

Agricultural Aviation



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Taking the Controls

Arkansas' Mark Hartz
Ascends to New Heights
as 2012 NAAA President

ALSO INSIDE:

- What Happened in Vegas!
- Meet the 2012 Officers
- Complying with EPA's NPDES PGP



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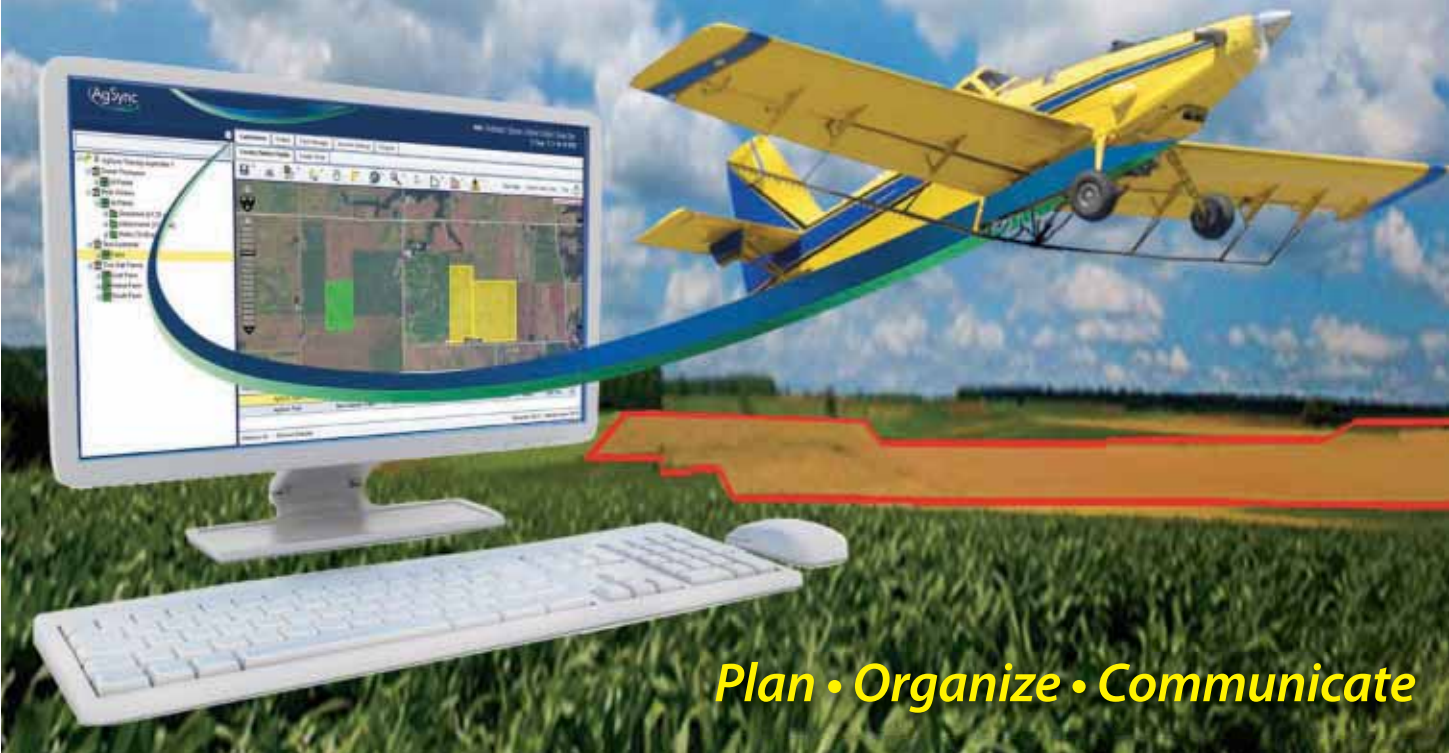
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NAAA Staff

Executive Director/Executive Editor

Andrew Moore

Assistant Executive Director

Peggy Knizner

Office Affairs Coordinator

Margaret Dea

Director of Education & Safety

Kenneth Degg

Manager of Communications/

Agricultural Aviation Managing Editor
Jay Calleja

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Danna Kelemen

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ON THE COVER

Mark Hartz, NAAA's 2012 President, poses in front of his deep blue Thrussh

ALSO INSIDE:

NAAA dealt a winning hand to attendees at its 45th Annual Convention in Las Vegas



COVER STORY

Grand Plans20

Grand Prairie Dusters' Mark Hartz is relishing the opportunity to serve as NAAA's 2012 President

Plus:

Officers in the Spotlight: VP Leif Isaacson, Secretary Gaylon Stamps and Treasurer Kyle Scott.....23

This Team's the Real Deal: Introducing Kathy Diehl and the 2012 WNAAA Officer Team28

FEATURES

Coming up Aces!34

NAAA's 2011 "America's Winning Hand" Convention was a big hit with attendees and for the Association. Complete coverage of this historic convention begins on pg. 34

Scenes from NAAA's 2011 Convention46

A Chemical Session Six-Pack.....50

ASABE: Agricultural Engineering at Work.....52

New Technologies at NAAA 2K11...60

Profiles in Excellence62

A special salute to the 2011 NAAA Award recipients:

- John Garr.....63*
- Carolyn Baecker.....64*
- Rod Thomas.....65*
- Jayne Rucker.....66*
- Judy Chanay.....67*
- Billy Whitfield.....68*
- Nick Richter.....69*
- Grant Lane.....70*
- Loren Dannhaus.....71*
- Robert McCurdy.....72*

Proper Planning Puts You in Pilot's Seat74

There are four elements to a complete succession plan

NOTES

President's Message.....4

Hartz term begins with eyes wide open

Executive Director's Message6

Looking back on 2011 and forward to 2012

WNAAA President's Message8

Women from all walks of life welcome

NAAREF President's Message84

New Year's resolutions worth keeping

DEPARTMENTS

Washington Report10

Aerial applicators' obligations under EPA's final Pesticide NPDES General Permit

Test Your Knowledge33


NAAA Membership Application.....77

NTSB Accident Report.....78

Index of Advertisers79

Welcome to New Members83

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President's Message

Rick Richter

Hartz Term Begins with Eyes Wide Open

A funny thing happened to me on the way to the 2011 Fall Board Meeting of the National Agricultural Aviation Association. I was asked to serve as president of NAAA for 2012. How did I get here? I'll get back to that, but first a few words of appreciation are in order. To 2011 President Rick Richter and his outgoing team of officers a large measure of thanks is in order. Our Association was well represented and numerous opportunities were pursued to spread the positive word and refute false information that would have cast our industry in a bad light. I am extremely honored to serve as president of NAAA for 2012. I look forward to serving the needs of the Association and all of its members.

Serving with me as your officer team are Leif Isaacson (Idaho) as vice president; Gaylon Stamps (Texas) as secretary; Kyle Scott (Colorado) as treasurer; Kathy Diehl (Kansas) as WNAAA President; and Rod Thomas (Idaho) as NAAREF President. With the wide range of experience this officer team brings to the table it is with great anticipation that I look forward to engaging the issues that confront our industry on behalf of NAAA.

Now back to the question, how did I get here? As a new operator my partner and I started attending a big party held in December each year called the National Agricultural Aviation Association Annual Convention. Every year we would go and see new agricultural aircraft, many new and innovative products used in our industry, meet new people and make lasting friendships that would endure for years. There were even seminars and speakers to discuss topics of interest that directly pertained to how we made our living. Little thought was given to how this big party came to occur or what went on behind the scenes to prepare for such an event.

Some years ago I was given the opportunity to serve as Arkansas' representative to NAAA. Serving in that capacity I learned there were a great number of people who worked year-round on issues confronting our industry. And lo and behold, there was even a committee, a convention committee, whose sole purpose was to organize and

orchestrate what I had formerly thought of as just a big party but in reality is the premiere gathering of all who make their living in the aerial application business or provides goods and services to our industry.

As I continued to serve on the Board of Directors my understanding of just what all our Association does for our industry increased exponentially. As the years have passed I have become firmly convinced our industry would not be in existence or at the very least severely diminished from the thriving industry that it is now were it not for the work the National Agricultural Aviation Association has done over the years and continues to do to this day.

Upon the realization of all the time and effort that so many people over the years have given to ensure the survival of the agricultural aviation industry and the way I have chosen to make my living, I felt compelled to serve the Association in any way I could in an effort to give something back to the industry. So there just wasn't any way to say no when asked to serve as president of NAAA for 2012, especially knowing all this Association has done to promote and defend the existence of this vocation we call agricultural aviation.

Exciting and Challenging Times

As always, there are issues that confront our industry. Some are perennial and ever present and some crop up seemingly out of thin air. From the EPA NPDES Pesticide General Permit, Endangered Species Act concerns, EPA drift language proposal, MET tower concerns and numerous other issues, our NAAA staff works tirelessly year-round to further the cause of aerial application against those entities that wish to diminish our existence. The issues confronting our industry will only increase over time.

