

Agricultural Aviation



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A yellow agricultural aircraft is shown from a low-angle perspective, flying over a field of crops. The aircraft is equipped with a large wing-mounted sprayer system, and a fine mist of green liquid is being dispersed from the nozzles. The field below is a mix of green and brown soil, with a concrete drainage ditch visible in the foreground. The background shows a clear blue sky and distant hills.

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on best management practices
to avoid off-target movement of
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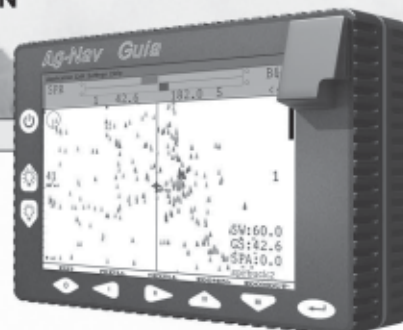
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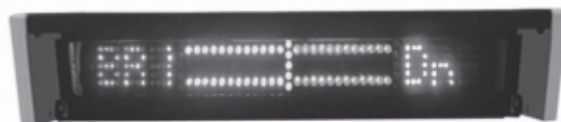
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SELECTION

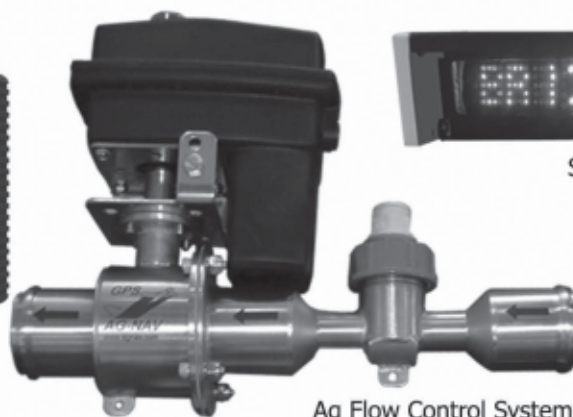
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National Agricultural Aviation Association

1440 Duke Street, Alexandria, VA 22314
(202) 546-5722 • Fax (202) 546-5726
information@agaviation.org
www.agaviation.org

NAAA Staff

Executive Director/Executive Editor Andrew Moore	Manager of Communications/ Managing Editor Jay Calleja
Assistant Executive Director Peggy Knizner	Manager of Government & Public Relations Danna Kelemen
Director of Education & Safety Kenneth Degg	Administrative Assistant Marisa Beam
Office Affairs Coordinator Margaret Dea	

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14



ON THE COVER

An aerial applicator shuts off the right boom to make an application along the edge of a field

ALSO INSIDE:

Agricultural Aviation queried aerial applicators about their favorite apps

24



36



Sixteen individuals completed the 2012-2013 NAAA/Syngenta Leadership Training Program at NAAA's Spring Board Meeting Feb. 15-16 in Alexandria, Va.

COVER STORY

DRTs: Drift Reduction Talks 14
A pair of operators, an ag pilot, an aviation insurance broker and a chemist open up about controlling drift and best management practices to avoid off-target spray movement

FEATURES

Information on the Fly 24
An abundance of intriguing apps are available. Here are 20 mobile apps geared toward ag pilots in need of information on the fly

Paging Generation Next 34
Gavin Morse has a message for ag pilots of his generation: It's time to give back and serve the industry that has served you well

State of the Association Summit ... 36
NAAA convened its first State of the Association Summit of 2013 at its Spring Board Meeting

The More They Know 40
Providing timely and accurate information to your agent and underwriter goes a long way toward securing an equitable insurance rate when it's time to renew your ag aviation policy

What's the Plan? 42
The USDA-ARS Aerial Application Technology Group wants aerial applicators' input as it maps out its research plans for the next five years

PAASSing It On 44
NAAREF is able to keep the cost down to attend its state-of-the-art PAASS Program thanks to the support of many company and individual sponsors

NOTES

President's Message 4
What lies ahead in 2013?

Executive Director's Message 6
Please be a volunteer for agricultural aviation

WNAANA President's Message 8
Make good communications a goal

NAAREF President's Message 52
PAASS is prologue

DEPARTMENTS

Washington Report 10
Take advantage of ag aviation tax exemptions while they last

Test Your Knowledge 43

NAAA Membership Application 47

Welcome to New Members 48

NTSB Accident Report 49

Index of Advertisers 50

FOR THE RECORD

In the January/February 2013 issue, Agricultural Aviation mistakenly stated that NAAA Treasurer Brenda Watts "holds the distinction of being the first woman officer to serve on the NAAA Board." Sandy Forstrom holds that distinction. Forstrom was an operator member from Colfax, Wash., who served as NAAA Secretary in 1992. That makes Watts the second woman to serve as an NAAA officer and the first female officer in 20 years. NAAA regrets the error.

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President's Message

Dana Ness

What Lies Ahead In 2013?

While none of us knows for sure what the year will bring, environmentally, politically or on the regulatory front, I am certain we all had better be ready to move on whatever the year brings.

If the drought persists over the U.S., are we ready to deal with the outcomes? Now is the time to make the preparations to make the most out of the coming year ahead. Are your aircraft ready for the long hard season? Are your pilots and office personnel prepared as well? Now is the time, as many of us attend our state conventions and attend the PAASS Program, to really ask ourselves this question. I remember what an old-timer used to tell me about the 5-Ps: "Proper Preparation Prevents Poor Performance." I think we can all take that one to heart!

The aerial application industry has made major improvements in the way it conducts business over the past many decades. Most of us now use GPS with flow control, along with newer nozzle technology and Operation S.A.F.E. calibration clinics to increase our on-target performance. We have seen the same advances in our offices with online mapping, real-time job tracking and connectivity for billing purposes.

Who knows what lies ahead for the next generation of operators? We need to use all of these advancements to educate and inform anyone who will listen. Most people, even those involved in aviation, don't understand what we do on a daily basis, particularly the level of precision and technology we use to accomplish quality applications. As I travel to many state conventions, I am impressed by the quality of the people I have met—true professionals who work hard in this noble profession to help their clients feed and clothe the growing world population.

The one thing I am sure of is there is going to be increased regulatory pressure placed on agriculture in the coming years. We have already seen the NPDES pesticide general

permit system implemented, and NAAA is working on spray drift labeling language with EPA. The future could hold the possibility of climate change regulations which could restrict or increase the cost of doing business. We as operators need to be ready to meet these regulations head on to try to minimize the negative effects. We can start getting ready by making sure we have a strong and active organization. NAAA is the first and best line of defense going forward. None of us can take on the issues sure to come by going at it alone, but as a strong organization we will deal with these issues as they arise.

It helps to remember we are not alone in this situation. Many crop protection product providers, as well as aircraft manufactures and allied industry support, work together with NAAA on issues, as well as other agricultural organizations. I believe if we all work together for a common goal, most all of the obstacles facing us can be overcome.

These situations will not necessarily be cheap or easy, so having all the support possible from the entire industry will become more and more important. To our existing members, thank you for your support. For those who have never been a member or have yet to renew for 2013, we invite you to become a member today and join NAAA in protecting your interests and strengthening our industry. To join, call 202-546-5722, visit www.agaviation.org/content/membership or complete the membership application on pg. 47 of this issue.

We work in a unique and dynamic industry that is fast paced and ever-changing. We are often the last line of defense to help control pests and diseases. Oftentimes we are a 911 service for our growers, so we have to be ready to respond in a fast and efficient manner. Preparation is the key to performing when called upon to provide safe, affordable food and fiber supply to the world. ■

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Executive Director's Message

Andrew Moore

Please Be a Volunteer for Agricultural Aviation

"I don't know what your destiny will be, but one thing I know: the only ones among you who will be really happy are those who have sought and found how to serve."

—Albert Schweitzer, Alsatian philosopher, physician, medical missionary and Nobel Laureate

"Service to others is the rent you pay for your room here on Earth."

—Muhammad Ali

"Unless someone like you cares a whole awful lot Things aren't going to get better, they're NOT!"

—Dr. Seuss

"No person was ever honored for what he received. Honor is given by what he gave."

—Calvin Coolidge

"For even the Son of Man did not come to be served, but to serve."

—Jesus Christ (from the Gospel of Mark 10:45)

"The best way to find yourself is to lose yourself in the service of others."

—M.K. Gandhi

"You can't leave footprints in the sands of time while sitting down."

—Nelson Rockefeller

The quotes that exist from famous individuals throughout history on the importance and personal satisfaction involved in volunteering are varied, but all come to the same conclusion. For any cause, whether it is addressing malnutrition, protecting the environment or promoting the benefits of agricultural aviation¹, an ample number of volunteers is necessary to carry the mission forward.

As I stated in my column last issue, for our industry to survive and thrive it will take devoted volunteers to serve and lead on the NAAA and state and regional ag aviation association boards, influence policymakers to ensure a workable regulatory environment for ag aviation, and speak to students and educators to promote our industry and recruit the next generation.

The time to serve is now. We have a number of NAAA Board members who have served dutifully for multiple years. Their service has been invaluable, appreciated and effective, but they cannot be expected to serve in perpetuity. Our 2012 Industry Survey shows the average age of an operator is 53

¹ Agricultural aviation is a way to prevent malnutrition and protect the environment because it allows for higher yields of crops allowing for more affordable food; higher yields also mean using less land for ag which preserves environmentally important ecosystems such as carbon-sequestering forests and water-filtering wetlands from being used for farmland.

years old and the average age for an ag pilot is 49.9. This usually is the time in most businesses and organizations for the next generation to come forward and ready themselves to take control of the reins.

On occasion, NAAA has been referred to sarcastically as an "Old Boys Network" run by a select group on the Board that have been in office for years. In my experience the longstanding Board leaders are happy to serve but also hope to turn over their reins to new, committed and competent replacements. The best scenario is to have a crossover situation where new, fresh faces learn from the veterans, similar to Green Bay Packers quarterback Aaron Rodgers training under the tutelage of Brett Favre. Longtime board members who have risen to positions of leadership got there because they were willing to share their talent that built their own businesses back home. There is new talent out there that any of the veteran Board members would be happy to mentor into serving as Board leaders. In my tenure at NAAA I have witnessed this time and time again. It is both encouraged and supported. Gavin Morse, a next-generation pilot himself, realizes the importance of bringing in new volunteers and shares his thoughts on pg. 34. As Chairman

Everyone can be great, because everyone can serve.

—Martin Luther King Jr.

of the Communications & PR Committee, Gavin is one of the younger leaders on NAAA's Board. Coincidentally, we both wrote about this topic without knowing the other's intentions—an indication of the topic's importance and reason why volunteering is reiterated in this issue.

There is no shortage of ways in which to serve the industry. It doesn't have to be Board service. It can be as a PAASS Presenter. It can be by speaking to schools or hosting field days in your community proselytizing the benefits of ag aviation. It can be commenting to a government agency or legislative office on a regulation or a bill's effect on our industry. Remember, there is no shortage of government officials out there as you can see from the following numbers.

- There are more than 2.77 million executive branch full-time employees, according to the U.S. Office of Personnel Management.
- There are more than 64,000 legislative branch employees.
- We don't lobby every federal agency but we do interact closely with the EPA, FAA and DHS where there are over 17,000, 47,000 and 200,000 employees, respectively. And these figures don't touch on the number of folks we need to reach in the media.

The point is we need ag aviation volunteer soldiers, and there are plenty of materials and training programs to help give you the basic training you need to be an effective industry volunteer. These include the NAAA Media Relations Kit, government relations issue briefs (all of which can be found at www.agaviation.org) and the Leadership Training Program which provides in-depth training in enhancing communications and leadership skills.

