and logo in front of the attendees' eyes on signs, banners and in convention materials. Sponsorships are listed in the Convention Program Guide, Jan/Feb 2009 *Agricultural Aviation* magazine and on the NAAA Website, so your generosity will be noted by the industry! The NAAA Website averages 156,680 hits a month and 5,256 hits per day. For more information, please call the NAAA office at (202) 546-5722 or visit the NAAA Website at [www.agaviation.org](http://www.agaviation.org) and click the "Convention" link.

## WNAAA 2008 Convention Information

This year's convention will be packed full of events for the female convention attendees. Whether you're a spouse or business employee, there are events for you! The WNAAA Convention details are in the works and all details will be in future magazine issues and on the NAAA Website at [www.agaviation.org/wnaaapage.htm](http://www.agaviation.org/wnaaapage.htm).

## Seeking Auction Items

Donate your items to the NAAA and WNAAA Live and Silent Auction. If you have an item to donate, support the aerial application industry by donating it to the auction. To donate, contact NAAA by phone at (202) 546-5722 or by e-mail at [information@agaviation.org](mailto:information@agaviation.org). ✕



## 2008 NAAA Convention Events Schedule

*Schedule subject to change. Changes to the schedule will appear in future issues of this magazine and on the NAAA Website at [www.agaviation.org/conventionpage.htm](http://www.agaviation.org/conventionpage.htm). All activities will take place at the South Point Casino, Hotel and Spa.*

### Sunday, December 7th

10:30 am – 6:00 pm	Registration
9:00 am – 4:00 pm	Pratt & Whitney Seminar
4:00 pm – 6:00 pm	NAAA/WNAAA Board Meetings
4:30 pm – 6:00 pm	Concurrent Sessions

### Monday, December 8th

7:30 am – 7:00 pm	Registration
8:00 am – 9:45 am	Kickoff Breakfast
10:00 am – Noon	ASABE Sessions
1:00 pm – 2:30 pm	ASABE Sessions (continued)
2:45 pm – 4:15 pm	Concurrent Sessions
4:30 pm – 6:00 pm	Concurrent Sessions
7:00 pm – 8:00 pm	Welcome Reception/PAC Slot Tournament

### Tuesday, December 9th

7:00 am – 8:30 am	CP Products Breakfast (Tentative)
7:30 am – 5:00 pm	Registration
8:45 am – 11:30 am	NAAA General Session
10:30 am – 11:30 am	Allied Industry Meeting
Noon – 6:00 pm	Trade Show Hours
5:30 pm – 7:00 pm	Live Auction & Reception

### Wednesday, December 10th

8:00 am – 9:30 am	Concurrent Sessions
9:00 am – 5:00 pm	Registration
10:00 am – 4:00 pm	Trade Show Hours
3:00 pm	Silent Auction Closes
4:00 pm – 5:30 pm	Concurrent Sessions

### Thursday, December 11th

8:30 am – 10:00 am	Concurrent Sessions
9:00 am – 5:00 pm	Registration
10:15 am – 11:45 am	Concurrent Sessions
1:00 pm – 2:30 pm	Concurrent Sessions
2:45 pm – 4:15 pm	Concurrent Sessions
5:30 pm – 6:30 pm	Farewell Reception
6:30 pm – 9:00 pm	Farewell Banquet & Awards Ceremony

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# WHERE DOES YOUR INSURANCE DOLLAR GO?

By NAAA Insurance Committee

It seems to be a mystery. No one knows what those huge insurance companies are doing with all the money you give them. They must be making fortunes!

We assure you, that is not the case. If the companies were making fortunes, why have so many of them over the years discontinued writing ag business or have gone out of the aviation insurance business completely?

Homeowner, auto, business insurance, etc. companies have the advantage of having a huge number of units. Insurance actuaries rely on the "law of large numbers." With aviation insurance we do not have that luxury. There are more autos in any one of our major cities than there are aircrafts in the country. According to Federal Aviation Administration (FAA) records, there were only 3,430 active ag aircrafts in 2006. As a result, aviation insurance, particularly ag insurance, is quite unique and each risk must be underwritten and priced properly. There is little room for error.

Anyway, where does your premium dollar go? The figures we use are approximate and may vary three cents or so either way. It takes an insurance company approximately 30 cents of your dollar to run its business. That leaves 70 cents to pay losses, loss expenses, legal fees and any other costs associated with a claim. In addition, companies are mandated to set aside claim reserves (money) for all claims as they are notified of them. The reserves of many minor claims, particularly hull claims, are deleted as soon as the claim is paid. However, if the company is notified of a potential liability claim that may not be settled for years, the company must reserve its best estimate of the dollars to be spent until the claim is closed.

Also in the 70 cents, there must be some profit for the shareholders and investors. If we can't keep them happy, they'll pull the plug like so many have done in the past. Companies shoot for a 55-percent to 65-percent loss ratio. If 55 to 65 cents of your dollar are spent on claims, there will be a balance left for the insurance companies to run its business and make a profit for the investors.

Of the 30 cents to run the business, five to eight cents is needed by the issuing company to pay premium taxes, policy filing fees and other fees assessed by the various insurance departments, as well as state licensing fees.