For years our staff has worked in an office that while close to Capitol Hill has been very space limited. By the time you read this our Association should be well on the way to completing the purchase of a new office facility. This has been

one of the Association's priorities for years and it is finally coming to fruition. Over the years the activities of your Association have increased tremendously. As a result of being space limited in our current building, a converted townhouse, adding staff to better serve the needs of the Association has been impossible. With the additional space the new office will afford, we can now look forward to recruiting additional staff to meet the future needs of the Association.

NAAA has an exciting year ahead and I wish to thank you for your confidence in electing me as president for 2012. My hope is for all to have a prosperous year, but let's also make it a safe year. As we move forward, a strong association that advocates the positive aspects of agricultural aviation will be invaluable to our industry and I urge all to support our industry and Association any way you can.

If you aren't a member, won't you join us and lend your support to an organization that also has your best interests

As the years have passed I have become firmly convinced our industry would not be in existence or at the very least severely diminished from the thriving industry that it is now were it not for the work NAAA has done over the years and continues to do to this day.

at heart? Strength is in numbers. Considering the regulatory climate we live in today and for the foreseeable future, we need to continue to build the strength and stature of the National Agricultural Aviation Association. ■



President Hartz flanked by his 2012 officer team, from left to right, Treasurer Kyle Scott, Vice President Leif Isaacson and Secretary Gaylon Stamps.



Executive Director's Message

Andrew Moore

What a Long, Strange Trip It's Been *2011 Year in Review; Forecasting 2012*

There has been no shortage of interesting developments over the past year pertaining to the aerial application industry, whether related to government policy, media coverage or practices occurring in the field. NAAA has been there along the way attempting to positively influence outcomes to the industry's benefit.

Government policy is one area where we have seen a number of developments affecting our industry. Based on the direction government policy has taken this year, some trends are occurring that provide an idea of the future direction of the government. One such trend is a concerted effort to get spending under control based on the nearly \$15 trillion of federal debt (and growing). Compounding these debt concerns are projections the federal entitlement programs for older citizens will continue to strain the federal government well into the future. For example, there were 12 working-age people for every person over 65 in 1950; by 2050 there will be three—a much smaller pool to pay into Medicare and Social Security.

In 2011, when they retook the U.S. House of Representatives, Congressional Republicans changed the focus from stimulus and deficit spending to simply deficit reduction. All sectors of government will see reductions. Federal ag assistance is highly likely to markedly decrease. The law agreeing to raise the debt limit last summer established a joint deficit reduction committee tasked with reducing the deficit by \$1.2 trillion over 10 years; the committee failed to reach an agreement so now automatic, across-the-board cuts will be enforced beginning in 2013. Moreover, last fall President Obama proposed to reduce \$3.2 trillion in federal government borrowing over a decade, which included \$33 billion in cuts to agriculture. This included a large portion aimed at eliminating direct payments to producers and reducing crop insurance

subsidies. Producer groups seem to realize subsidy reductions are inevitable but want an insurance safety net. That battle will play out this year as the Farm Bill is slated to be reauthorized.

Agricultural research is also markedly decreasing with a reduction of 10% last fiscal year and another 10% reduction this year. NAAA is working hard to support USDA-ARS Aerial Application Technology Group (AAT) funding. Over the years this has resulted in the development of numerous aerial application technologies and techniques to mitigate drift and make applications more efficacious. NAAA was able to get language included in report language to the congressional ag appropriations bills recognizing the importance of ARS's Aerial Application Technology Program in conducting "innovative research making aerial applications more efficient, effective and precise." This was one of only a few research programs mentioned in the report. It will be hard for the USDA to ignore congressional input as they allocate their funding for ag research.

The growing federal debt will likely also have an effect on how we are taxed as an industry. More money is needed to pay for past and current spending. In September 2011 President Obama proposed a \$100 per flight fee for those who fly in controlled airspace. Military aircraft, public aircraft, recreational piston aircraft, air ambulances, and aircraft operating outside of controlled airspace would be exempted. NAAA is working with a larger General Aviation Coalition to oppose this proposal and was successful in obtaining an ag aviation exemption in 2008 within Senate legislation proposing a general aviation industry user fee. This is probably a harbinger of more user fees and taxes to come as federal coffers tighten. NAAA will also have to play defense in protecting its exemption from federal excise taxes on aviation fuels used for farming purposes.

Continuing Regulatory Concerns

Logic would dictate that with reductions in federal discretionary spending there would be reductions in government regulations, but that has not been the case. NPDES permits have gone into effect as of Nov. 1, 2011 (much more on this in the Washington Report on pg. 10).

Much of what we see in terms of regulations comes from lawsuits and judicial decisions. That of course was the case with EPA developing Clean Water Act (NPDES) permits for pesticide applications made over or near water. The U.S. Court of Appeals, 6th Circuit, decision mandated EPA to develop those permits.

Another looming court decision potentially awaits based on a lawsuit filed early last year by the environmental activist group the Center of Biological Diversity (CBD) in a U.S. District Court in California. The CBD is demanding EPA



Trying to F^{(e)l}ix the NPDES Pesticide Permit Debacle
Leonard Felix (far right) of Olathe Spray Service Inc. in Olathe, Colo., visited Washington, D.C., last November to testify before the House of Representatives' Small Business Committee on the unnecessary burden EPA's NPDES Pesticide General Permit will have on the aerial application industry. Felix's Congressman, Scott Tipton (R-CO) (second from right), chairs the Committee's Subcommittee on Agriculture, Energy and Trade. Also pictured (from left to right) are NAAA Executive Director Andrew Moore and Felix's wife Lou.

immediately consult with federal wildlife service's to assess the impacts of 381 chemicals on 214 endangered and threatened species. The CBD demands these assessments occur immediately rather than under the 15-year reregistration review timeline for each registered crop protection product.

NAAA joined other agricultural organizations and filed a motion to intervene in federal court in the CBD lawsuit so we would have a seat at the table with the other parties involved in the suit (EPA and CBD) to negotiate a settlement. In June the Judge granted in our favor for industry to have a "seat at the table" in settlement discussions involving the remedial phase of the case. This "seat at the table" markedly increases our chances of combating any unreasonable and/or unnecessary restrictions on pesticide use.

EPA also continues to develop uniform drift language on all pesticide labels. Final language was expected at the end of 2011. NAAA pushed back against EPA-proposed language released in 2009 that would potentially make an applicator liable for a pesticide application that results in spray drift that "could" cause an adverse effect. Since any application "could" cause drift, regardless of whether it did or didn't, NAAA and scores of other pesticide user groups adamantly opposed this language. Due to ag industry pressure, EPA revised its statement to read, "Do not apply this product in a manner that results in spray...drift that harms people or any other non-target organism or site." NAAA believes this is a step in the right direction; however, it has requested the Agency fine-tune the proposed revised statement to include the FIFRA standards' "unreasonable adverse effects" language to provide a more targeted definition of what type of "harm" must occur to be in violation.

EPA is also looking at releasing proposed revisions to its Worker Protection Standards and its pesticide certification standards later this spring. New requirements that may be

Continued on pg. 80



WNAAA President's Message

Kathy Diehl

WNAAA Welcomes Women from All Walks of Life

I am excited to have been given the honor of serving as the incoming president of the WNAAA. The leadership that has come before me is impressive and I will do my best to uphold the integrity and vision they have established.

Joining me in this task will be Pat Stamps from Panhandle, Texas, as vice president; Leslie Craft from Hertford, N.C., as secretary; and Erin Morse from Connell, Wash., as treasurer. Each one of these women is talented, resourceful and committed to this industry. They have been leaders in this organization and their states, and I am looking forward to working alongside them. I would also like to recognize the previous officer team of Julie Broussard as president, Dona Jorden as secretary and Elly Rau as treasurer, and all of the state directors. Your commitment to the WNAAA is unsurpassed and much appreciated.

My first experience with this organization started when I attended my first national convention. I was very impressed with the informative and entertaining programs presented by the WNAAA. Being new to the aerial application world it was extremely helpful to hear the experiences of those who had been in my shoes. At each convention I attended, new friends were made and new experiences were shared. I became actively involved in the organization when asked to be the state representative from Kansas. After that first term I was hooked and have enjoyed every minute since then.

“Teamwork is the ability to work together toward a common vision. The ability to direct individual accomplishments toward organizational objectives. It is the fuel that allows common people to attain uncommon results.” —Andrew Carnegie

I may work in a different profession, but I feel strongly about the agricultural aviation industry. As a banker I tend to be in a variety of situations where small talk sometimes leads to what my husband does for a living. It is important for me to be able to speak intelligently and with confidence about what he does. Working in the financial industry, I also know firsthand what regulations and image can do. If we as stakeholders in any industry don't step up to make a difference, we may find ourselves out of business.

In my role as president I will strive to support the main objective of the WNAAA which is to promote the positive image of the aerial application industry. We all need to be advocates in educating the public about what we do and how well we do it. I also want to encourage more women to be active and involved in the WNAAA. This organization is beneficial to all women who have a role in this industry, whether that be working directly in the business, a stay at home mom or working in a different profession. It did not take me long to realize that this is a group who welcomes anyone who has a stake in the agricultural aviation industry.