Volunteering can come across as overwhelming. The pay is poor. But, on a personal note, there are three things I tend to be reluctant to do but never regret doing afterwards. One of those things is volunteering (the other two are exercising and going to church). Volunteering can provide immense personal satisfaction. I recently was conversing on the subject of volunteering with two agricultural aviation

industry statesmen, Mark Hartz, NAAA's 2012 President from Arkansas, and Rod Thomas, NAAA's 2007 President from Idaho (and 2011 and 2012 NAAREF President). Hartz first started serving on NAAA's Board in 1998. When asked why he volunteered so much of his time to industry causes he said simply, "It needs to be done and it's a way to give back to an industry that has been good to me. To know that you've served the greater good, served something bigger than yourself, provides deep satisfaction and looking back on my professional career it is what I am most proud about."

Thomas, who has served on NAAA's Board for over a decade, said, "It provides a deep, personal, substantive satisfaction and an outlet. Instead of griping about a problem you are taking action and that is far more satisfying. Plus, I've met some great people throughout the country in this industry by volunteering that have become some of my best friends."

On a personal note, I volunteer on the Board of my college alma mater's local alumni association and work to raise scholarship funds for students in need of financial assistance. I've also patrolled, maintained and led hikes for the Potomac Appalachian Trail Club to enhance people's enjoyment of the local Blue Ridge Mountains. Echoing what Hartz and Thomas say, there is a deep feeling of satisfaction I experience when volunteering for these causes in which I believe. It has also introduced me to a number of interesting people that I have become good friends with.

Volunteering is necessary for any non-profit but there are also rewards. It is cliché but there is something that resonates deeper in the soul when you give rather than receive. There are ample opportunities to volunteer for the ag aviation industry either at the state/regional or national level. If you want to volunteer on an NAAA Committee, President Dana Ness would be happy to discuss service opportunities with you. If you want to try to qualify as a PAASS presenter or serve on a NAAREF Committee, NAAREF President Randy Hale would be happy to visit with you about serving. Keep on the lookout for all volunteering opportunities. It will benefit agricultural aviation nationally, regionally and will likely be spiritually satisfying. ■



WNAAA President's Message

Dona Jorden

Good Communications

As we progress through the early stages of 2013, we should continue setting goals for what we can do to improve our lives throughout the coming year. One thing I will be focusing on is communicating to both the public and private sectors about precisely what agricultural aviation is and how it contributes to and improves everyone's quality of life.

The WNAAA works hand in hand with NAAA to achieve the objectives of the organization as a whole. One of these objectives is to work toward gaining greater recognition and respect for the ag aviation industry and its contribution to agriculture by promoting strict ethical standards. One way we can do this is through effective communication.

NAAA has an active Communications Committee and Government Relations Committee. They use a variety of means to promote a positive image of the ag aviation industry to the media, Congress and federal agencies. NAAA also provides valuable information to its members through *Agricultural Aviation*, the NAAA eNewsletter, its website—www.agaviation.org—and its latest resource, the NAAA Media Relations Kit, a great source for tips and talking points on how to discuss the importance of agricultural aviation to the public and elected leaders. If you'd like a copy, become a member! New and renewing NAAA members get the Media Relations Kit in booklet form when they join for the 2013 membership year.

The WNAAA has acted as an arm of NAAA in areas of education, communication and promotion of the industry. The Athena Project is one of the communications services the WNAAA provides during the national and state ag aviation conventions. Athena presentations are tailored to women both actively and peripherally involved in ag aviation and focus on industry-related issues that concern them. For external outreach, the WNAAA sponsors and serves with NAAA volunteers as exhibitors at conferences such as the FFA National Convention, the National

Agriculture in the Classroom Conference and the Commodity Classic, as well as other events to promote the importance of aerial application.

Other programs, such as the Professional Aerial Applicators' Support System (a.k.a. the *PAASS Program*) and Operation S.A.F.E., which are administered by the National Agricultural Research & Education Foundation, also promote a positive image by working to provide training and educational programs focused on enhancing the efficacy, security and safety of aerial application as well as communicating to the public the importance of ag aviation.

With all this being said, the tools are in place to communicate the importance and future growth of ag aviation. By becoming a member of the WNAAA or NAAA you have these support groups and resources that will help tackle the challenges you face when working in the ag aviation industry. You have access to information you need to communicate without misunderstanding.

Another way to communicate the importance of ag aviation is to lead by example. With every new member comes one more way to create awareness of what the WNAAA and NAAA do for the ag aviation industry as a whole. It also cultivates a larger support system for aerial applicators and will help continue the industry's growth and sustainability.

Whether representing your company during ag aviation conventions, posting remarks on a Facebook page or commenting on someone's blog, our words and actions have a ripple effect and can make a difference in how the ag aviation industry is viewed around the globe. We can all play an important role in promoting a positive image by being aware we are the learning tool for the world. Let's make a goal together to be mindful of what we say and how we represent the ag aviation industry this year. Much good will come from communicating well through our words and deeds. ■



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Washington Report

By Danna Kelemen

Take Advantage of Ag Aviation Tax Exemptions While They Last

More than 150 years ago our nation's 16th President initiated the American public's long-standing aversion to paying taxes. While Lincoln first imposed a federal income tax to support the Civil War, today's taxes are levied as a means to support Social Security, health care, national defense and many social services. Whether you agree with having to contribute to the federal government's coffers, the necessity to pay is unlikely to change in your lifetime. What does change from year to year, and often varying significantly with those individuals elected to Congress and the Presidency, is exactly what percentage you pay and what exemptions you may be entitled to. With tax season upon us and April 15th just around the corner, it is beneficial to review the exemptions available to many aerial applicators.

Serving essentially as a last-minute compromise between the 112th Congress and the President, the American Taxpayer Relief Act of 2012 (ATRA) was designed to keep the country from going over the proverbial "fiscal cliff," at least temporarily, and as a result kept in place the Bush-era tax rates except for those over a certain high-income threshold (\$450,000 for joint filers, \$400,000 for single filers and \$225,000 for married taxpayers filing separately). The passage of the Act also set the estate and gift tax exemptions at \$5 million—a level that will rise with inflation and be permanent rather than fluctuate as it has for the past decade. As such, the exclusion for 2012 is \$5.12 million and is projected to be \$5.25 million for 2013. It also includes an increase in the gift-and estate-tax rate, which has gone up to a top rate of 40 percent from a maximum of 35 percent previously. Except for the richest of the rich (an estimated 1 percent of the population) this has essentially eliminated the estate tax and helped to clarify estate planning for those less wealthy.

With the passage of the ATRA, a nine-month limited extension of the 2008 Farm Bill was also included. While the bill extended many Farm Bill programs and included funding at 2012 levels for some, funding was not provided for a number of other programs, including the agricultural security tax credit. The security tax credit helps to offset security costs paid or incurred by an eligible agricultural business that "manufactures, formulates, distributes, or aerially applies specified agricultural chemicals." A specified agricultural chemical includes "any pesticide (as defined in section 2(u) of the Federal Insecticide, Fungicide, and Rodenticide Act), including all active and inert ingredients, that are customarily used on crops grown for food, feed, or fiber." The credit is limited to \$100,000 per facility, minus the total of the credits figured for the facility for the five prior tax years, and a \$2 million annual limit per business and covers 30 percent of the amount paid or incurred for qualified security measures. "Qualified Chemical Security Expenditures" are amounts paid for:

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- limitation and prevention of access to controls of specified agricultural chemicals stored at a facility;
- tagging, locking tank valves and chemical additives to prevent the theft of specified agricultural chemicals or to render such chemicals unfit for illegal use;
- protection of the perimeter of specified agricultural chemicals;
- installation of security lighting, cameras, recording equipment and intrusion detection sensors;
- implementation of measures to increase computer or computer network security;

- conducting security vulnerability assessments;
- implementing a site security plan;
- and other measures provided for by regulation.

The security tax credit was attached to the 2008 Farm Bill and expired at the end of 2012. Qualifying entities may still utilize the credit for 2012 and should use IRS Form 8931 (www.irs.gov/pub/irs-pdf/f8931.pdf). NAAA is working with other agricultural organizations in the 113th Congress to obtain an extension to the beneficial agricultural security tax credit beyond 2012.

One of the most significant accomplishments of NAAA has been the federal aviation fuel tax exemption. Our industry has been fortunate for the past eight years to qualify for a waiver for fuel excise tax relief. With the passage of the ATRA, aerial applicators can rest easy that fuel excise exemptions were not affected, and according to Hill staffers the fuel excise tax break is not imminent for elimination anytime soon. The law includes relief for fuels consumed while ferrying to apply to cropland, as well as fuels used on a farm for farming purposes, such as fuel used in the application of fertilizers, seeds, pesticides and other substances, including aerial applications. The current IRS reference that explains the rules and procedures to follow in taking these fuel tax credits and refunds can be found at www.irs.gov/pub/irs-pdf/p510.pdf. Keep in mind the rules differ according to the type of fuel used. For aviation gasoline an aerial applicator may claim a tax credit as the ultimate purchaser of the fuel but cannot claim a refund. For kerosene used in aviation (Jet A) the ultimate purchaser may either make the claim or waive their right to make the claim to the registered ultimate vendor or fuel supplier. In order for the ultimate vendor or fuel supplier to make the claim he or she must be willing to and if so obtain a waiver from the ultimate purchaser allowing them to do so. The specific forms regarding the credits and claims on aviation gasoline and kerosene can be found respectively on www.irs.gov/pub/irs-pdf/f4136.pdf and www.irs.gov/pub/irs-pdf/f8849s1.pdf. In addition to simply filing the claim, the IRS

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- dates of the purchases;
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- nontaxable use for which the fuel was used;
- and number of gallons used for each non-taxable use.

These fuel tax provisions, which eliminated the farmer waiver provisions and include exemptions on fuel used while ferrying and making applications, save the aerial application industry approximately \$20 million a year.

Another extension included in ATRA pertinent to many aerial application businesses is the so-called Bonus Depreciation and Section 179 business provisions. The Bonus Depreciation allows businesses to take an additional

depreciation deduction allowance equal to 50 percent of the cost of the depreciable property. This is a good thing for aerial application operations purchasing big equipment items such as aircraft and engines. The ATRA extends the current 50 percent expensing provision for qualifying property purchased and placed in service before Jan. 1, 2014 and also allows taxpayers to elect to accelerate some Alternative Minimum Tax (AMT) credits in lieu of bonus depreciation. The Section 179 tax provision allows a taxpayer with a sufficiently small amount of annual investment to elect to deduct the cost of certain new or used property placed in service for the year rather than depreciate those costs over time. For 2013 ATRA increases the maximum amount to \$500,000 and provides a phase-out threshold of \$2 million. Within those thresholds, the proposal would also allow a taxpayer to expense up to \$250,000 of the cost of qualified leasehold improvement property. Additionally, it's important to keep in mind that both new and used equipment qualify for the Section 179 Deduction (as long as the used equipment is "new to you"), while Bonus Depreciation covers new equipment only. Bonus Depreciation is useful to very large businesses spending more than \$2,000,000 on new capital equipment in 2013. For the most current information pertaining to Section 179 and Bonus Depreciation please visit www.irs.gov/uac/Form-4562--Depreciation-and-Amortization.