The balance is used by the insurance company to cover its operating expenses including salaries, office supplies and printing, rent or mortgage, agent's commissions, utility bills, advertising and all the other expenses incurred in running a business.

It is impossible to give you an accurate breakdown, because companies operate in many different ways, but this should give you a pretty good idea of where your premium dollars go when you pay them. ✕



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# FUEL FOR THE FIRE

from page 23

refunds are filed, there is very little opportunity to reduce costs in this area. NAAA certainly has done much for the agricultural aviation industry in providing complete federal excise tax relief on fuels used to make aerial applications to crops. The cost of refining and distribution includes the profit margin for the refiner and the distributor, but this totals only about 15 to 20 cents per gallon. The rest of the costs are real and cannot be avoided.

## FBO Markup

Many agricultural aviation outfits have their own landing strips and fuel tanks. Hence, they do not have to deal with FBOs for their fuel. For those that are based at an airport that does not allow the operator to have their own fuel tank and for those operators who extend their area of operation beyond the range of their fuel tanks, it is good to understand how and why FBOs fuel prices are what they are.

The FBO's cost of storage and uplift into your aircraft are reasonable, but at first glance, their markup is substantial. However, it pays for more than the profit on the fuel – much more. First, it pays for all the “free” services and facilities provided by the FBO, such as ramp space, ramp personnel, CSRs, pilot lounges and services, coffee and donuts, work-out rooms, etc. (whether you ever use them or not). It is also the primary source of profits for the entire FBO. All the other services provided by the FBO, including hangar space, parts sales and maintenance

services are just not that profitable and, by themselves, do not justify the large investment and attendant high returns required for a modern FBO. Put another way, a modern FBO has large fixed expenses and only one source of substantial profits – fuel. Hence, the large fuel markups.

On the other hand, like any business with large fixed expenses, FBOs need a steady, assured flow of revenue as much as they need profits. And here is the important part: in return for getting all of your business, they will provide a substantial discount. In one recent case in which we were involved, the discount amounted to about \$1.50 per gallon off the list price for an operator who will buy about 100,000 gallons per year and provide the FBO with all their maintenance business.

Another way to put this is that it is not necessarily advantageous to always shop for the lowest price, particularly when that splits your business between three or four FBOs. That means none of the FBOs get a large amount of steady business from you; and while you do get the best price, you will not get much in the line of discounts. It is usually much better to figure out how many gallons you will need in a year and then put that amount out for bids.

Yet another way to get a better price is to offer your FBO to pay in advance for the cost of the fuel (not the retail price) you will use. Many FBOs will, in return for you paying the cost of the fuel up front, charge you a normal flowage/uplift fee plus a much smaller profit for a total markup of perhaps \$1.00. For example, suppose your operation will purchase 120,000 gallons per year from a particular FBO, and let's say that right now, the cost of Jet-A (not the retail price) is \$3.50 per gallon. (The spot price of Jet-A can be checked at [www.eia.doe.gov](http://www.eia.doe.gov) under “Spot Prices” and “Kerosene Type Jet Fuel.”) As discussed above, a standard contract is 42,000 gallons, so your operation will be using one standard contract's worth of fuel about every four months. This equates to you purchasing about \$147,000 worth of fuel every three months. That's a lot of money but it may well result in very

substantial savings since you would get your fuel for \$4.50 per gallon plus taxes.

Other operators who must use multiple FBOs because of their trip patterns use fuel discount cards. These fuel cards are offered by a number of fuel distributors and several aviation credit card organizations. They are actually credit cards that provide a discount when the operator buys fuel at one of their locations. Two of the independent fuel distributors that provide these cards and are well regarded are Colt International (450 locations in the US. [www.coltinternational.com](http://www.coltinternational.com)) and AvFuel (700 locations in the US. [www.avfuel.com](http://www.avfuel.com)). These fuel cards can be effective and, according to a recent survey, result in savings of well over \$0.50 per gallon. They can be particularly effective if you get a fuel card from the fuel distributor who supplies your fuel at home base. After all, it all adds to the volume of fuel that you buy from the same supplier, and in the commodity business, volume is one of the most important factors in setting the price you pay.

In summary, it is hard to beat a fuel surcharge clause in your contracts to protect you against the increases in the cost of fuel, because that will protect your profit. But an understanding of the fuel market and taking advantage of these nuances may actually help you increase your profits. ✦

*Bill de Decker's 40 years of experience encompasses every area of the fixed- and rotary-wing aviation business including operations, training, management, aircraft design, finances, marketing and sales. In 1989, he co-founded Conklin & de Decker Aviation Information, a well known aviation cost and consulting firm. His primary areas of expertise are cost analysis, financial management and business planning. He has offered aviation business management courses at NAAA's national convention and is scheduled to speak at this year's convention in Las Vegas, Nevada on December 9th, addressing aviation fuel costs and marketing aviation services.*

# NAAA Welcomes Our New Members

As Of May 20, 2008

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| \$170   | <input type="checkbox"/> Affiliated Allied          |
| \$85    | <input type="checkbox"/> Associate                  |
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