I am looking forward to working with the Association and the teams we have in place. By working together, I know that we can achieve the goals and visions that have been put in place to keep our voice in the industry strong. ■



One of the WNAAA Vice President's responsibilities is to make a scrapbook for that year's president. As the 2011 VP, Diehl presented her version to Julie Broussard. The memento is titled, "A Year in the Life of a Wild Wacky Wonderful Woman."



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Washington Report

John Thorne

Aerial Applicators' Obligations Under EPA's Final Pesticide NPDES General Permit

NAAA has worked to keep you abreast of the unfolding drama of EPA's and states' efforts to develop pesticide general permits (PGP) following the U.S. Court of Appeals, 6th Circuit, decision in 2009 and unsuccessful legal efforts to reverse that ruling. Stakeholders have called the new permitting requirement impractical, unnecessary and prohibitively expensive, and have lobbied Congress to take action. Capitol Hill has responded, but to date hasn't completed a legislative reversal of the court's decision. During the two-plus years this drama has unfolded, the court-revoked EPA regulations that exempt aquatic pesticide applications into, over or near waters of the U.S. still remained in place.

All of that ended on Oct. 31, 2011, when EPA implemented its permit. Now, such pesticide applications are regulated by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Clean Water Act (CWA). The new PGP requirements are estimated by EPA to more than double the total number of permittees under the CWA's National Pollutant Discharge Elimination System (NPDES) program.

EPA's PGP will affect every NAAA member who applies pesticides into, over or near waters of the U.S. or helps make decisions about applying such pesticides in the states where EPA is the lead agency (Idaho, New Mexico, Alaska, Oklahoma, New Hampshire, Massachusetts and nationwide federal lands (e.g., national forests, military bases, national parks, etc.) and most U.S. territories). As we describe below, 44 other states have or are in the process of implementing their versions of the PGP, following EPA's lead. But these state PGPs vary widely in content, waters they cover and other factors. For the states in which you operate, you will need to know what's needed to avoid violating these PGPs and triggering enforcement action, or worse, citizen suits.

The following information provides you the latest information as well as a guide to what you as aerial applicators of pesticides should know about how these PGPs could affect you. This isn't legal advice, and NAAA urges you to review the EPA documents for yourselves. But this article will provide you with a good start on that review, and Internet links are provided to the documents themselves.

Why NPDES Permit Coverage is Important

Before the 6th Circuit decision in 2009 and the final issuance of these NPDES permits in 2011, pesticide applicators and the entities that hired applicators simply had to comply with FIFRA labels plus any other state laws that might apply. However, with the 6th Circuit's decision, it is now a federal violation of the CWA to discharge a pollutant from a point source to a water of the U.S. without coverage by, and compliance with, an NPDES permit.

Although compliance requirements themselves are quite burdensome, the upside is that once coverage is gained the applicator and/or decision-making entity that has hired the applicator is protected from the substantial enforcement penalties (up to \$37,500 per day for each violation, going back to the original date of the violation) as well as citizen suits. Thus, for aerial applicators, just going to work after Oct. 31, 2011, entails many new responsibilities, even if you are completing pesticide-application contracts that were started before Oct. 31 while previous EPA regulations had exempted these pesticide applications from CWA regulations.

Not every type of pesticide application that would be subject to the CWA is covered by the EPA general permit; those applications must be covered by a state PGP or another type of NPDES permit. This is discussed in more detail later in this article. EPA's PGP became effective the day it was posted but for 120 days (through February 2012) the

agency plans to focus on compliance assistance related to the PGP, rather than enforcement. EPA's announcement does not mean it will not enforce the PGP, however, and CWA citizen suits may be filed at any time. State PGPs are still being implemented, as described later in this article.

Differentiating Between Applicators and Decision-makers: The key question is who must apply for PGP coverage versus who is automatically covered. Automatic coverage for those operators to whom it is available is a benefit, because less paperwork and compliance requirements are involved. EPA has established different requirements for applicators and decision-making entities (e.g., your clients), and it's important to know the difference between these categories so you can meet the PGP requirements that apply to your business.

Overall, the PGP regulates the activities of pesticide "operators" involved in discharges (pesticide applications) into, over or near waters of the U.S. These are either (1) "applicators" who perform the application of pesticides or have day-to-day control over the pesticide applications (i.e., they are authorized to direct workers to carry out those activities) that result in discharges to U.S. waters; or (2) "decision-makers" who have control over the decision to perform pesticide applications, including the ability to modify those decisions, that result in discharges to U.S. waters.

In the PGP, applicators have less burdensome requirements than decision-makers. But when an applicator is also a decision-maker, the applicator must comply with all applicable requirements imposed on *both* applicators and decision-makers. Furthermore, when the PGP references all "operators," both applicators and decision-makers must comply.

To make things more confusing, the PGP states "subcontractors" who are hired by an owner or other entity but are under the *supervision* of such owner or entity generally are not considered by EPA to be operators (their clients that hire them would be the entities regulated by the PGP). On the other hand, landowners or other entities are not likely to be considered an operator subject to the PGP if,

for example, they own the land but the pest control activities are being performed outside of their control (e.g., a public agency is spraying for mosquitoes over private property, or a private party is spraying for weeds on public lands leased from the federal government).

Pesticide Uses Covered by the PGP: The covered categories of pesticide applications are generally consistent with those addressed in the 6th Circuit decision, and do not represent every pesticide application activity that will require NPDES permit coverage. Four groups of pesticide uses are included:

1. **Mosquito and other flying insect pest control** to control public health/nuisance and other flying insect pests that develop or are present during a portion of their life cycle in or above standing or flowing water. Public health/nuisance and other flying insect pests in this category include mosquitoes and black flies;
2. **Weed, algae and pathogen pests in waters and at water's edge**, including ditches and/or canals. These represent both aquatic weed and algae control in water bodies, as well as weed control on ditch banks or drinking water/irrigation reservoir or canal banks. This category also covers weed control applications where the treated waterbody may simply be a dry creek or other conveyance at the time of treatment, and can be located in utility or transportation rights of ways, ranches, farms, forest floors or other upland areas that have conveyances that are considered waters of the U.S. It is this aspect of the PGP

Not all jurisdictional "waters" are easily recognized because they are not wet when pesticides are applied. A discharge to such an unrecognized jurisdictional water without PGP coverage could trigger legal jeopardy.



(unknowing or accidental discharge to a dry conveyance in an upland terrestrial area that was not known to be a water of the U.S.) that has farm, transportation and utility groups most concerned;

3. **Animal pest control in water and at water's edge.** Animal pests in this use category include fish, lampreys, insects, mollusks and pathogens; and
4. **Forest canopy pest control** where application of a pesticide to a forest canopy from the air or ground to control the population of a pest species (e.g., insect or pathogen) includes a portion of the pesticide that will unavoidably be applied over and deposited into water below. This is not considered spray drift, which is not covered by the PGP.

EPA estimates at least 365,000 pesticide applicators, including aerial applicators, farmers, forestland owners, public land managers, mosquito control districts, irrigation control districts, drinking water reservoir operators, government agencies and others, must now seek permit coverage under EPA's permit, state PGPs or individual permits. An explanation of the types of parties that are likely to fall into these use categories is available in the Federal Register notice of the final permit (www.epa.gov/npdes/pubs/pgp_final_registernotice.pdf), in EPA's fact sheet accompanying the permit (www.epa.gov/npdes/pubs/pgp_final_factsheet.pdf), or in the PGP on EPA's website (http://cfpub2.epa.gov/npdes/home.cfm?program_id=410).

Pesticide Uses Not Covered: Applicator and decision-making operators are not eligible for coverage under EPA's PGP for any discharge under the following circumstances (note: state-issued PGPs often have additional exclusions from coverage). Pesticide uses not covered include:

1. From a pesticide application to waters of the U.S. if the water is identified as impaired by a substance that is

either an active ingredient in that pesticide product or is a degradate of such an active ingredient. These include waters with EPA-approved or EPA-established total maximum daily loads (TMDLs) and waters for which EPA has not yet approved or established a TMDL. A list of those impaired waters is available on EPA's website (www.epa.gov/owow/tmdl/).

2. Except for discharges from pesticide applications made to restore or maintain water quality or to protect public health or the environment that either do not degrade water quality or only degrade water quality on a short-term basis, operators are not eligible for coverage under the PGP for discharges to Tier 3 (Outstanding National Resource Waters). A list of Tier 3 waters in geographic areas covered under this PGP is available on EPA's website at http://cfpub2.epa.gov/npdes/home.cfm?program_id=410.
3. Discharges currently covered by another permit or previously covered by another permit.
4. Discharges likely to adversely affect species that are federally listed as endangered or threatened ("listed species") under the Endangered Species Act (ESA) or habitat that is federally designated as critical under ESA. The PGP has a six-step checklist that decision-makers must submit to gain coverage that certifies their planned pesticide applications will not adversely affect such listed species or critical habitat. That six-step process can be found in Appendix D of the permit (www.epa.gov/npdes/pubs/pgp_appd.pdf).
5. Finally, the PGP does not cover irrigation return flow (which includes runoff from a crop field due to irrigation of that field) and agricultural stormwater runoff—which do not require NPDES permits because they are exempted by statute from CWA's NPDES program. Existing stormwater permits for construction, industry and municipalities already address pesticides in stormwater and are not covered by this PGP.