NAAA is pleased with the benefits afforded to aerial application businesses through the American Taxpayer Relief Act of 2012 and recommends members consult with their accountants if they intend to take advantage of any of the abovementioned tax provisions for 2012 and beyond. Overhauling the tax system will be a major focus for the 113th Congress, specifically for the powerful and tax-writing House Ways and Means and Senate Finance Committees. However, with a divided Congress and other issues like sequestration and raising the debt ceiling at hand, many Washington insiders are wondering what exactly will ultimately be accomplished. NAAA will continue to work to extend the security tax credit, fight against user fees while preserving our ag exemption, as well as work to preserve all other tax benefits possible for the industry. The Association encourages all members to stay advised of updates regarding taxes and other issues significant to ag aviation via the eNewsletter and NAAA website. ■

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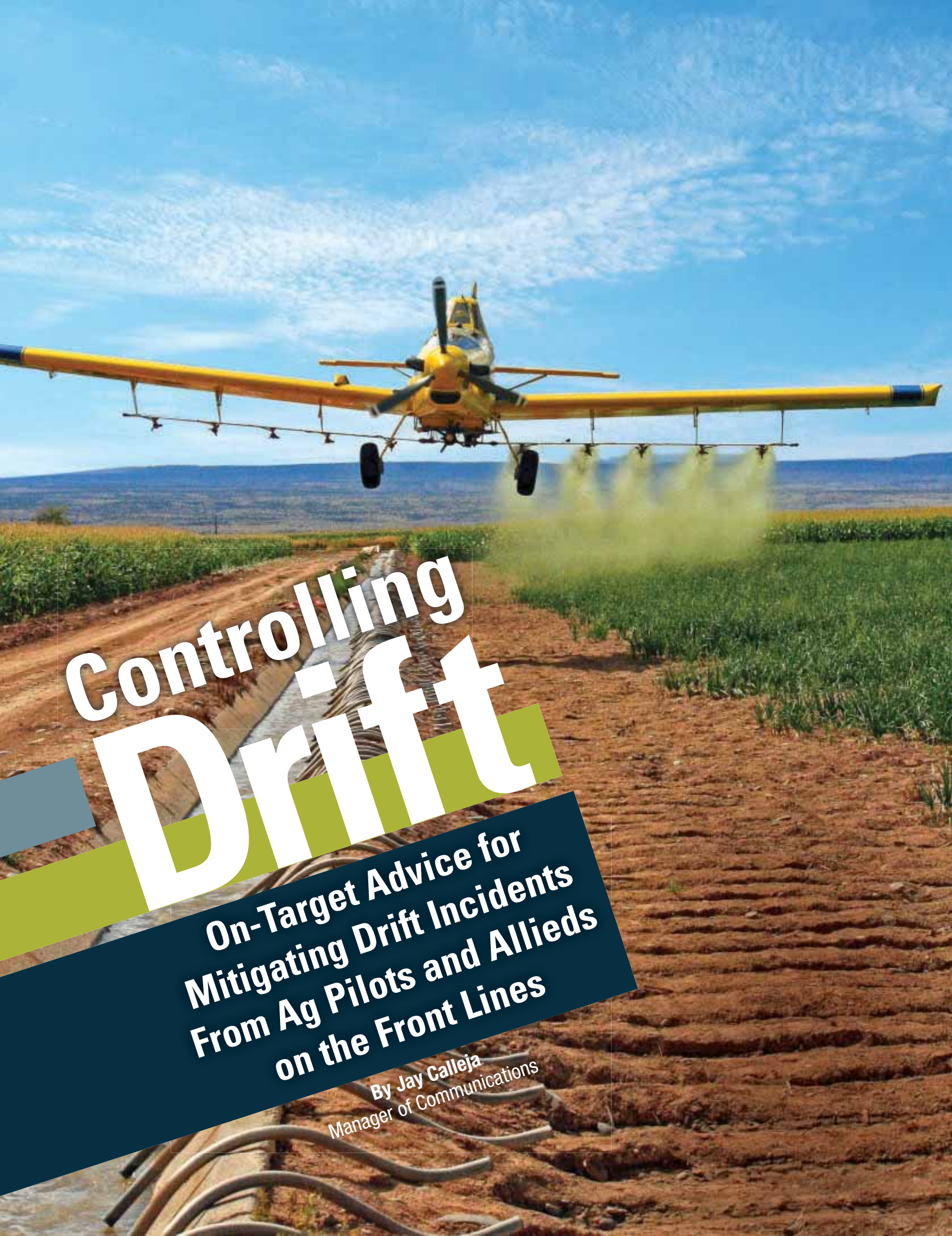
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Controlling Drift

**On-Target Advice for
Mitigating Drift Incidents
From Ag Pilots and Allies
on the Front Lines**

By Jay Calleja
Manager of Communications



Six months after publishing a series of “hard-learned pilot lessons¹,” *Agricultural Aviation* searched for teachable moments related to drift for another round of pilot lessons. Finding lessons from actual drift accounts proved to be a tall task, however, because few aerial applicators are comfortable talking about it in an open forum. When we invited NAAA eNewsletter readers to share drift lessons from their own experience for this article, it didn’t exactly elicit an avalanche of responses. Such reticence is understandable. Why risk tarnishing your reputation for something that in hindsight could or should have been avoided?

The stigma associated with drift exists because the product isn’t the only thing that gets carried away when a chemical application ends up where it shouldn’t. Drift is fraught with financial and emotional implications. “The human interaction is about as toxic as the money part of it,” said John Garr of Garrco Products Inc., an adjuvant manufacturer and Operation S.A.F.E. analyst.

However, even in cases of legitimate drift, to attach a Scarlet-D to the

pilot’s name and have *that* be the thing that defines him is unfair. Yes, mistakes happen—even big ones at times—but it’s not for a lack of trying, and they are happening less and less thanks to a variety of measures the industry has embraced. Just because aerial applicators don’t relish talking about drift doesn’t mean they aren’t thinking about it constantly. Drift reduction efforts are underway all throughout the industry. Operators and pilots think about drift improvements while attending the PAASS Program (*see pg. 52*) at their state convention or the ASABE Technical Session at NAAA’s

national convention. They’re thinking about it at Operation S.A.F.E. clinics around the country where they are pattern-testing their equipment and getting recommendations on how to improve their spray performance to deliver more efficacious applications. Staying out of trouble is one impetus, but more importantly, drift mitigation efforts increase deposition on the targeted weed, crop or pest, which delivers better results.

The aerial application industry has a laudable record when it comes to drift reduction and mitigation, but there’s still room for improvement. Improvement starts with learning from our mistakes. In the stories that follow, you’ll hear about accusations and confirmed incidents of drift, and the lessons therein, from a pair of operators, an ag pilot and an aviation insurance broker, and a different take on drift that accentuates the industry’s willingness to adapt from an allied industry representative. In exchange for their candor, the names of the participants have been withheld in most cases.

¹ “Hard Lessons Learned the Hard Way!” *Agricultural Aviation*, July/August 2012

Feeling the Burn

Ag pilots know how important it is to keep herbicide applications inside their target area. Otherwise, a burndown application can easily end up burning them. One unsuspecting operator learned this the hard way when he got more coverage than he bargained for from a glyphosate application. Much to his chagrin, the herbicide treatment destroyed one of his other customer's crops—yikes!

In the early '90s, a time when many of the dry-land acres in the Central Plains were being signed into the Conservation Reserve Program (CRP), before grass could be planted, we were called on to "burn down" the cover crop (usually wheat) and weeds with a mixture of glyphosate and 2,4-D.

Early one morning in late spring we had a 300-acre field to "burn down." The wind gauged 5 mph but was blowing toward a field of emerging milo—mostly spiking about an inch high. The nearest edge of the milo was a quarter-mile away from the CRP field, a buffer with which I was comfortable. I checked the humidity, which was low, and the temperature, which was rising, and considered all was well—no potential drift problems. So we put two Cessnas on the job and had it finished in about an hour and a half.

I was pleased to have the job completed—that is, until about a week later when the farmer with the little milo called to inform me something was wrong with his crop. I immediately drove to the field and the unmistakable symptoms of glyphosate effect showed in a large area of the field closest to the CRP we had sprayed. By the evidence, I knew the damage had to have originated from my application of glyphosate. Scratching my head, I wondered why my considered buffer hadn't been sufficient. Then I thought, INVERSION! I checked the historical records of the weather bureau 20 miles down the road and was informed, "At the time of your application there were two inversions recorded; one at low level and one about 1,500' AGL." Therein, I knew, was my problem.

Because it was early in the season the farmer, who was also a friend and customer, replanted the affected acres, but at harvest my insurance company paid the difference in yield of the damaged and undamaged areas of the

field. It was an expensive lesson and one I'm mindful of to this day. From that point forward, I vowed to be more aware of and pay more attention to inversion layers, especially in early morning and late evening.

Compared to the early '90s, in general, the operators and pilots of today have a much better understanding of temperature inversions and the adverse effects they can cause. For instance, the PAASS Program, the industry's annual safety education program, continues to stress the importance of knowing, as much as possible, the characteristics of the atmosphere at any given moment, especially when planning to apply a crop protection product with a potential risk of causing undesired off-target affects. Accordingly, my buffer zones are no longer static, but rather, they vary according to meteorological conditions.

Another important lesson learned that day was to consider the size of the crop against which I am buffering and remember that emerging crops are much more susceptible than established crops.

It's difficult when we have to gain so much education through experience, but wise men learn from those experiences as well as the experiences of others. I share this story here with hope that ag pilots reading it do the same.

The operator who shared this account is a second-generation aerial applicator with 40 years of experience as an ag pilot.



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Silence Isn't Always Golden

“What he doesn't know won't hurt him.” For ag pilots, nothing could be further from the truth, yet people rely on that dubious logic all the time. Sometimes it's out of genuine concern, but more often this rationalization stems from what we want or don't want someone else to know. Farmers put aerial applicators in that situation sometimes when they're anxious to get a field treated. It happened to an East Coast aerial applicator. The end result was a spurious drift claim and a two-year ordeal to clear the matter up. Here's what he learned from that episode.

Several years ago we were defoliating cotton in an area where a hurricane had come through and dropped a lot of rain in a short period of time. It went from an area that sees maybe one aircraft to seeing six to seven aircraft flying around. I was working an array of fields for one grower, and I was working through a co-op. I did not know the grower and didn't have any contact with him to ask if any of the surroundings were sensitive or if he had any problems with any residents in the area.

I was working three fields at once because they weren't very big fields. They ranged from 15 to 30 acres, and I was tying them together. I made the first pass on one field, came up, made my turn and came back to make a pass in the other field. When I made the pass into the field, I was going toward a house. I caught this older gentleman off guard, and it probably scared him more than anything, but I shut off in more than enough time for it not to drift to his yard. When I continued, I finished the field. About three hours later, we got a phone call from this gentleman claiming he had been sprayed.

I am very conscientious about avoiding drift. I knew I did not spray him, but the co-op started handling it. The salesman called the hospital, gave them all the information, told them that what we were doing wouldn't hurt them, and that I had said if he felt that he had been sprayed to please get checked out. The salesman told the nurse there was nothing wrong with the man—that he was trying to get something for nothing. Come to find out, the nurse he was talking to was

the man's daughter. I can laugh about it now. It wasn't funny at the time. It got worse from this point. The man gets checked out, but nothing ever comes of it.

About a year later, I get served papers. I'm being sued for half a million dollars for spray drift. The man claimed that I killed his chickens, warped his furniture in his house—just audacious claims. Fortunately, right when this whole episode started, as soon as I knew that he was in the hospital, I waited for the cotton to defoliate and went back and took pictures of the field. I did not know I had a problem coming, but anytime something occurs that I think is going to be a problem I immediately start doing my homework. Backtracking. Taking pictures. Asking whatever questions I can. Of course, defoliating cotton, you can write your name in it—it will tell you exactly where you've been. Well, the cotton was not defoliated around this person's home. The leaves had fallen off everywhere else except around where he lived under my first pass.

To make a long story short, we went to litigation and they did all kinds of stuff to try to indict me. When it came down to the day for us to go to court, he called up and offered to settle. I basically made a business decision at that point and told him that I would settle for a thousand dollars just to go away. And anything over a thousand, I was ready to go to court over, because I knew I was in the right. He took the thousand dollars. After it was all said and done, the farmer came to me and said, “Yeah, this fella was a problem and I didn't bother to tell anybody.” He

had sued him two prior times for prior sprayings.

There's several lessons. First, I should have flown away from that home. Pulling up over top of houses, even doing everything correctly, it can cause you a problem. If you can go away from a house, always try to spray away from the house, not toward it. That's protocol that we use daily now. It doesn't always work out that way, but you do try. And if that doesn't work, make sure you back off and leave two or three passes from the house and come back and trim it in a different direction.

Second, be very sure of your surroundings. When you're dealing with residents in close proximity to the treatment area, that's a sensitive area and you need to ask questions. Are there any beehives? Is there anything around there that I need to be aware of? Any people you've had problems with? Do I need to lay off of an area of the field? That's a lot of what I go through now. Some farmers won't tell you that because they want you in there. But you have to ask the questions.

Another lesson: Always handle the problem yourself. Don't depend on a salesman or the farmer or anyone else for that matter. There needs to be a coordinated effort to ensure that the right information is being presented. And the last thing is always get a good lawyer.

The aerial applicator who shared this account is a mid-Atlantic operator.

Cover story continues on pg. 20.



Inadequate Recordkeeping Can Be a Weak Spot for Aerial Applicators, Survey Finds

In January, the Arkansas Agricultural Aviation Association held a drift seminar at its annual convention led by Dennis Gardisser, a drift mitigation specialist, Operation S.A.F.E. analyst and PAASS presenter. His company, WRK of Arkansas LLC, specializes in aerial application technology, safety, efficacy and drift mitigation initiatives. Prior to the seminar, he sent a brief drift survey to Arkansas operators. Here are seven findings that emerged from the survey coupled with commentary from Gardisser.

1. GPS logging as part of recordkeeping is very valuable in helping to sort out drift claims, but many ag pilots still do not log.
2. Records in general are not complete or accurate enough.
3. Many applicators receive bogus claims annually.
4. The PAASS Program was highest in terms of where applicators get updated information on drift mitigation.
5. Applicators valued their professional credibility higher than economic loss, insurance issues and regulatory actions.
6. Many applicators utilize smoke as a drift potential indicator, but they do not log this valuable information, so it is of little value for their defense.
7. Records, records, records are one of the most valuable tools to help settle drift claims.

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Maintain Situational Awareness

Insurance agents and underwriters are all too familiar with the costs associated with drift for an aerial applicator and the insurance company. As one underwriter related in the magazine last year, the highest claim he's ever heard involved herbicide drift on blueberries and cost nearly \$1.5 million. Valid or not, if an ag pilot gets entangled in a drift dispute, insurers are going to hear about it. We asked an aviation insurance broker who has a deep roster of aerial applicator clients for an insurer's perspective on the subject of drift. For privacy reasons, he couldn't discuss specific cases, but that didn't prevent him from dispensing some practical advice.

At least through the spray season, we deal with this kind of stuff every week. Some weeks we get multiple claims every day. We see a lot of this stuff and we hear a lot about this stuff. It's not something that anybody wants, but it's something aerial applicators are unfortunately accustomed to. One of the worst things about a drift claim is it's not just their reputation, but their ability to get insurance that can be jeopardized.

There's lots of advice out there, but to me, the biggest thing is you've got to know the area you are working in. Is this going to be a problem area? There are some areas where my operators have told me, "I refuse to work there. I know the people in that particular area are going to have a problem if I work that area, so I have to turn it down."

"The simplest piece of advice I can give is this: If it looks like it's going to be a problem or could be a problem, I guarantee it will be a problem."

Along those same lines, you have to be able to trust the farmers you fly for. Ag pilots rely heavily on information they're given by the farmer about neighboring fields, but sometimes that information is incomplete at best. For example, there are times when a farmer may not be nearly as concerned about his neighbor's crop getting damaged as he is about his crop getting sprayed. The product may be totally incompatible with that neighboring crop. That's not a good situation.

The simplest piece of advice I can give is this: If it looks like it's going to be a problem or could be a problem, I guarantee it will be a problem. If the wind is not in your favor and you do the work, you are going to have a problem. But in the heat of the moment, it's easy to get to the point where you do something you know has the potential to bite you, but you do it anyway because of pressure and time constraints.

When things get busy, a flying service may have three or four airplanes running at once. They're trying to coordinate getting all these fields sprayed. They've got orders coming in left and right. They've got Mother Nature to contend with. They've got situations where they can't get to one field because there's always a wind blowing toward a susceptible crop. On top of that, they've got the farmer calling their cell phone every hour saying, "Get this done, get this done, get this done!" They've got financial pressure because they need the work and they need to get it done. I can sympathize with that, but an ag pilot can't let that get to him. There's too much at stake.

The insurance broker who shared this account has been writing agricultural aviation policies for more than 30 years.

Good Intentions Can Lead to Bad Outcomes

This pilot lesson reinforces many of the points the insurance broker expressed in the last account and again goes to show that when it doubt, it pays to listen to the little voice in the back of your head.

Last year, one of our really good customers asked us to apply a herbicide treatment in an irrigated farming area that was surrounded by susceptible crops. They don't usually ask us to put on this herbicide, but this time they did. To get to the field, we'd also have to work off of a satellite strip about 55 miles away. We felt obligated to do it because they give us a lot of work, so we figured, "Well, maybe just this one time."

I did the herbicide job, and it turned out beautifully. You couldn't have asked for a better job. The chemical was Gramoxone, which shows within two to three days. You can see exactly what you did. I got right up to the borders and edges when I went back to check it, and it was gorgeous. I was pretty happy with myself and the job I'd done.

Two days after the first application, the customer asked us to apply the same herbicide on another nearby circle of defoliating corn. It was a half circle of corn, which isn't very big, and only about three-quarters of a mile south of the field I had just sprayed, so we agreed to do it. That morning, as I flew over my previous work, I looked at it and thought, "Yeah, I've got this; this is going to be no problem." The wind was picking up a little, but it was barely moving. I purposely one-wayed half of the half circle so I could look in my mirror to see the sun reflect off the spray. I could see exactly where that spray was moving when I would pull up. That way, I knew I was staying away from the susceptibles.

I wish I could say the story ends there. It didn't, of course. When we

came back a couple of days later we realized I had killed almost half of the adjacent circle of buckwheat, which we came to find out is super-sensitive. The buckwheat was supposed to go export. Obviously it didn't. We figure an inversion was setting in even with the little bit of wind and picked some of it up and just carried it. It was early in the morning. The sun was coming up. So the inversion was probably going away, but it was still there then. I probably shouldn't have even done it to begin with.

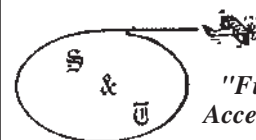
The No. 1 thing I took from that experience is you've got to be really careful about how you select a job. If there's a little voice in the back of your head saying maybe you shouldn't be doing it, you shouldn't be doing it. In this case, my sense of obligation got the better of me. Once you make a special trip to a satellite strip you almost feel like you have to do something—you don't want to just fly over there and waste a trip, so there's a little bit of pressure there. On top of that, you have a customer you're working for that brings you a lot of good work, and you don't want to turn down something small and lose something big. So, there was a little bit of pressure from that.

I was also feeling pretty confident based on the work I had just completed. Don't assume because you've done one job good, the next one's going to be great as well. It was within two days of each other, and it was almost identical weather, minus the little bit of wind. In reality, we probably just should have said, "You know, we shouldn't do this," and they probably would have understood

that. But we didn't go that route. We thought we would try to please them. We paid for it.

The pilot who shared this account has six seasons and 2,200 hours of ag flying experience. Outside of this incident, his safety record is otherwise spotless.

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Better Deposition = Decreased Drift

Focusing solely on ag pilots' mistakes and worst-case scenarios with respect to drift misses the point, John Garr asserts. As an adjuvant manufacturer and a longtime Operation S.A.F.E. analyst, Garr has observed a common trait among the operators and pilots he has encountered, and it's this: They never stop trying to get better. Perfection may be elusive, but there's no letup in their zealous and continual efforts to experiment and improve, not out of any fear of drift, but because they want to do right by their customers. Drift reduction is part of that, but Garr says another D-word trumps it.

It's not about drift, it's about deposition. The more you get to the target, the more product for efficacy and the less product for drift. You're never going to get to 100 percent, but in my experience, the industry uses all the tools they have at hand to provide best-case scenarios for anything they do. Operators and pilots go to Operation S.A.F.E. clinics to set up their equipment to get better deposition. If they can fine-tune their system to 95 or 96 percent efficacy, using an adjuvant might make it 98 or 99 percent.

An operator who gets his planes calibrated each year was having some issues with burndown, a glyphosate application. His overall efficacy was very good, but he still wasn't satisfied and wanted to get better results. He continued tinkering with different




An aircraft makes a spray pass over the flight line with the right boom shut off at an Operation S.A.F.E. calibration clinic. The pink dye allows Operation S.A.F.E. analysts to analyze the spray pattern, determine the optimum swath width and make recommendations as needed to the pilot.

drift reduction technologies including experimenting with nozzles and adjuvants. He's using all the tools at his disposal, plus still trying to find a tweak to the system that would benefit him and get better efficacy to

his customer and less liability to his neighbors. We're continuing to fine-tune the system. We keep tweaking it a little bit and we keep getting better every year. Any tool you can use to get more product to the target—whether it's an adjuvant, nozzle configuration or selection or position or placement on the boom—you should use it all the time, unless there's something that would preclude doing that.

In life, anything that we do is an evolution of a learning experience. My grandfather always told me, "When you quit learning, you're dead." There's nothing perfect in life, and there's no government regulation that can regulate perfection. The important thing is the heartfelt sincerity of people who enjoy what they're doing and their desire to provide a value to their customer, and anybody that's involved in aerial application usually has that heartfelt, gut ability to want to do a good job. I think that's the way

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the industry feels in general—they're always trying to do something better. Otherwise, they wouldn't be doing the PAASS Program, NAAREF wouldn't be in existence, they wouldn't be doing the S.A.F.E. clinics. Because the better job you do, the more honest you are with your customer. The more product you get to the target, the more he's going to call you back the next year when he sees that you can do a good job. The industry does a great job of doing that. ■

Garrco Products President John Garr is a longtime supporter of NAAA and the aerial application industry. He serves on NAAA's Board of Directors and the PAASS Program Development Committee in addition to being an Operation S.A.F.E. analyst.

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"It's not about drift, it's about deposition. The more you get to the target, the more product for efficacy and the less product for drift."



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Mobile Apps *for* Agricultural Aviation: Information on the Fly

By Jay Calleja
Manager of Communications

As the *appification* of America continues to accelerate, a wealth of productivity apps for agriculture, aviation and aerial application specifically have been released. The fount of information and real-time data available to aerial applicators at the tap of a finger is staggering in its scope, narrow in its focus and pretty cool no matter how you look at it. That's the beauty of apps.

To help you get *app* to speed on what's out there, we invited NAAA members to share their favorite agriculture/aviation apps. Based on their input and our own research, *Agricultural Aviation* has compiled a list of interesting

mobile apps for agricultural aviation. The apps are listed in no particular order but have been organized in the following categories: aerial application, crop protection, agriculture, aviation, weather, and navigation/maps. Since most are free, there's little downside to testing an app if it is compatible with your mobile device. If you find one you like, great! If it's not for you or it's similar to something you like better, all it takes is a few more taps to remove it from your device.

Abundance of Intriguing Apps Available to Aerial Applicators

The apps that follow are provided for informational purposes. Many of the apps listed were the result of a request to the membership for useful apps via an eNewsletter article. Inclusion in this article does not constitute an endorsement by NAAA. Similarly, omission of other apps in the aforementioned categories should not be interpreted as a negative reflection on those products. For our purposes, we only designated an app as being available for the iPad if it could be viewed within the full iPad screen. Any iPhone app can be installed on an iPad, but it retains the original iPhone screen dimensions.