EPA has determined that runoff into engineered conservation measures on a crop field such as grassy swales and other land management structures that direct flow from the crop field is considered either irrigation return flow or agricultural stormwater, and is not subject to the PGP. However, discharges from the application of pesticides into irrigation ditches and canals that are themselves waters of the U.S. are not exempt and do require NPDES permit coverage to be legal. Any discharges to waters of the U.S. that are not covered by

EPA has established different requirements for applicators and decision-making entities (e.g., your clients). It's important to know the difference between these categories so you can meet the PGP requirements that apply to your business.



the PGP must be covered by an individual permit or another general permit to be legal. This will be addressed further in the section entitled “potential legal jeopardy.”

Requirements for Pesticide Applicators

Pesticide applicator requirements are less burdensome than decision-maker PGP requirements, but they are still enforceable and noncompliance could expose an applicator to enforcement action or citizen suits.

Warning: *This list will seem very long, and it is, but many of the activities listed are those you are likely to do already, such as maintain your equipment, calibrate your spraying apparatus and keep spray logs. However, these activities now are enforceable requirements that also involve required documentation and recordkeeping. Now both the activity itself (e.g., calibration) and the documentation of those activities in records are separately enforceable under the PGP.*

Perhaps the most important aspect of being an applicator is that you are *automatically* covered by the PGP without having to complete time-consuming forms. To meet the PGP requirements to minimize the discharge of pesticides to waters of the U.S., in addition to following the FIFRA label requirements, you must complete the following:

(1) Applicators must use Pest Management Measures: To the extent not determined by the decision-maker, applicators must use only the amount of pesticide and frequency of pesticide application necessary to control the target pest, using equipment and application procedures appropriate for this task; also maintain pesticide application equipment in proper operating condition, including requirement to calibrate, clean, and repair the application equipment and prevent leaks, spills or other unintended discharges; and also assess weather conditions (e.g., temperature, precipitation and wind speed) in the treatment area to ensure application is consistent with all applicable federal requirements.

(2) Applicators must also conduct the following monitoring activities: During any pesticide application with discharges authorized by the PGP, all applicators must, when considerations for safety and feasibility allow, visually assess the area to and around where pesticides are applied for possible and observable adverse incidents, as defined in Appendix A, caused by application of pesticides, including the unanticipated death or distress of non-target organisms and disruption of wildlife habitat, recreational or municipal water use.

(3) Applicators must also be aware of and take any needed corrective actions: Operators must review and, as necessary,

revise the evaluation and selection of Pest Management Measures (described in (1) above) for the following situations:

- any spill, leak or unauthorized release or discharge of pesticides not authorized by this PGP or another NPDES permit;
- the EPA concludes or applicator becomes aware that the Pest Management Measures are not adequate/sufficient for the discharge to meet applicable water quality standards;
- any monitoring activities indicate a failure of such Pest Management Measures to meet PGP requirements;
- an inspection or evaluation of activities by officials reveals that modifications of Pest Management Measures are necessary to meet requirements of the PGP; or
- any operator observes or is made aware of an adverse incident as defined in Appendix A.

Any corrective actions must be made before or, if not practicable, as soon as possible after the next pesticide application that results in a discharge. The occurrence of a corrective action described above may constitute a violation of the PGP. Correcting the situation does not absolve operators of liability for any original violation. However, failure to comply with the corrective action deadlines constitutes an additional violation. EPA may impose additional requirements if corrective actions are needed.

(4) Applicators must document and report any adverse incidents seen: If an operator observes or is otherwise made aware of an adverse incident, as defined in Appendix A, which may have resulted from the discharge of a pesticide to a water of the U.S., the operator must immediately notify the appropriate EPA Incident Reporting Contact (http://cfpub.epa.gov/npdes/contacts.cfm?program_id=410&type=REGION). This notification must be made by telephone within 24 hours of the operator becoming aware of the adverse incident and must include the information identified in the permit on page 6-2 at section 6.4.1.1. Within 30 days of a reportable adverse incident, operators must provide a written report to the appropriate Regional EPA office and to the state lead agency for pesticide regulation (http://npic.orst.edu/reg/state_agencies.html).

Also, if an operator becomes aware of an adverse incident to threatened or endangered species or critical habitat, notifying the National Marine Fisheries Service (NMFS)



In North Dakota's Prairie Pothole region, which covers much of the state, there are potholes of water throughout farmlands. The holes fill with water in some years and are empty in dry years.

in the case of anadromous or marine species or the Fish & Wildlife Service (FWS) in the case of terrestrial or freshwater listed species or habitat is required. This notification must be made by telephone to the identified contacts on EPA's website. Where the applications of multiple applicators result in an adverse incident, notification and reporting by any one of these constitutes compliance for all.

(5) Applicators must report a spill, leak or other unpermitted discharge that exceed notification thresholds:

If an applicator or other operator becomes aware of a spill, leak or other unpermitted discharge that triggers notification and results in an adverse incident, then this must be reported.

(6) Recordkeeping: All for-hire applicators must retain the following records: (a) documentation of equipment calibration; (b) information on *each* treatment area to which pesticides are discharged, including: description of each treatment area, including location and size (acres or linear feet) of treatment area and identification of any waters, either by name or by location, to which pesticide(s) are discharged; pesticide use pattern(s); target pest(s); name of each pesticide product used including the EPA registration number; quantity of each pesticide product applied to each treatment area; pesticide application date(s); and whether or not visual monitoring was conducted during pesticide application and/or post-application and if not, why not, and whether monitoring identified any possible or observable adverse incidents caused by application of pesticides.

(7) Records retention: All required records must be documented as soon as possible but no later than 14 days following completion of each pesticide application. Operators must retain any records required under this permit for at least three years after the Operator's coverage under this permit expires or is terminated. Operators must make available to EPA, including an authorized representative of EPA, all records kept under this permit upon request and provide copies of such records, upon request.

Requirements for Decision-makers

In addition to almost all of the above requirements of applicators, decision-makers generally have many additional and very burdensome requirements. These are briefly summarized here for those NAAA member aerial applicators who would also qualify as a decision-maker. A complete list of decision-maker requirements is available in the Federal Register notice (www.epa.gov/npdes/pubs/pgp_final_registernotice.pdf) of the final permit, in EPA's fact sheet (www.epa.gov/npdes/pubs/pgp_final_factsheet.pdf) accompanying the permit, or in the PGP on EPA's website (http://cfpub2.epa.gov/npdes/home.cfm?program_id=410).

Not all decision-makers must comply with the extensive requirements described here. EPA's PGP and state PGPs segregate decision-maker responsibilities on the basis of type of decision-making entity and, in some cases, whether they exceed annual treatment area thresholds. Table 1-1 of the PGP describes the annual treatment-area thresholds that separate which decision-makers must submit an NOI and therefore also complete the requirements below. In general, NOIs are required of:

- Any decision-maker with an eligible discharge to a Tier 3 water;
- Any decision-maker with an eligible discharge to waters of the U.S. containing NMFS-listed endangered or threatened species or critical habitat;
- Any decision-maker for which pest management for land resource stewardship is an integral part of their operations; mosquito control districts; irrigation or weed control districts; or similar pest control districts;
- Any local governments or other entities (including private entities) that exceed one or more of the following annual treatment thresholds for the four pesticide use categories: (a) insect adulticide treatment or forest canopy treatment of more than 6,400 acres during a calendar year; or (b) more than either 20 linear miles *or* 80 acres of water (surface area) during a calendar year.

Decision-makers who are not described above need not submit an NOI.

Any decision-makers required by the factors listed above to submit an NOI must also comply with the following additional requirements:

(1) Submission of an NOI: Decision-makers are not automatically covered as are applicators, but are required to apply for coverage under the PGP, and wait for coverage approval (*note: decision-makers who do not meet the conditions identified in the previous paragraph are automatically covered*). Application for PGP coverage involves submitting a Notice of Intent (NOI) to discharge. If required to submit an NOI, decision-makers (and applicators who are also decision-makers) must fill out and submit the NOI a minimum of 10 days before the intended application date (or 30 days before an intended application to waters of the U.S. where listed endangered or threatened species or critical habitat is present).

EPA has delayed until Jan. 12, 2012, the deadline for first NOI submissions to give newly regulated operators time to assemble the needed data. Information required to complete the NOI is provided on the NOI form included in Appendix D (www.epa.gov/npdes/pubs/pgp_appd.pdf). If required to submit an NOI, a decision-maker must submit the NOI once, and submit an updated NOI if the details of the permit coverage change.

The decision-maker must prepare and submit the NOI using EPA's electronic NOI system (www.epa.gov/npdes/pubs/pgp_appd.pdf) unless eNOI is otherwise unavailable or the decision-maker has otherwise gotten a waiver from EPA. EPA will immediately post on the eNOI website all NOIs received. Late NOIs will be accepted, but authorization to discharge will not be retroactive. Coverage will be available for the duration of the five-year PGP for decision-makers who file an NOI, including all employees, contractors, subcontractors, and other agents, unless coverage is terminated by the decision-maker or EPA. Applicators who are not also decision-makers do not need to submit an NOI.