Aerial Application Apps

Aerial Sprays

(Free: Android, iPhone, iPad)



If you only have room for one aerial application app on your mobile device, this was the most common app mentioned by members who responded to NAAA's queries for this article and for good reason—Aerial Sprays was the first app designed specifically and solely for aerial application. The USDA-Agricultural Research Service's Aerial Application Technology group (AAT) released it at the end of 2011. The app incorporates the USDA-ARS spray nozzle models. Since it doesn't require a wireless or mobile data connection, pilots can calculate relevant droplet size data instantly and tailor their spray equipment for the job at hand to achieve the maximum amount of on-target deposition. There are currently 19 nozzle models (10 for fixed-wing aircraft; nine for helicopters). Aerial Sprays prompts users to select nozzle type and operational conditions (i.e., orifice size, spray pressure, nozzle orientation and airspeed). Users can email the resulting droplet size data or save the specifications to their mobile device. A help screen on each interface page

provides users with guidance on the information requested or presented on that particular page.

Vector Sprays

(Free: Android, iPhone, iPad)



Another app from USDA-ARS AAT, Vector Sprays is designed for users of hand-held, truck-mounted, thermal and ULV sprayers targeting mosquitos and other insects that transmit human and animal diseases. It provides applicators with a quick, easily searchable interface that returns droplet size data for nearly 100 different sprayers used for vector control.

CP Products Mobile Website/ CP Products Aircraft Calibration App (coming soon)



CP Products' Aircraft Calibration App is still in development, but it will be similar to CP's new mobile website (<http://m.cproductsinc.com>), which helps ag pilots determine the best tip for their aircraft. You start by selecting the type of CP nozzle, then plug in the speed, swath width, gallons per acre (GPA) and number of nozzles you intend to use. From those

specs, CP's calculator will identify the best tip and estimate the amount of pressure needed. CP's Flow Rate Calculator, which works much the same way for its ground products, is also being developed as an app. Until then, the aircraft and ground equipment calculators are available on CP's mobile website at <http://m.cproductsinc.com>. Smartphone users also can get to the website by scanning the QR code with your mobile phone.

AgSync Operator

(Free: iPhone, iPad)

AgSync Operator from AgSync gives customers of the web-based work order system access to task retrieval and completion information on the go. The app offers customized settings and instant communication with AgSync. Login required.

ApplicationMGMT.com Pilot App

(Free: iPhone, iPad)

This companion app for subscribers of ApplicationMGMT.com syncs completed work order data with their ApplicationMGMT.com account. The app lets ag pilots send up-to-the-minute completion data to keep their customers informed about application jobs as they are completed.



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No Sign of App Fatigue Anytime Soon

If apps aren't yet your thing, soon there may be no avoiding them, and it's not just because smartphones are ubiquitous. The smartphone revolution paved the way for the rapid rise of the tablet, a market that was virtually nonexistent until Apple introduced the iPad in 2010. Less than three years later, a full-fledged tablet takeover is underway. The NPD research firm expects sales of tablets to exceed laptops for the first time this year—and it won't even be close. For on-the-go ag pilots, mobile devices are a natural fit. Fifty-eight percent of respondents to a communications services survey NAAA

conducted in 2011 said they use a smartphone as their primary mobile device. Odds are that figure is even higher today, and the use of tablets has certainly risen within the industry. The number of attendees seen toting an iPad or other tablet at the 2012 NAAA Convention offers anecdotal evidence of that. More empirically, readership stats for the NAAA eNewsletter show that a small but not insignificant subset of members read their newsletters from an iPad (10 percent in the case of one mid-January eNewsletter issue).

Crop Protection Product Apps

Agrian Mobile

(Free: iPhone, iPad)

Agrian Mobile lets users look up crop protection product information and was named one of the "20 Best Mobile Apps for Agriculture" by *CropLife* magazine in 2011. The searchable database features 5,800 crop protection products from more than 250 participating manufacturers. View labels and MSDS documents, registered states information, commodity/pest use rates and more.

Mix Tank 2.0

(Free: Android, iPhone)

This app from Precision Laboratories helps applicators determine the correct mixing sequence of crop protection tank mixes and avoid mixing the wrong products. It also features a spray log for easy recordkeeping and sharing. The online version of Mix Tank earned Top Product of the Year accolades in *AgProfessional* magazine's 2011 Readers' Choice Awards.

TankMix

(Free: iPhone)

DuPont's TankMix Calculator App helps users calculate the amount of product and the amount of water needed to treat a specific field area; the amount of product needed for a specific tank size; and the amount of water needed to get the desired volume-to-volume ratio.

Agriculture Apps

SoilWeb

(Free: Android, iPhone)

SoilWeb provides GPS-based, real-time access to USDA-Natural Resources Conservation Service soil survey data. The app retrieves graphical summaries of soil types associated with the user's current geographic location and links to detailed information on the named soils.



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Aviation Apps

AvGas Now – 100LL Aviation Fuel Finder (Free: iPhone)

AvGas Now locates aviation gas near you. Locate aviation fuel (100LL) and MoGas by state, distance or price. Because the database is cached, the app works while flying and shows the distance, heading and estimated time en route to the fuel location.

FBO Fuel Prices (\$3.99: iPhone, iPad)

This app searches FBO fuel prices available throughout the United States and can be used in-flight. Users can check current fuel prices within a radius of up to 100 nautical miles; search by full-service and self-service fuel; and post a graphic map with pins of airport locations and fuel prices. Tapping a pin displays FBO contact information, fuel price, date it was last

updated and ramp fees for that and other airports in the vicinity.

Wind Tunnel and Wind Tunnel Pro HD (\$1.99/\$5.99: iPhone, iPad)

These apps let users turn their iPhone/iPad into a wind tunnel simulator. You can experiment with different sizes, shapes, aerodynamic profiles and wind speeds. The extended version of the app, Wind Tunnel Pro, adds visualization modes for turbulence and fluid direction, VGA output, the ability to load and save scenes, adjust friction and viscosity and other features.

Weather Apps

Weather Underground (Free with ads/\$1.99 without ads: Android, iPhone)

As the Internet's first weather website, or so the company says, Weather Underground has been providing in-depth weather data for years, but what the weather service hangs its hat on is its ability to drill down to provide ultra-localized weather details. The Weather Underground app draws from a network of more than 22,000 neighborhood weather stations to provide continuous localized weather updates. Click on the icon in the upper right corner of the home screen for a list of the airport and personal weather stations (PWS) within range of your location. Testing this feature from NAAA's headquarters in Alexandria, Va., we found 31 PWS within a seven-mile radius of our office, including two less than a mile away. Comparing the current weather readings from several of those local weather stations revealed minor fluctuations in temperature, but the wind speed and wind direction varied considerably from one station to the next. The map component provides an even easier way to quickly compare local weather station readings. The



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Interactive WunderMap allows you to select different weather overlays, such as wind or precipitation, and observe current conditions from its personal weather station network. Zoom in on your location (or a customer's field) and tap on one of the weather pins to get a quick read on the current conditions at that weather station, including temperature, wind speed and direction, humidity, pressure and precipitation rates.

One thing the app doesn't appear to have which is available on Weather Underground's website, *www.wunderground.com*, is the ability to search for historical weather data by location and date. This can be found in the drop-down menu under the Local Weather tab. The historical data from the resulting search is quite detailed, including providing hourly weather observations for that 24-hour period, but the data comes from the airport weather station closest to the city or town searched. Nevertheless, accessing such historical weather data could be useful in the event of a drift claim or complaint from a citizen or neighbor of a customer.

The Weather Channel

(Free: Android, iPhone, iPad)

The Weather Channel app is a favorite of non-pilots, but ag pilots like it too—not only for its reliable nuts-and-bolts forecasts, but also for some of its more advanced weather features. NAAREF Vice President Rod Thomas finds the maps feature to be one of the app's most useful elements

because it lets you add different layers to your map. One layer shows the winds displayed in color. Anything less than 10 mph has no color and there are different shades and colors going up. "Very handy if your field is five or more miles away and in my experience very accurate," Thomas reports.



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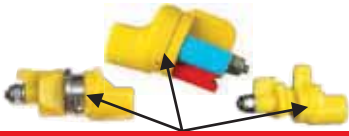
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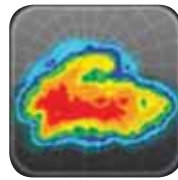
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MyRadar lets ag pilots see if rain or another weather disruption is headed toward or away from them, and how quickly it's moving, by displaying animated weather radar around their current location. Additional options include weather warnings and alerts to warn about severe weather in the area. MyRadar is free with ads, or MyRadar Pro is available without ads for \$1.99.

WindAlert

(Free: Android, iPhone, iPad)



WindAlert was recommended by member Heath Kretschmar, a pilot with Wilbur-Ellis Air in Huron, S.D. Kretschmar uses the app to access wind monitoring stations in the area he is working in and says it gives a “good detailed forecast.” WindAlert includes wind data from more than 50,000 weather stations around the world, and precision wind graphs let you scroll forward and backwards in time to see what the wind did, is doing and will do. Customized wind alerts for any weather station can be set up through the app or www.windalert.com to notify you when the wind conditions you are looking for meet your target thresholds. The main drawback to WindAlert's free app is the amount of ads competing with your search results. Tiered monthly memberships, starting with reduced ads for Plus members, are also available. Pro and Enterprise members can eliminate ads and gain access to premium weather station data and forecasts.

**Farming weather forecast and services
by New Holland Agriculture**

(Free: Android, iPhone)

This app provides professional forecasts with an agro-meteorological bent, including data such as evapotranspiration and an almanac to compare current conditions with the historical average temperature for the same period. Current conditions data comes from more than 71,000 weather stations and includes barometric pressure, humidity, wind, direction and gust readings along with the current temperature.

Navigation/Map Apps

HQ

(Free: iPhone, iPad)

This companion app allows for asset tracking and remote access to Hemisphere GPS' Satloc G4TM, Satloc Bantam or IntelliStar aerial guidance systems. While a customer login is required for HQ Mobile's asset tracking, Hemisphere's job editor does not require a login. Aerial applicators and growers can use the Polygon Editor to define spray areas (polygons) on a map and email the job file.

Google Maps

(Free: Android, iPhone)

This widely used free app remains popular with aerial applicators because of its comprehensive, easy-to-use maps.



Google Earth

(Free: Android, iPhone, iPad)

Google Earth allows users to “fly” around the planet from the area they are viewing back to their current location with the swipe of a finger. A more practical use for ag pilots, however, may be the ability to zoom in on a field to check for potential obstacles.

So there you have it—20 mobile apps or potential apps for agricultural aviation. If you are aware of an app with an agricultural, aviation or aerial application-specific focus that isn't on this list that would interest aerial applicators, tell us the name of it and what you like about it. Email information@agaviation.org with “Favorite Apps” in the subject line. ■

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HEY, AG PILOTS OF THE NEXT GENERATION, I'M TALKING TO YOU!

By Gavin Morse

Chairman, NAAA Communications and
Public Relations Committee

I feel privileged to work in a field as unique and important as the aerial application industry. Like any industry we have our own particular challenges, one specifically being replacement pilots. We have all heard the issues over the years of an aging pilot population and the push for new ag pilots. These two problems are intertwined and unfortunately tend to be compounded by one another. Over the last two years our industry has seen an uptick in replacement pilots. That's good! The question now becomes how to motivate the next generation to grab hold of the reins and participate side by side with our accomplished leaders.

As Andrew Moore pointed out in his Executive Director's Message, for many years our state and national associations have benefitted from a large pool of extremely experienced directors. In light of this, it has not been unusual for new pilots to feel they have little to offer to their "experienced, longstanding associations" and thereby default to non-participation. However, there is a day fast approaching when our seasoned directors will be more interested in the back nine holes than the next nine years. Another pitfall facing the next generation is the false

belief there are other people who choose to be political and involved and they will take care of the paperwork while we fly the airplanes.

Here is the reality: It does not matter if you are 16 or 60, if you are working in aerial application as a mixer/loader, mechanic, salesman, pilot or operator, you are the face of our industry. The responsibility of representing aerial application falls squarely on each of us, not just a select few. The time has never been more critical than now to ensure all aerial applicators work together and hold themselves to the same professional standards countrywide. The only way to ensure this uniformity is to be involved and tuned in to our industry.

So, what to do? I know as well as any the struggles of breaking into this industry. It's no easy task; however, I was fortunate to have a mentor starting out who instilled the importance of participation in our associations. From the time I started out as a mixer/loader, well before I ever stepped foot in an ag plane, I was attending our state meetings. This led me to an epiphany: There aren't legions of lobbyists, lawyers or three-piece-suit wearing businessmen running the industry on our behalf behind the curtain; it's just us, the staff and a few

contractors at NAAA, and the state and regional associations.

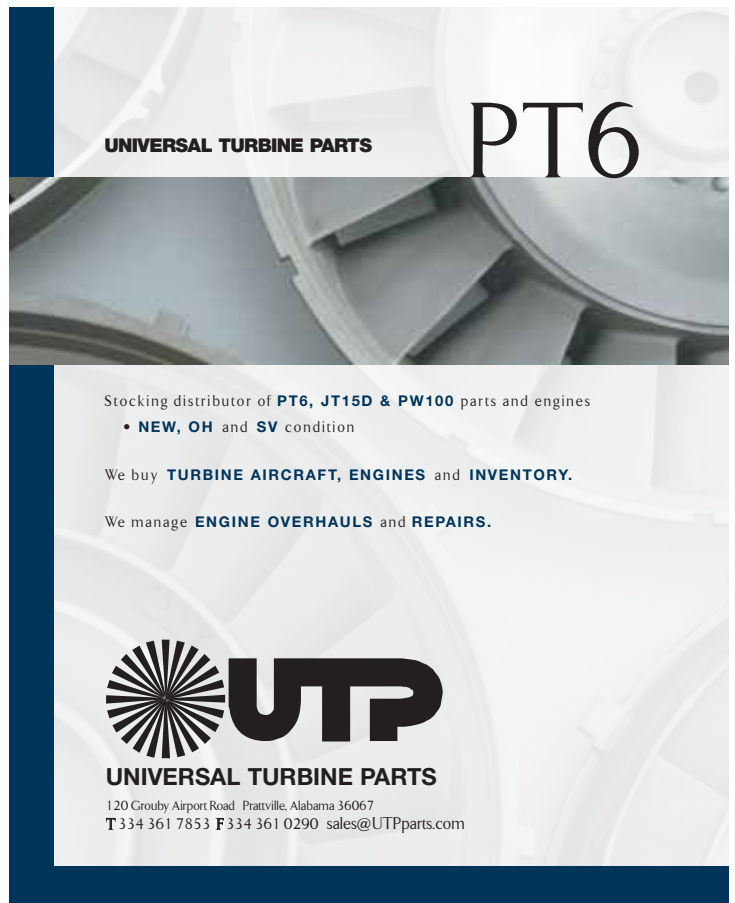
As the next generation, we owe a huge debt of gratitude to those who blazed the trail before us who are responsible for leaving us a vibrant, growing, lucrative industry to inherit. The responsibility of protecting and shaping our industry is beginning to be passed to us, but if we younger members do not have the foresight to adequately prepare ourselves through involvement, education and mentorship, there will be too few to carry the increasingly heavy load.

Our associations already face a staggering amount of opposition from regulators and politicians who profess no allegiance to ensuring our industry's future and security. Mentoring takes time. This is true for breaking in a new pilot, for familiarizing a new director and for the cultivation of a knowledge base of a new volunteer. It is never too late, and perhaps more importantly it is never too early to become involved, so when the torch is passed to you, you'll be ready. Attend your association meeting and when possible lend a helping hand.

There are countless ways to get involved and donate your time as

a volunteer—from speaking at a growers meeting or in a classroom, to manning a booth at a convention for your association, to serving as a board member or officer just to name a few. There has also never been so much great information so readily available to NAAA members to help prepare you for an interview or speaking engagement. So from one “next generation” pilot to another, I urge you to utilize these great NAAA informational resources, learn all you can from our experienced senior leadership and give all you can to our cause and your future. ■

Gavin Morse is a pilot for B & R Aerial Crop Care in Connell, Wash. He sits on NAAA's Board of Directors as the Association of Washington Aerial Applicators' representative and has chaired NAAA's Communications and Public Relations Committee since 2012.



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NAAA TAKES THE LONG VIEW DURING SPRING BOARD MEETING

The National Agricultural Aviation Association (NAAA), Women of the National Agricultural Aviation Association (WNAAA) and the National Agricultural Aviation Research and Education Foundation (NAAREF) held their spring board meetings Feb. 14–16 at the Hilton Old Town in Alexandria, Va. This was also the final session of the 2012–2013 Leadership Training Program. The hotel’s proximity to NAAA’s new office—just a short 10-minute walk—meant that several committees were able to meet at NAAA’s headquarters. This gave board members the opportunity to tour the new facility and work in NAAA’s new conference room.

AgAv PAC Breakfast

The 2013 Spring Board Meeting kicked off with Congressman Adrian Smith (R-Neb.) speaking at a breakfast fundraiser for AgAv PAC, NAAA’s political action committee. Rep. Smith serves on the influential House Ways and Means Committee and represents NAAA Vice President Rick Boardman’s district in Nebraska. A strong proponent of agriculture and rural America, Smith chairs the Congressional Rural Caucus and the Modern Agriculture Caucus. He also sits on the Congressional General Aviation Caucus and comes from a family of pilots.

Congressman Smith spoke about tax reform and other issues being considered by the 113th Congress. He believes that simplifying the tax code would go a long way toward spurring economic growth. However, when asked about the chances of achieving tax reform given the current environment in Washington, Smith



THE BREAKFAST CLUB From left to right, *CropLife America* President & CEO Jay Vroom, NAAA President Dana Ness, NAAA Vice President Rick Boardman, Congressman Adrian Smith (R-Neb.) and NAAA Executive Director Andrew Moore get together after NAAA’s annual AgAv PAC breakfast fundraiser.

said, “It won’t be easy, but we just have to stick to the facts of what tax reform can do.” He and his colleagues weren’t elected to make easy decisions, Smith noted. “We need to do our job, and our job is having committee hearings and doing mark-ups,” he said. “That might mean spending a little more time in Washington.”

Smith concluded by urging PAC attendees to communicate with their representatives. “We really do well when you speak up,” he said. Earlier in the week NAAA staff, board and committee members did just that, visiting the offices of their Senators and Congressional Representatives, as well as other federal agencies, urging them to take agricultural aviation industry policy interests into account as they deliberate on important legislative and regulatory matters.

EPA Provides Pesticide Policy Update

NAAA’s opening General Session was held immediately after the PAC breakfast. After welcome remarks from NAAA President Dana Ness, NAAA

Executive Director Andrew Moore introduced the director of the EPA’s Office of Pesticide Programs, Dr. Steve Bradbury. Bradbury proceeded to brief the board on a range of pesticide policy issues, including revisions being considered to the Worker Protection Program and pesticide certification regulations, measures being considered to protect pollinators and endangered species, and to grant users of qualified pesticide drift reduction technologies (DRTs) leeway on pesticide labels that may include mitigation of buffer zones.

While the EPA would like to develop uniform legal language on spray drift applicable to all product labels, that has proved to be “a tough topic,” as people from different parts of the Agency grapple with how to move forward on the issue, Bradbury said. In the meantime, the Agency is continuing to proceed with spray drift labeling language, but will do so more on a chemical-by-chemical basis during the EPA’s re-registration process, Bradbury reported. “Our whole goal is to try to ensure beneficial products are being used in agriculture, while at the same

time protecting the environment and human health,” he said.

The Agency and aerial application industry are also about a year into the NPDES Pesticide General Permit enforcement period. “The initial feedback is that ... it seems like it’s played out reasonably well,” Bradbury said. He added that anecdotal evidence suggests the time needed to complete the NPDES permit applications is less than the EPA originally estimated. However, the Agency will get a better sense of how cumbersome PGP compliance has been when it reviews the first round of reports coming in from about 200 large applicators subject to yearly reporting requirements. The EPA will review those comments and take them under consideration.

After Bradbury’s update, Moore gave an abbreviated version of his executive director’s report. Along with an update on the state of the Association and NAAA’s activities, he showed a short promotional trailer for a proposed documentary that would cover the history and rise of the contemporary aerial application industry. NAAA has expressed its support for the documentary effort, and initial fundraising efforts are underway by the producers. BRD Production Group, Grower’s Air Service and Hollywoodland Productions LLC are collaborating on the project.

After the opening General Session, the various NAAA, WNAAA and NAAREF committees met for the rest of the day Friday and the next morning before reconvening for the full board meeting Saturday afternoon, Feb. 16. Highlights from the board meeting are as follows:

Government Relations Initiatives

Many of the government relations issues facing the aerial application industry were covered during the



THE SWEET SIXTEEN Sixteen participants completed the 2012–2013 NAAA/Syngenta Leadership Training Program during NAAA’s Spring Board Meeting in February. Pictured from left to right, front row: David Kramr, Double L Flying Service, Lissie, Texas; Brittany Kerr, Wilbur-Ellis Air, Highmore, S.D.; Colleen Campbell, Association of Montana Aerial Applicators, Dutton, Mont.; second row: Lanny Lambrecht, Lambrecht Aviation, Holdrege, Neb.; Paul O’Carroll, Fly On Ag Service Inc., Nokomis, SK, Canada; Tommy Ellett, Ferriday Flying Service Inc., Ferriday, La.; third row: Tim Shamblin, Aero Applications Inc., Caldwell, Idaho; Don Younglove, R & R Flight Service, Mendota, Ill.; David Strohl, Strohl Aviation LLC, DeValls Bluff, Ark.; fourth row: Brady Coen, Coen Aerial Spraying, Wiley, Colo.; Leadership Training Program facilitator Steve Powell; Shea Christmas, Christmas Flying Service, Merigold, Miss.; Scott Heinen, Heinen Brothers Agri Service, Seneca, Kan.; Steve Anderson, Yuba City, Calif.; back row: NAAA’s Andrew Moore; George Parker III, Crop Jet Aviation, Gooding, Idaho; Wade Berry, Devil Dusters, Lake Arthur, N.M.; Preston Johnson, Ascend Ag Inc., Wall, S.D.; Rex Martin, Syngenta; and NAAA President Dana Ness. Syngenta Crop Protection has generously sponsored NAAA’s Leadership Training Program since its inception in 1995.

opening General Session by Moore and Bradbury. While the Government Relations Committee revisited those topics, they paid particular attention to NPDES permit requirements, the Endangered Species Act, pollinator issues, drift reduction technologies and efforts to register sensitive crops. G.R. chair Randy Hale cautioned that the industry faces more and more scrutiny due to pollinator concerns and asked operators and pilots to do their best to be respectful of pollinators and their issues while they work.

Last fall, the Board passed a motion directing NAAA staff “to work with other agricultural organizations in developing a new or revised sensitive crop registry and field identification system.” In the period since then, NAAA consulted with CropLife America, the Agricultural Retailers Association and other stakeholders interested in DriftWatch™ and other proposed field identification systems. Together the groups proposed a set of general principles for sensitive crop registries. The Government Relations Committee

presented a motion seeking the Board's support for the governing principles. They consisted of nine points that NAAA would advocate for in any sensitive crop registry/field identification system to ensure maximum user participation of such technology. Some of these principles include a positive brand name connotation focused on stewardship and improved communication; accurate, current and independently validated data that is kept secure; governance that is transparent and representative of its users; and a sound business plan that ensures long-term sustainability and supports operational effectiveness. The NAAA Board approved the motion supporting these principles.