(2) Use of Pest Management Measures: Decision-makers must minimize the discharge of pesticides to waters of the U.S. from the application of pesticides, through the use of Pest Management Measures, just as applicators must. To the extent the decision-maker determines the amount of pesticide or frequency of pesticide application, the decision-maker must only use the amount of pesticide and frequency of pesticide application necessary to control the pest.

Other Pest Management Measures for decision-makers are similar to Integrated Pest Management (IPM) in that they involve: (a) identification of the problem by establishing pest densities to serve as action thresholds for pest control; (b) considering behavior and life stages of each pest; (c) identification of breeding sites for source reduction and habitat management; (d) analysis of surveillance data; and (e) use of other data as appropriate. Pest management options to consider include: (a) no action; (b) prevention; (c) mechanical or physical methods; (d) cultural methods; (e) biological control agents; or (f) pesticides.

If pesticide use is selected as the preferred method to manage the pest(s) and application of the pesticide will result in a discharge to waters of the U.S., decision-makers who must submit an NOI must reduce the impact on the environment and on non-target organisms by applying the pesticide only when the action threshold(s) has been met. There are specific IPM-like requirements for each of the four pesticide use categories for treatment of mosquitoes, weeds, animals and forest canopies.

(3) Pesticide Discharge Management Plans: Any decision-maker who is or will be required to submit an NOI—and is a *large entity*—as defined in Appendix A (www.epa.gov/npdes/pubs/pgp_appa.pdf), must prepare a Pesticide Discharge Management Plan (PDMP) by the time the NOI is filed. Thus, since the first NOI is due by Jan. 12, 2012, the PDMP must be completed by then. (*Note: a PDMP is not required of a decision-maker who is a small entity; a shortened Pesticide Discharge Evaluation Worksheet (PDEW) must be prepared instead and is available on EPA's website at www.epa.gov/npdes/pubs/pgp_appf.pdf*).

The PDMP is very extensive and EPA estimates on average it will take 40 hours to draft and several hours annually to update it. The PDMP documents all preventative maintenance plans, and how decision-makers will implement the Pest Management Measure requirements. It also documents all IPM-like considerations and decisions; spill and adverse incident response procedures; any endangered species or critical habitat considerations; any FIFRA compliance considerations; and the names, contact information and responsibilities of all people on the PDMP team.

When any corrective action is necessary or significant change to the methods the decision-maker uses, the PDMP must be updated to reflect those changes before the next pesticide application that results in a discharge, if practicable, or if not, no later than 90 days after any change in pesticide application activities.

State Pesticide NPDES General Permits

State	General Permit	Activities Allowed?	Annual Thresholds	if Thresholds Exceeded	Timing Before First Discharge	Water Protected	Minimums & Other NPDES Requirements Must Be	First Considerations	Other Considerations	Permit Status
DC	Four categories of pest control: (1) Mosquito & flying insects; (2) Riparian and riparian zone; (3) Riparian zone to water and water's edge; (4) Other category	Yes, generally coverage of future construction was provided	0.001 lbs nitrogen, 0.1 lb water or 100 cubic meters edge (weekly); 20 lb water or 20 cubic meters edge (monthly); 100 lb total (three months)	Submit NOI & permit report during PDMP	No delay for permit coverage or in respect to discharge emergency	Waters of US only, as well as connections with surface hydrologic features or those of discharge	Minimum discharges: Follow EPA's product label and apply or use more than recommended rate; perform maintenance and calibration; perform BMP or control activities; conduct spot checks; monitor water quality; establish, maintain and update; keep maps, logs and copies of monitoring data; report; comply with all applicable rules and regulations	No coverage for discharge to critical body of "Special Stream"	Excludes no discharge into 50 feet of water; "Restrictive definition of 'application'; "Restrictive definition of 'pesticide'; "and "Restrictive" Definition "Source of the CWP" from 40 CFR 122.2	EPA approved Elements compliance plan submitted completed Adopted November 14, 2010 013-001-1000
TX	Four categories of pest control: (1) Mosquito-flying or aquatic insect pests; (2) Riparian vegetation, pathogens or fish parasites control in water and at the water's edge, including lakes, streams, irrigation canals and drainage ditches; (3) Riparian and riparian zone to water and at water's edge; (4) Other category pest control used or present application	Starting the period of April 1, 2011 through April 6, 2012 all operators are automatically covered and do not have to submit any records, with the exception of any operator discharging pesticides to CEMD or preparing discharge for a pesticide use permit other than those listed in section 2. Through automatic only operators they are still required to submit permit applications.	0.001 lbs nitrogen, 0.1 lb water; 100 cubic meters edge (weekly); 20 lb water or 20 cubic meters edge (monthly); 100 lb total (three months)	Large operations exceeding thresholds or CEMD: Discharge water collection: NOI (before or after April 6, 2012) and permit coverage under this permit. NOI, EPA, appropriate enforcement records that operators automatically covered. No PDMP or permit report is required.	Starting the period of April 1, 2011 through April 6, 2012 all operators are automatically covered and there is no other change to CEMD. After 2012, other than automatic coverage that starts on April 14, 2012, before limited application and with the implementation from 6/2012.	Waters of the US, including connections with hydrologic features or those of discharge, with the exception of pesticide application	Minimum discharges: see Texas effective permit details; perform maintenance and calibration; monitor water quality; conduct spot checks for surface hydrologic features; conduct water quality monitoring; report; establish, maintain and update; keep maps, logs and copies of monitoring data; report; comply with all applicable rules and regulations	Automatic coverage with all other federal and state laws and regulations. Do not use covered pesticides. Do not use covered pesticides.	Consent pesticide application used by a decision maker are not considered to be an "application" because they are not used to control or regulate the water quality or to bring water quality up to standards as required by the operator for the proposed application. Discharges to CEMD's will only be considered to occur if surface water quality, as present public health, has the potential to prevent the maintenance of surface water quality, or only discharge water quality via a short-term event - and require specific review approved from 6/2012. See 10/2012.	EPA approved Public comments received Effective Date: 01/01/10 013-001-1000

NAAA is tracking each state's pesticide general permit requirements and has summarized them in a state-by-state comparison chart available on our website at www.agaviation.org/content/state-pesticide-npdes-general-permits. This chart will be updated regularly as new details emerge.

The PDMP must be signed, dated, and retained on site with all supporting maps and documents. The PDMP and all supporting documents must be readily available, upon request, and copies of any of these documents provided, upon request, to EPA; a state or local agency governing discharges or pesticide applications within their respective jurisdictions; and representatives of NMFS or FWS. EPA may provide copies of the PDMP or other information related to the PGP that is in its possession (other than confidential business information) to members of the public.

(4) Other requirements of decision-makers: All decision-makers must also comply with other provisions that are identified in the Federal Register notice of the final permit (www.epa.gov/npdes/pubs/pgp_final_registernotice.pdf); in EPA's fact sheet accompanying the permit (www.epa.gov/npdes/pubs/pgp_final_factsheet.pdf); or in the PGP on EPA's website (http://cfpub2.epa.gov/npdes/home.cfm?program_id=410). These include taking and documenting corrective actions—similar to those required of applicators above, including adverse incident response, documentation and reporting, any adverse incidents to endangered or threatened species or critical habitat, and any reportable spills or leaks. In addition, these also include extensive recordkeeping and annual reporting that greatly exceeds that of applicators. The PDMP and recordkeeping requirements for decision-makers who are also *large entities* is greater than for decision-makers who are *small entities*, as defined in the PGP.

44 States Issuing Their Own PGPs

EPA's PGP (and the ESA requirements in Appendix D) only apply in the six states EPA has direct CWA enforcement authority (Idaho, New Mexico, New Hampshire, Oklahoma, Maine, Alaska). Forty-four other states are developing their own PGPs from EPA's model, although their PGPs vary widely, from very restrictive to minimally restrictive, and are in various stages of implementation. A chart comparing EPA's PGP to that of the other states' PGPs is available on NAAA's website at www.agaviation.org/content/state-pesticide-npdes-general-permits. Some states' permits (e.g., Washington, California) have been in place prior to the 6th Circuit decision, and were updated to include all of EPA's considerations. Most other states, however, have developed new PGPs. They vary widely in the stringency of their requirements, whether applicators and/or decision-makers must submit an NOI, the annual treatment areas that trigger the need for local government and other decision-makers to submit NOIs, and their dates of implementation. About half of the state PGPs are pegged to discharges to waters of the U.S. (like EPA's PGP), but the remainder are pegged to waters of the state—which can be much more broadly defined than waters of the U.S.

Most state PGPs cover the four use categories that EPA's PGP covers, but some state PGPs cover other use categories too (e.g., Texas: "area wide pest control" category; North Carolina and South Carolina: "intrusive vegetation"

pest control category; New Jersey: “aquaculture” “utility transmission,” and “Pinelands” pest control category; Minnesota: “other flying insect” pest control category; and Montana: “other” pest control category). You will need to review the PGP requirements of each state you operate in, and file any documents and keep compliance records separately.

Many of Your Customers are Now Regulated by the PGP

Many decision-making customers of NAAA members are regulated by the PGP, and they will seek your input for their recordkeeping and reports. For example, federal and state agencies with pest control responsibilities; operators of canals and reservoirs; national and state forest and natural resource managers; municipal and regional pest control agencies; mosquito control districts and health departments; utility and transportation rights-of-way managers; private forest and rangeland owners and managers; national and state park managers; commercial pest control businesses; owners and managers of farms and ranches with irrigation ditches and canals; homeowner associations and other entities that apply pesticides to waters or what could be defined as “waters” (e.g., rivers, lakes, wetlands and their tributaries, as well as canals, ditches, dry washes and ephemeral streams, or other upland areas that may be occasionally wet). EPA has indicated all operators (applicators and decision-makers) will be jointly and severally responsible for any permit violations. Because of this you will likely see changes in your pesticide-treatment contracts soon, as decision-makers realize their PGP requirements and potential liabilities.

Sources of Legal Jeopardy

Just as you have compliance requirements, you will have legal jeopardy if you fail to perform these PGP requirements in the correct manner or by the deadlines for them indicated in the PGP. These are some of the potential sources of legal jeopardy you should be on the lookout for:

- **Failure to realize you may be a decision-maker:** It will be wise to carefully evaluate each of your contracts going forward to determine if you are an applicator or in fact, also a decision-maker. The added responsibilities and potential jeopardy of also being a decision-maker could affect some applicators’ willingness to accept some contracts. Also, if you defer from the contract with the client in any way, or if the contract with the client gives you authority to make decisions, such as choose a pesticide, determine buffer zones, etc., this may place you in the decision-maker

category and make you responsible for the additional extensive requirements that must be met;

- **Failure to be covered by the PGP:** There are some exceptions to automatic PGP coverage for applicators (e.g., to water quality impaired waters, Tier 3 waters, or discharges that are likely to adversely affect species that are federally listed as endangered or threatened, or habitat that is federally listed as critical). It will be wise to carefully evaluate each of your contracts going forward to determine if your intended treatment area(s) include the possibility of any such disqualifying treatments.

If you are both an applicator and a decision-maker, the ways in which you may not be covered by the PGP are even greater (e.g., failure to submit an NOI, failure to have your NOI accepted). Again, the added responsibilities and potential jeopardy of also being a decision-maker could affect some applicators’ willingness to accept some contracts;

- **Failure to recognize a “water of the U.S.” or “water of the state”:** Permit coverage is not needed if no discharge occurs to jurisdictional waters. However, not all jurisdictional “waters” are easily recognized because they are not wet when pesticides are applied—and a discharge to such an unrecognized jurisdictional water without PGP coverage could trigger legal jeopardy. Such unrecognized jurisdictional waters also include unrecognized critical habitat for endangered or threatened species.

If you are an applicator, you are automatically covered by the PGP for such unintended discharges if you comply with all other requirements of your PGP. But if you are also a decision-maker and have not submitted

It’s an NPDES PGP World Now Keep Up with the Latest Developments on AgAviation.org and in the NAAA eNewsletter

If you are an NAAA member and have not been receiving NAAA’s eNewsletter, the Association may not have a valid email address on file for you or your business. Please contact the NAAA office at (202) 546-5722 to ensure you don’t miss out on breaking news and important updates about the new NPDES pesticide general permit requirements communicated in the NAAA eNewsletter. There’s one caveat: NAAA can only maintain one email address per membership account. As an alternative, back issues of NAAA’s eNewsletters are indexed in the members-only area of the “News & Publications” section of NAAA’s website, www.agaviation.org.

an NOI for the areas of those unintended discharges to unrecognized jurisdictional waters, you would be in violation of the CWA. Such potential violations and penalties could stack up from the date of such an unintended discharge for any failure to also complete the other PGP requirements that would be tied to the requirement to submit an NOI, such as development of a PDMP, IPM-like decisions and recordkeeping, at a rate of up to \$37,500 per day per violation, extending from the date of application of the pesticide.

- **Failure to be fully aware of each state's PGP requirements:** The permits of the 44 states that have or are developing their own PGPs can vary significantly from EPA's PGP and from each other. If you are spraying pesticides for different customers in various states, you must be fully compliant with each state's PGP requirements. These PGPs vary widely, and some require NOIs from both applicators and decision-makers. The annual treatment area threshold also may vary extremely among states.

It is expected that there will be a significant number of paperwork and practice violations, especially in the first year, as operators get acquainted with the PGPs. It will be wise to fully evaluate (or have your attorney evaluate) the various compliance requirements of each state you operate in, create compliance checklists, train your other pilots and staff, and keep compliance records separately for each state.

- **Citizen suits:** The CWA authorizes citizens and activist groups to sue pesticide applicators and decision-makers for apparent violations. The sight of an aerial application of pesticides has been known to trigger second-guessing on the part of such individuals or groups, who may file lawsuits without full knowledge of the compliance situation. Even if you are in full compliance you might be sued, and defending against citizen suits is time consuming, disruptive to your business, emotionally upsetting and

costly. The more carefully you use best professional practices, document your PGP compliance and maintain accurate and timely records, the better off you will likely be. It will also be wise to evaluate your insurance policies in light of the many new requirements and potential legal liability.

- **Joint and several liability:** EPA's PGP states applicators and decision-makers will be jointly and severally liable for any permit violation that may occur, but will take into account in its enforcement actions any differentiation of responsibilities incorporated into executed performance contracts. It will be wise to carefully evaluate each of your contracts going forward to delineate who is the decision-maker and applicator, and their respective responsibilities.
- **Certification of 'no adverse effects' on listed species or habitat:** Decision-makers submitting NOIs for intended discharges to critical habitat or waters that contain listed endangered or threatened species must certify in Appendix D (www.epa.gov/npdes/pubs/pgp_appd.pdf) that their proposed treatments will not have such adverse effects and document that through selection of one of six options. This certification is under penalty of the law, and adverse effects on such species or habitat can be a violation of not only the PGP and CWA, but potentially also of the Endangered Species Act.
- **Federal government expansion of "U.S. waters":** The ongoing effort by EPA and the U.S. Army Corps of Engineers to expand the definition of "U.S. waters" under the scope of the Clean Water Act could also potentially draw more users of agricultural pesticides under the NPDES umbrella. EPA has said it will continue to pursue such guidance and there is concern that farm ditches and ponds could fall under the scope of the law.

Congressional Action

To date all legal and legislative efforts to overturn the 6th Circuit decision, delay EPA's PGP or exempt aquatic pesticide applications from CWA requirements have been unsuccessful, including *cert* petitions to the U.S. Supreme Court to review the court's decision.

Congress has been actively involved: GOP leadership in the House of Representatives passed H.R. 872 with the backing of 57 Democrats and two-thirds of the Congress. That bill would have undone the 6th Circuit's decision. H.R. 872 was also passed by the Senate Agriculture Committee and has the support of more than 60 Senate offices, but has been blocked from floor action leading to passage by holds placed by Sen.

The CWA authorizes citizens and activist groups to sue pesticide applicators and decision-makers for apparent violations. . . .



The more carefully you use best professional practices, document your PGP compliance and maintain accurate and timely records, the better off you will likely be.



SPEAKER TO THE HOUSE Colorado aerial applicator Leonard Felix testified before the House of Representatives, Small Business Committee, Subcommittee on Agriculture, Energy and Trade in November about the impact of the newly enacted NPDES permits. He owns Olathe Spray Service Inc. in Olathe, Colo., and was speaking on behalf of NAAA. His testimony highlighted that while long hours and risks are expected in the aerial application profession, the burdens and risks associated with the NPDES permits are not something the industry needs or wants. Felix offered a solution to the significant impacts caused by EPA's NPDES permits: enactment of legislation (H.R. 872) that would not require NPDES permits for mosquito, forestry and other pesticide applications made over or near water due to FIFRA's environmental protections in these areas.

Boxer (D-CA), the powerful chair of the Senate Environment and Public Works Committee, and Sen. Cardin (D-MD). Despite wide Senate support for a floor vote on H.R. 872, Senate Majority Leader Reid (D-NV) has refused to take up the bill—not wanting to overturn Sen. Boxer's hold. Recently, however, he has signaled that a two-year moratorium of EPA's PGP might be an acceptable alternative. Negotiations are underway behind the scenes to find legislative language that satisfies both Democrats and Republicans.

The issue remains viable and most recently a hearing was held to further explore the impacts of the NPDES PGP on small businesses. Speaking on behalf of NAAA, Colorado Aerial Applicator Leonard Felix testified on Nov. 17 before the House of Representatives, Small Business Committee, Subcommittee on Agriculture, Energy and Trade on the topic of new regulatory burdens and the potential regulations they place on family farmers. In addition, there have also been unsuccessful efforts to attach H.R. 872 or its language as an amendment in some of the many appropriations bills Congress must consider.

While none of these actions have succeeded to date, they do continue to bring to light the absolute necessity for a legislative solution to this burdensome and duplicative NPDES pesticide general permit. In the meantime, EPA's PGP is now the law of the land.