Meanwhile, prior to the Board meeting, NAAA met with the FAA's Obstruction Evaluation Group to discuss low-level obstacles. The meeting was productive in getting a commitment from the Agency to consider expanding the tower marking Advisory Circular—which recently was expanded to provide marking guidance for METs under 200 feet—to expand to all towers above 50 feet, both guy-wired and free-standing. It was also reported during these meetings that the FAA will be issuing its tower database feasibility study shortly. The study was required by Congress as a result of NAAA's efforts seeking to create an FAA database that would store the location of towers and enable low-level aviators to look up towers in their area of operations.

More Committee News

In other committee news, the Budget & Finance Committee approved the FY 2013–2014 draft budget, which was subsequently approved by the NAAA Board of Directors. For the first time in several years,

the new budget predicts a surplus. This is due in large part to Pratt & Whitney Canada's generous pledge to contribute a new PT6 engine to NAAA's 2013 Live Auction.

The Convention Committee considered past, present and future NAAA Conventions during its meeting, including the 2012 NAAA Convention in Savannah, Ga., and the upcoming 2013 Convention in Reno, Nev. The biggest news to emerge, however, was the committee's decision to hold the 2016 Convention in Long Beach, Calif. The committee reached that conclusion after viewing a presentation from a representative of the Long Beach Convention & Visitors Bureau. Committee co-chair Randy Hardy also spoke highly of Long Beach, noting that he had been skeptical at first, but left with a completely different view of the city after a site visit last fall.

In the more immediate future, "Ag Aviation: Agriculture's Best Deal" was chosen as the theme for the 2013 NAAA Convention & Exposition. Programming is slated to include a General Session focused on advocacy and public relations training, as well as two new offerings on "speed mentoring" and safety. The speed mentoring session is aimed at new and low-time ag pilots who will have the opportunity to meet with established pilots and operators in small group-type settings that will allow for more personalized mentoring. The idea is to build on the popular *Compass* Rose sessions offered at the convention. The safety session will include a video on human factors and will be presented by NAAREF. NAAREF President Randy Hale said the point is to use the NAAA Convention to share additional safety information with attendees.

Two other motions that were adopted include:

1. Directing the Constitution and Bylaws Committee to propose amendments to the NAAA governing documents to ensure they are in compliance with the new District of Columbia Nonprofit Corporation Act. NAAA is and will remain incorporated in Washington, D.C., and is therefore subject to the D.C. statute.
2. Approving the 2013 Long Range Strategic Plan as presented by the Long Range Planning Committee. The new strategic plan sets out a progressive vision for the aerial application industry and the Association over the next five years.

In other matters, the Membership Committee approved the inclusion of a decal with a year designation to be sent with operator renewal packets starting in 2014. The decal will be designed for "outside" use to affix to aircraft, vehicles or wherever the operator decides. Operators will receive one decal per paid aircraft tied to their membership. An updated Professional Operating Standards booklet is also expected to be released to members in 2014.

The Communications & PR Committee discussed a variety of initiatives, including future magazine articles, website updates and preliminary discussions about two forthcoming milestone anniversaries, NAAA's 50th anniversary in 2016 and the agricultural aviation industry's 100th anniversary in 2021. In addition, the Communications Committee decided to extend the practice of furnishing free wind tower safety stuffers to NAAA operator members until supplies are exhausted. The

double-side safety stuffers fit into a No. 10 envelope and are available in packs of 100. They are available to NAAA operators upon request by contacting NAAA at (202) 546-5722 or information@agaviation.org.

In the education and outreach arena, NAAA and the WNAAA will have representatives at the Commodity Classic, Ag in the Classroom and the National FFA Convention this year. The Associations staff these events to generate interest in the industry among students and teachers and market aerial application services to farmers. Volunteers are needed and expenses are covered. Anyone interested in representing the aerial application industry at one of these events should contact Jane Pitlick at (605) 258-2743 or Gavin Morse at (509) 220-4338.

In the Insurance Committee meeting, committee members discussed state insurance requirements for chemical drift insurance emanating from state departments of agriculture or plant boards. In several instances, states are requiring coverage that isn't commercially available—the liability coverage is at rates above what insurance companies can even offer. Chairman Doug Davidson informed the Board that insurance agents and underwriters are willing to work with the necessary agencies to help them understand insurance market availability. He implored operators to let NAAA know if these issues arise in their state so that the Insurance Committee in turn can assist before the insurance requirements get out of hand.

The Safety and Federal Aviation Regulations Committee welcomed a special guest at its meeting. Dr. Don Arendt, Manager of FAA's SMS (Safety Management System) Program Office, attended to help clear up some procedural SMS program

issues. He suggested that since SMS scares people due to misconceptions when they first hear about it, just drop the second S and refer to it as Safety Management. He also advised watching how procedures are labeled. Identifying something as a "procedure" in a company's safety manual could broaden an operator's liability if it is determined the procedure was not followed, Arendt cautioned.

Reporting on NAAREF's committee discussions, President Hale informed the NAAA Board that NAAREF passed its budget for 2013–2014 and remains financially sound. Later, Richie Crockett of the New Mexico Agricultural Aviation Association

(NMAAAA) presented Hale with a \$3,000 donation for the PAASS Program and renewed his challenge to other state and regional associations to match New Mexico's donation.

Finally, in WNAAA news, Vice President Leslie Craft reported that Cathe Fish has been chosen to be the keynote speaker at the WNAAA Convention in Reno. Fish is a certified flight instructor who has worked in aviation safety for many years.

With no further business to discuss, the board meeting adjourned on Saturday afternoon. The next board meeting will be held Oct. 11–13, 2013, in New Orleans. ■

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WHAT UNDERWRITERS LIKE TO KNOW FOR INSURANCE

By David Witzman
NAAA Insurance Committee

Aviation underwriters apply rates to aerial application policies based on the personal and business information they have available at the time. The more information available to underwriters, the more credit they will apply to a target rate guideline they are working with. When you are completing your renewal information request form, it is in your best interest to pass along as much information as you can. All information about any recurrent training you, your pilots and other employees may have participated in during the preceding 12 months is important. Underwriters should

be informed about completion of the PAASS Program, Operation S.A.F.E. participation and any other chemical or plant board certification training you and your pilots may have participated in. Explain any advanced flight training towards a new pilot certification or rating that you and your pilots may have participated in.

If you have developed a company procedures or operations manual, make sure the underwriter is aware you have a manual and supply a copy to the underwriter for your file. Spend a little extra time to explain your operations, the crops you typically treat, where you operate and the security procedures that you follow. Another good tool is to

develop a business plan which explains your operation and update it annually at renewal time. If you have a website that has information and pictures of your business, also supply that website address to your underwriter. Describe all maintenance procedures and provide the person's name or company name that does the maintenance for your aircraft.

Don't forget to list your memberships to all state and national trade associations and other organizations that you and your pilots belong to. It is also beneficial to list offices you currently hold or have held in the past within these organizations.

To get a comprehensive insurance program to cover all of your assets and one that leaves no gaps in your coverage, you must make your agent and underwriter aware of what you are doing and do so in a timely manner. It is not uncommon for agents to still be begging for renewal information to supply to the underwriter days prior to renewal! Don't wait until the eleventh hour.

Let the underwriter do his or her job and provide the terms and conditions available for your exposures. Get answers to any questions you have before signing papers. No one likes surprises and claims denials. If you have had claims in the past, take an active role in gathering information required to settle claims quickly. In the event of any claim, the information you provided at renewal is treated as a warranty. If actual information gathered from logbooks or other records is

It is not uncommon for agents to still be begging for renewal information to supply to the underwriter days prior to renewal! Don't wait until the eleventh hour.

significantly different than what you stated, a claims examiner could call foul. It is usually very beneficial to have your underwriter visit your operation, so suggest that they make a visit.

Aviation insurance is not like any other type of insurance, due to the relatively small numbers of aircraft involved. Underwriters make their decisions relative to acceptance and rating based on the information provided.

How good is the information you provide? Review it with your agent and underwriter today! ■

Is there an insurance matter you would like to learn more about or think would be of interest to Agricultural Aviation's readers? The NAAA Insurance Committee welcomes your suggestions. Please send insurance article ideas to information@agaviation.org.



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AERIAL APPLICATION TECHNOLOGY RESEARCH PLANS FOR THE NEXT FIVE YEARS

Lead scientist Clint Hoffmann (center, white shorts) stands with the field crew from a large-scale drift study the USDA-ARS Aerial Application Technology Group conducted last year. Along with AAT agricultural engineers, the crew included a few visiting scientists and student workers.

By Brad Fritz, USDA-ARS Aerial Application Technology Group

The start of the New Year typically brings with it new resolutions and new plans. While this article finds you a couple of months into 2013, the USDA-ARS Aerial Application Technology Group (AAT) has been and continues to work on developing our research program not only for 2013 but also for the next five years. Our project is close to reaching the end of its current five-year cycle, which was put in place in 2008. These five-year research cycles were introduced across the USDA-ARS in an effort to introduce a level of external review and accountability to the Agency's research programs. We have successfully completed the elements of our previous plan and are now looking forward to the next five years and working to identify research projects and programs that will benefit the aerial application industry and your business.

In addition to these research efforts, we are also looking to expand our efforts of effectively communicate the results of our work to you. This includes maintaining and updating our website, contributing articles to *Agricultural Aviation* and our annual joint ASABE/NAAA Technical Session held in conjunction with the National

Convention. To be successful in these endeavors, we need your input. With that in mind we are providing you with a quick overview of our 2013–2018 research plans. Additionally, we have created a short survey through which you can help us focus our short and long-term planning efforts.

The current outline of our 2013–2018 research program is divided into two distinct components. The first focuses on the physical elements of the spray system that directly affect how the spray is applied and how effectively the applied spray deposits on the desired target. It also focuses on methods that can be used to mitigate off-target movement. These drift reduction initiatives range from updating the current spray nozzle models and developing new product specific models, to developing and updating systems to measure spray swath uniformity, to the selection and use of drift reduction technologies. The second component is focused on remote detection and identification of plant pests and crop health issues to support timely management decisions for aerial applications.

As we work to further refine our research program for the next five years, we would like to request your input. We distributed a brief survey to this end at the 2012 NAAA Convention and did receive a number of responses. In an effort to make providing your input as easy and quick as possible, we developed an online survey which you can find a link to on the homepage of our website (<http://apmru.usda.gov/aerial>). A direct link to the survey can also be found at www.surveymonkey.com/s/52T5DNB. If for any reason you have difficulty with these links but still wish to participate, please send us an email at aerialapplication@gmail.com and we will forward the survey to you. The survey consists of a few quick questions and one spot for any additional feedback. You are also welcome to provide us with any feedback by contacting any one of our group or through the email listed above. Contact information for each member of our group can be found on our website.

Thank you for your support in this and for the continued support you provide to our group. ■

Test Your Knowledge

The September/October 2012 issue of *Agricultural Aviation* carried the last of the chapter review questions from the Aerial Applicator's Manual: A National Pesticide Application Certification Study Guide. We thank the National Association of State Departments of Agriculture Research Foundation (NASDARF) for permission to reprint selected ques-

tions from the chapter review questions from the manual. When taking any state's pesticide license examination, answers to questions which require math and multiple steps are very easy to miscalculate. This quiz will contain review questions which must be solved mathematically and require attention to quantities and terms.

How well will you fare? Let's find out!