Going Forward

There is a lot yet to be determined about EPA's PGP and the 44 other state PGPs. Many of the most subtle nuances may be revealed in EPA's recently published 3,000-page response to public comments, or additional EPA announcements on its website (http://cfpub2.epa.gov/npdes/home.cfm?program_id=410). For example, EPA has not concluded consultation with the U.S. Fish & Wildlife Service, and any additional requirements that may result from that Endangered Species Act consultation could be incorporated at a later date. Hopefully, Congress will complete work on exempting legislation or a moratorium.

NAAA will continue to work to keep you informed and continue work within a coalition of agricultural organizations for a legislative exemption from Clean Water Act NPDES permits. Absent a Congressional fix, aerial applicators should be aware that they must immediately undertake efforts to comply with the EPA PGP or state PGPs in the states where they do business, and may be subject to enforcement and/or citizen action suits should they violate either the recordkeeping or performance aspects of the PGP.

NAAA has been actively involved in this issue with the EPA for years and has provided numerous documents and held multiple meetings with the EPA expressing our concerns about co-permitting of decision-making agencies and for-hire applicators, likely impacts of burdens and costs to the small businesses that make up NAAA membership, the need to enlarge EPA's annual treatment thresholds, etc. EPA's first draft of the permit required non-decision-making applicators to file NOIs if treating more than 640 acres, now non-decision-making applicators do not need to file NOIs. Many of NAAA's recommendations have been incorporated into this final version of EPA's PGP.

NAAA will continue to stay abreast of the many complexities of the newly enacted NPDES PGP and encourages members to check the NAAA website and read the eNewsletters for updates as they become available. ■

Dr. John Thorne is Senior Policy Advisor for Crowell & Moring LLP, a D.C.-based international law firm. He represents clients, including NAAA, on both political and technical aspects of a wide range of regulatory and legislative issues related to agriculture, agribusiness, food processing and the environment before EPA, USDA and Congress. Much of his expertise is related to water and air quality policy related to crop protection, fertilizer use and livestock production, but he has also represented clients on homeland security matters, tariff reduction and appropriations legislation.



Destined for Flight

Arkansas' Mark Hartz Ascends to New Heights as 2012 NAAA President

By Danna Kelemen, Manager of Government and Public Relations

For most any pilot, and aerial applicators in particular, the lure of the outdoors and wide open spaces is enough to hook someone on aviation, but sometimes it's almost as if certain individuals were destined to fly. For 2012 NAAA President Mark Hartz this seems to hold especially true, as the first memory he can recollect as a young boy growing up in East Central Arkansas is that of an ag plane buzzing by his window. Raised on a rice and soybean farm, Hartz vividly recalls being enamored watching airplanes of any kind, and especially the open-cockpit ag-cats that sprayed his family's crops. It's no surprise he caught the flying bug early and eventually turned that passion into a lifetime's work.

Anyone who knows Hartz will vouch for him being quick with a smile and a joke, but more importantly, someone who is immensely respected and admired in the aerial application industry. According to Lee Turnquist,

who participated in the NAAA Leadership Training Course alongside Hartz in 1998, Hartz's reputation is not surprising. Turnquist said Hartz displayed leadership qualities early on and is known as an individual who follows a project through to the very end. According to Turnquist, a current PAASS presenter and retired Floridian aerial applicator, "Mark is a take-charge kind of guy, but he's also always willing to help others and that's not something you see in everybody."

Hartz and his business partner, Scott Goetz, have owned and operated Grand Prairie Dusters Inc. in Almyra, Ark., for 23 years and it's a partnership that has obviously worked well for them both. Hartz said there can certainly be differences of opinions, but it's nice having someone else to share the burdens with. He stated they both have their strengths in different areas and that has contributed to their successful business relationship throughout the years.

Goetz vouches for Hartz's sincerity and said he is not only a genuine person but also a sharp and savvy businessman. "Mark has done a lot of good things for the state of Arkansas," said Goetz. "Certain people are cut out for leadership roles and he was destined for this sort of thing. I'm really proud of his accomplishments and know he'll do a great job as NAAA President."

In addition to their aerial application business, Hartz and Goetz also manage the Almyra Airport which they lease from the city. The facility is in the Airport Improvement Program so it receives federal monies to finance improvements at the airport. Thus the business partners not only oversee and monitor construction projects but also ensure the facilities are kept up and operational. Hartz said it is a vital airport for the community because when weather sets in and grass strips are too wet to use, a number of other ag operations use the Almyra Airport to operate from. The airport can be extremely busy and it's not uncommon for three to five ag operators to use the facility during the growing season. Thanks to Hartz and Goetz's diligence and hard work, the airport has been recognized by the State Department of Aeronautics for its well-kept facilities.

Agricultural roots run deep in Hartz's family. Not only was he raised on a farm, his grandfather, Jacob Hartz Sr., helped introduce soybeans to the Southeastern part of the United States. After earning a degree in agronomy from the University of Arkansas Hartz set out to earn his living flying.

Hartz credits his father for being his biggest supporter once he decided to become a pilot. In fact, it was his father who helped him get his license—with the only caveat being he would not be a crop duster. Hartz recalls his father was not initially happy about his profession of choice, but eventually



Hartz and his business partner Scott Goetz have owned and operated Grand Prairie Dusters together for 23 years.

came to embrace it and was instrumental in helping him get his first job as a crop duster. "We self-insured that first year so it was a big leap of faith on his part," said Hartz. "But once I started doing it, my dad was my biggest fan and he was the inaugural passenger in my first airplane with two seats."

Hartz said the diversity in ag aviation is what has kept him passionate about the industry for so long. He said he enjoys the time spent outside, but it's not doing the same thing every day and the variety of the business that keeps him going. "Like most pilots, I'm a Type A personality and aerial application keeps me engaged and challenged mentally," Hartz said. He likes that the job can change from one day to the next—whether it be staving off disaster or being instrumental in the growth of a crop.

.....
"Certain people are cut out for leadership roles and he was destined for this sort of thing. I'm really proud of his accomplishments and know he'll do a great job as NAAA President."
.....

—Scott Goetz, Hartz's business partner and co-owner of Grand Prairie Dusters Inc.

.....
Hartz said he does have concerns for the future of ag aviation, but they're mainly rooted in governmental regulations and public perception. He believes aerial applicators will be needed as long as there is agriculture, as there's no way to cover the ground ag aviation does in such a timely fashion. "It can truly be an aerial ballet and a remarkable thing to see," said Hartz. "However, not everybody sees us in that light."

While there are a number of issues that have the potential of significantly affecting the industry, Hartz believes the NPDES permits are most troublesome. But he says he feels confident NAAA, working with its national agricultural organization allies, has the appropriate staff and resources to adequately defend agricultural aviation.

He believes farmers will continue to need the services of aerial application, but says the profession is difficult to break into. "It's a hard business to get into, but rightly so, because you just don't want anybody to casually drift into this business," said Hartz. "You have to have the proper mindset for it and be willing to invest a significant amount of time

in the business if you expect to get something out of it.” Hartz stated you have to have fortitude to be in the business because it can take a toll on your family and cautions that if someone is in it just for the money, it’s for the wrong reason.

“I really can’t think of anything else I’d rather be doing,” said Hartz. “There’s a lot of hard work involved, but also a lot of freedom you wouldn’t get in any other business. It’s definitely a good mix of things.”

Hartz strongly supports the efforts of NAAA and believes without the Association the industry would be severely diminished. He should know, as his term this year as president marks his third officer role at the national level. He served as treasurer in 2001 and vice president in 2011 before succeeding to president in 2012. “Being a member of the NAAA is a prime example of getting the most value for your money,” Hartz said.

He advocates that the Association is fighting for the concerns of ag aviation every day and in his mind, aerial applicators should support NAAA by being a member. Even those applicators who are not members derive a number of benefits as a result of NAAA’s successes at the federal level, he said, and he would encourage everyone to not just get involved, but to serve as a Board or Committee member as well. Hartz said one of the most rewarding experiences an NAAA member can have is to be of service to the industry. “It’s an education to see exactly what NAAA does and how much time is involved. And some of my greatest friends on Earth come from my association with the NAAA,” Hartz said.

“Mark is very involved with what goes on at the state and national level,” said friend and NAAA Operator Brenda Watts. “Applicators have a lot of respect for him; he thinks before he speaks and offers sage advice.” Watts credits Hartz for being the reason she got involved with the NAAA Board of Directors.

Hartz said his previous tenure as an officer allowed him to watch the Board of Directors transform into a cohesive and effective governing body. He finds it gratifying to see such a large group of people work together united for a common cause and says it’s heartening to see. Additionally, he said, “I’m absolutely amazed at what gets done by the NAAA staff. NAAA has been blessed to have a great staff in place that has carried us to the point we are today. Unfortunately, several of our most senior staff members will eventually retire and we have to consider the future.”

Hartz believes the pending purchase of a new NAAA building is a step in the right direction and will enable the Association to grow and house additional staff as needed. “With a new office it will enable us to grow the Association and allow potential new hires to benefit from the invaluable

knowledge and experience we already have in place. I know how overloaded the staff we have is at the current time and we need to look to the future to ensure our staffing meets the needs of all that we’re trying to do.” He said it’s a fortuitous time for the Association that we have the resources available to make acquiring a new office a reality.