- 1. If 1700 ounces of material is collected from nozzles on a helicopter spray boom in 90 seconds, what is the total flow volume in gallons per minute?**
 - A. 4.42
 - B. 8.85
 - C. 13.28
 - D. 17.70
- 2. An aircraft spraying system has an output volume of 8 gallons per minute. How many gallons are sprayed per mile when the aircraft travels at 130 miles per hour?**
 - A. 3.7
 - B. 4.5
 - C. 5.8
 - D. 6.5
- 3. An aircraft sprays 20.2 gallons per minute. How many minutes of spraying time are needed to spray out 147 gallons of spray mixture?**
 - A. 6.8
 - B. 7.3
 - C. 8.5
 - D. 9.0
- 4. Given an application rate of 11.3 gallons per acre, how many acres can be sprayed with 147 gallons of spray mixture?**
 - A. 11
 - B. 12
 - C. 13
 - D. 14
- 5. If an aircraft treats 14 acres per tank of spray mixture, how many pints of pesticide liquid should be put into the spray tank to apply at a volume of 1.5 pints per acre?**
 - A. 11
 - B. 15
 - C. 21
 - D. 24
- 6. How many acres are in a rectangular field that measures 620 feet by 1280 feet?**
 - A. 16.1
 - B. 18.2
 - C. 22.8
 - D. 28.8

See answers on pg. 49

Where to find the Aerial Applicator's Manual

The Aerial Applicator's Manual is available in electronic format on NAAA's website at www.agaviation.org/content/aerial-applicators-manual. The manual also can be found by scrolling to the bottom of any page on NAAA's site (www.agaviation.org), click on "Links" in the footer, then scroll to the end of the Related Entities page and click on "Aerial Applicator's Manual" under "Publications." Pg. 49 provides explanations for the answers and the page or pages in the manual where the topic is discussed. Hopefully this will introduce those taking the quiz to the contents of the manual which we encourage everyone to study in the quest for industry knowledge. —
Ken Degg, NAAA Director of Education & Safety



NAAREF PROGRAM SPONSORS

Operators and Pilots, Federal and State Agencies, Insurance and Service Providers, Aircraft and Equipment Manufacturers, Chemical Companies, Academic Institutions and State Associations sponsor NAAREF projects, including the PAASS Program. Donations are at the category level unless individually noted. **Donors that have pledged for three to five years or have donated the last three years at that level are shown in bold print.**

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Special Assistance to the PAASS Program

Dr. Scott Bretthauer
John "Dusty" Dowd
Dr. Bradley Fritz
Wayne Handley
Dr. Clint Hoffmann
Kerry Porter
Rod Thomas

Memorials presented to the PAASS Program

NAAREF and the PAASS Program express sympathy to all those who have lost loved ones or friends and wish to have them remembered through a memorial. We are extremely grateful to those families who, during their time of grief, decided to request that memorial donations be made to the PAASS Program. Those memorials will be used in the production of our PAASS safety and educational program with the goal of preventing injury or death to those engaged in the aerial application industry. The donors remain on the list for a year after their donation is received.

Darrel Bjornson Memorial

North Dakota AAA

Nathan Brown Memorial

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Earnest Knutson Memorial

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Jon Kuehn Memorial

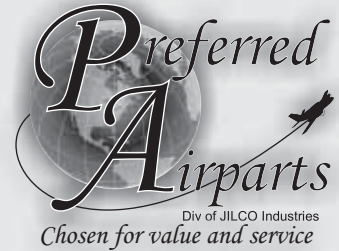
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List member companies you work for: _____

ALLIED INDUSTRY: Indicate your division: Airframe Application Technology Chemical Dealer/Parts Insurance Propulsion Support

MEMBERSHIP CATEGORIES: (please select one)

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<input type="checkbox"/> Operator	\$500, plus \$100 per aircraft for every aircraft over one	Operator of Aerial Application Business (must belong to state/regional Association)
<input type="checkbox"/> Extra Aircraft Over One	\$____	\$100 per aircraft for every aircraft over one (per Operator)
<input type="checkbox"/> Affiliated Operator	\$200	Operator Partner, Stockholder, or Non-Pilot Employee
<input type="checkbox"/> Participating Operator	\$1,000, plus \$100 per aircraft for every aircraft over one	Operator not belonging to any State/Regional Association
<input type="checkbox"/> Extra Aircraft Over One	\$____	\$100 per aircraft for every aircraft over one (per Participating Operator)
<input type="checkbox"/> Pilot	\$200	Pilot employed by Aerial Application Business (must belong to state/reg. Association)
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Or Fax to: 202-546-5726. Questions, call 202-546-5722 or email to information@agaviation.org

Welcome to New Members

As of Jan. 28, 2013



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Greg Brown

Southern Illinois Custom Aerial LLC
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Joey Daniels

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Gene Kritter

Kritter Cropdusting
Culpeper, VA

Richard Marburger

Aero Spraying Service Inc.
Williston, ND

Dennis McGarity

McGarity Flying Service LLC
Sikeston, MO

Wayne Page

Page Aerial Service, Inc.
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Jeff Rottinghaus

Blackhawk Air LLC
La Porte City, IA

Theodore Simmons

Stevenson Aerial Spraying
Lakeview, MI

Ken Squires

Penn-Tex Helicopters Inc.
Jeanerette, LA

Brooks Underwood

Air Works LLC
Murray, KY

PILOT

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Aaron Bartels

Wilbur-Ellis Company
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Walter Bazemore

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Dustin Bluhm

Johnson Airspray
Grafton, ND

Moshe Brenner

Delray Beach, FL

Steve Chaney

Wilbur-Ellis Company
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Kenneth Crone

Wilbur-Ellis Company
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Bryan Daniel

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Claude Eure

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Andre Muehlematter

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Date	City	State	Aircraft Type	N #	Injury	Description of Accident
2012						
08/17/12	Bogata	TX	AT-502B	6047G	None	Unable to remain airborne after takeoff
08/17/12	Gum Neck	NC	AT-402B	5127T	None	Veered into corn while taking off on rough strip
10/20/12	Newton	GA	AT-502B	502PB	None	Hit power line static cable
2013						
01/03/13	Five Points	CA	Bell 47G5A	14841	Minor	Main rotor blade hit pole
01/08/13	Riverdale	CA	OH-58C	911PT	Serious	Flight control anomaly—uncommanded roll

Test Your Knowledge Answers Continued from pg. 43

- The correct answer is B.** Calculate using the formulas in "Sidebar 1" on pg. 67 to first arrive at the number of ounces per minute applied. $1700 \text{ ounces} \times 60 \text{ seconds/minute} \div 90 \text{ seconds of collection time} = 1133.33 \text{ ounces/minute}$. To change ounces/minute to gallons/minute, divide $1133.33 \text{ ounces/minute} \div 128 \text{ ounces/gallon} = 8.85 \text{ gallons/minute}$. (Aerial Applicator's Manual: A National Pesticide Applicator Certification Study Guide [AA Manual], pgs. 66–67)
- The correct answer is A.** The aircraft's speed is given as 130 mph which can be divided by 60 minutes to find miles per minute ($130 \text{ miles per hour} \div 60 \text{ minutes per hour} = 2.167 \text{ miles per minute}$). Also given is an output volume of 8 gallons per minute and we have calculated that the aircraft traveled 2.167 miles per minute. We calculate the gallons of spray dispensed in a mile as approximately $3.7 (8 \text{ gallons per minute} \div 2.167 \text{ miles per minute} \approx 3.7)$. (AA Manual – pg. 68 – Sidebar 2)
- The correct answer is B.** Don't you wish all calculations were this simple! If you are applying 147 gallons of spray mixture at a rate of 20.2 gallons per minute, the answer can be calculated by simple division. $147 \text{ gallons} \div 20.2 \text{ gallons per minute} \approx 7.3 \text{ minutes}$. (AA Manual – Review equipment calibration – pgs. 65–75)
- The correct answer is C.** Another easy one! The answer can be calculated by this method. If you are applying 147 gallons of spray at a rate of 11.3 gallons per acre, the answer can be easily arrived at by simple division. $147 \text{ gallons} \div 11.3 \text{ gallons per acre} \approx 13 \text{ acres}$. (AA Manual – Review equipment calibration – pgs. 65–75)
- The correct answer is C.** Using the information given in Sidebar 5, multiply the pints per acre by the acres per tank to arrive at the total chemical used in pints. $1.5 \text{ pints/acre} \times 14 \text{ acres/tank} = 21 \text{ pints of chemical required}$. The example shows division by 8 pints/gallon, but it is not needed since that step converts the answer to gallons of chemical. (AA Manual, pg. 70)
- The correct answer is B.** The area of a rectangle is calculated by multiplying the length times the width – $1280 \text{ feet} \times 620 \text{ feet} = 793,600 \text{ square feet}$. There are 43,560 square feet/acre – therefore $793,600 \div 43,560 \approx 18.2 \text{ acres}$. (AA Manual – pg. 71 – Sidebar 6)

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CHEMICALS

BASF Corporation inside front cover
 DuPont Crop Protection9
 GarrCo Products, Inc.....19
 PBI/Gordon Corporation11
 Precision Laboratories Incorporated..... 32-33

Wilbur-Ellis Company.....35

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NAAREF President's Message

Randy Hale

PAASS is Prologue

As I write this column, the Professional Aerial Applicators' Support System (PAASS) is nearing the end of its 15th season of providing high-quality safety training programs to the ag aviation industry. The PAASS Program is presented at more than 20 state and regional association meetings and seen by nearly 2,000 operators, pilots and support personnel each season. The goals of the PAASS Program are to reduce the number of ag aviation accidents and drift incidents and to accomplish this through education, not regulation.

The first PAASS Program was presented by a paid professional speaker who was great at leading programs but didn't know much about our industry. Today the programs are led by two-man teams who are either pilots themselves or are deeply involved in ag aviation. Each presenter is trained on the material for the season and whatever new technology comes along to make the program better. You probably remember the days of overhead projectors and flip charts, which were high-tech at the time. Today's PAASS is presented with PowerPoint programs using HD video and quality audio systems. Some who attended spring meetings were able to interact with presenters by using audience response tablets, which will be used in all the programs next season.

Technology is a great thing and makes the PAASS Program more effective and enjoyable, but the knowledge and dedication of the staff, program presenters and those who volunteer to be on the committees that develop the material for a new program every year are so important. Their willingness to spend many hours discussing ideas, writing scripts and standing before a crowd of their peers talking about tough topics has led to the success of the program. These folks have several things in common including love for the ag aviation industry and the people involved, and the obligation they feel to give of their time and talent to help others succeed. Thanks go out to all of you who have made PAASS the premier aviation safety program in the country. I truly believe without organizations like NAAA, NAAREF and the state

and regional associations, and programs like PAASS, we would not recognize our industry or possibly not even still be around.

All of the quality technology that goes into making PAASS a state-of-the-art education vehicle does come with a price tag. Without the many sponsors of NAAREF and PAASS, we all would be paying double the price to see the program. For those sponsors who pay to have their advertisements run during the program, thank you for your support. These ads allow NAAREF to continue raising the bar year after year and add quality to the program. Many state associations and individuals also donate funds to sponsor PAASS and other NAAREF projects. We have listed them by name in our donor list on pg. 44. We thank all of you for your dedication to the industry and your desire to make ag aviation safe and profitable. If you would like to make a donation to NAAREF you can accomplish this simultaneously when you pay your NAAA dues (or join NAAA) online at www.agaviation.org/content/membership. Furthermore, you can make an online contribution anytime at www.agaviation.org/content/pledge-and-donation-information.

If you are one of the 2,000 attendees who witnessed the PAASS Program this season, please fill out the evaluation on SurveyMonkey at www.surveymonkey.com/s/12-13evaluation and let us know what you thought of it and what you want to see in future programs. Your input is vital to the process of building PAASS Programs that continue to reach our goals of fewer accidents and drift incidents through education. If you did not see a presentation this season, put it on your calendar for next year.

Finally, put something back into this great industry by volunteering your time and talent in any way you can. It could be through your state association, NAAA or NAAREF boards or serving on one of the many committees that serve these groups. Remember the PAASS motto, "Upon the performance of each rests the fate of all," and have a safe and prosperous year. ■

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