Hartz’s compassion and willingness to help fellow operators are just two of many attributes that many members said will make him a great NAAA President for 2012. NAAA Operator and fellow Arkansan Dennie Stokes said Hartz is known as the “go-to guy” in the state. “He’s always concerned about ag aviation and looks to help others with their problems and not strictly his own,” said Stokes. “I’ve known him for close to 30 years and he truly has community at heart; he not only talks the talk, he walks the walk.”

NAAA Executive Director Andrew Moore echoed that sentiment. “Not only does Mark have a fair and analytical thought process to make the best decisions, but he is also articulate and well organized. This will serve NAAA well with Mark planning future Association endeavors, and communicating before the media and policymakers. We will be well-served this year with Mark in control of the stick.”

Hartz has two grown children, Abby and Patrick. In addition to previously serving as vice president and treasurer for the NAAA Board of Directors, he also served as the Arkansas State President and remains very active in the ag museum for the state of Arkansas. Hartz has been an aviation safety counselor for FAAST since 1999 and in 2011 won the prestigious Regional FAAST Team Award.

When asked about the upcoming year with NAAA, Hartz remarked, “I’m deeply humbled and honored to be asked to serve. It’s my intention to do the very best job that I can and I’m really looking forward to it.” ■



FLASHBACK Hartz and NAAA’s Andrew Moore in Grand Prairie Dusters’ two-seater Thrush. Archeologists have deemed this picture was taken circa 2000.



2012 NAAA Officer Spotlight



Promoting a Positive Image

Leif Isaacson, NAAA Vice President

Desert Air Ag, Terreton, Idaho

Describe your background and how you got started in the aerial application industry.

I grew up in the middle of the desert in the little town of Blythe, Calif. I was always fascinated by the crop dusters in the fields around my house so I would hang around the airport and do whatever they would let me do to help. Once I started flying at the age of 14, having grown up seeing the crop dusters and knowing some of them personally, that pretty much set the hook and I knew this is what I wanted to do. My father was a mortician and since we were in a pretty remote part of the state I would log flight hours by transporting bodies.

I went to an ag flight school in California, earned my commercial license and then finished up my part 137. After I finished school I got a job in Idaho and worked there for 15 years. In 1986 a friend was retiring so I bought his business in Terreton and have been here ever since. I've been a certified flight instructor for 29 years and I'm rated in fixed and rotary wing aircraft, gliders and seaplanes.

Describe your passion for agricultural aviation.

I'm a people person; I like working with farmers and enjoy the freedom of flying itself. I've loved the profession from the very beginning—I literally couldn't wait for the season to get started. I'm a PAASS presenter and one thing I've

learned about aerial applicators is that very few would change their profession. I truly enjoy what I do and for the most part I'd say that is true for 99% of ag pilots.

How do you see the future of the industry and what concerns you?

Over the years I've watched the industry go from using flaggers to paper flags to GPS and flow control so I guess it shows the sky's the limit with technology. But no matter how good the equipment is if the pilot in the cockpit doesn't have the right "feel" then the application won't get done as well. I've heard other ag pilots say that our profession is a form of science, technology and artistry, and they're exactly right. You really need to have all three working in harmony.

Our two biggest hurdles center on regulations and public relations. I believe regulations are a result of bad behavior—not just in aerial application, but in any industry. We need to do a better job with public relations so in turn we have fewer regulations on the industry as whole. As a pilot, it used to be that when you were flying and you saw someone on the ground pull over to watch you, it gave you a sense of pride. But today, with cell phone cameras, you're better off coming back again later to treat a field when no one is around. It's a small percentage of the public who mean to do us harm, but they're out there nonetheless. The solution is we must do a better job of public relations—we have to get out in front and make the industry better by publicizing all the positives.

Why would you encourage individuals to belong to NAAA and what benefits do you believe are derived from membership?

I've been involved with NAAA for quite some time now and a PAASS presenter for the past five years, and from

the outside looking in it's hard to see everything happening behind the scenes. Anyone who is active at the national level understands, but it's hard to convey that to those individuals who are not members of the NAAA.

I really enjoy mentoring young pilots and steering them into the aviation industry. The very first thing I tell someone I'm mentoring is that they need to join NAAA. I really believe it's imperative for the support of the industry. Until you're a member it's hard to make others understand the value of the NAAA—from the public relations perspective to the tax benefits and everything else in between.

What would you say to others contemplating getting involved and volunteering their time with the NAAA Board?

I would definitely encourage others to get involved, but people need to understand that as an NAAA member they can attend meetings and give their input, even if they're not a director on the Board. However, once individuals do serve on the Board of Directors, they tend to stay.

The main reason I'm involved is because of the PAASS Program—I'm really passionate about it. There aren't any statistics that point to PAASS presentations directly saving a certain number of lives, but I'm a firm believer there are a number of ag pilots alive today because of something that's been said during the PAASS Program. And I think every PAASS presenter feels the same way; we wouldn't do it unless we felt we were doing some good.

- Also NAAREF Vice President for 2011 and 2012
- PAASS presenter since 2006
- Started flying at 14, soloed at 16, earned private pilot's license at 17
- Been in aerial application for 37 years
- Uses 4 Turbine Air Tractors for ag work, 1 helicopter for non-ag work (county and sheriff work)
- Chief crops: potatoes, wheat, barley, and alfalfa

What do you hope to gain through your service on the NAAA Board and do you have any goals while in office?

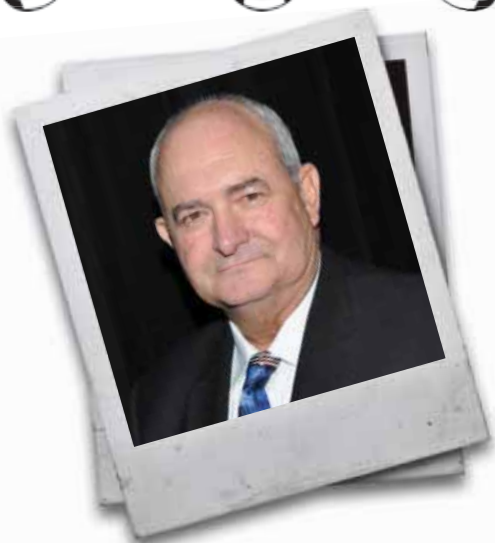
I don't really have any specific goals, other than to help the incoming president of NAAA. People have no idea how hard NAAA presidents work, and by serving as an officer I hope I'm able to give back in some small way and help the industry.

—D.K.

"We need to do a better job with public relations so in turn we have fewer regulations on the industry as whole."



2012 NAAA Officer Spotlight



in it for the long haul

Gaylon Stamps, NAAA Secretary

Stamps Spraying Service, Panhandle, Texas

Describe your background and how you got started in the aerial application industry.

My father started Stamps Spraying Service in 1963 so I grew up pretty much wanting to follow in his footsteps. He planned for me to take over the business, although my mother wasn't thrilled with the idea of me being a crop duster in the beginning.

Describe your passion for agricultural aviation.

I like to fly and the best part about this business is that it's a win-win for the farmer and the ag pilot. It's provided a good living for my family and it's an interesting profession; there's always something new every day.

How do you see the future of the industry and what concerns you?

There will always be a need for aerial application, but fewer airplanes mean fewer pilots. With the equipment getting bigger and more expensive, it's becoming more and more difficult to get into the business. So those who are in the industry are in it for the long haul.

NAAA and the state associations are very important to the industry, and the work they've done in terms of helping us avoid big taxes on fuels, the loss of use of certain products and other things is crucial to the success of ag aviation.

As far as a particular issue, there's certainly the NPDES permit, but even more troubling to me is the LightSquared issue and its impact on GPS. This goes back to safety and the necessity for it in our industry.

Why would you encourage individuals to belong to NAAA and what benefits do you believe are derived from membership?

We cannot, as individuals, sit back and wait for things to happen. We have to be proactive, not reactive. Too many people are satisfied with what's just given to them and in this industry we can't be. That's why it's so important to belong and be a member of NAAA.

To begin with, membership in the national association and your state association allows you representation in Washington and the places that make decisions that affect your life. And secondly, I certainly could not have done what I've done in my own business without the networking afforded to me through NAAA membership. What

- PAASS presenter since 2006
- Started flying at age 15
- Earned private pilot's license at age 19
- Been in the aerial application business since 1975
- Flies a Cessna at home, but for past four years has been a "hired gun" flying for other operators.
- Licensed and flown in Texas, New Mexico, Wyoming, Iowa
- Chief crops: Wheat, milo, corn, rangeland and cotton

NAAA and the state associations do is for the benefit of ag operators and everyone reaps the benefit of their hard work.

What would you say to others contemplating getting involved and volunteering their time with the NAAA Board?

I would absolutely encourage it. Get involved, be patient, keep your ears open and if you find a place where you're passionate about an issue, speak up. But I would definitely say find out how it works first and then find a place to get involved. I've been very involved with NAAREF as well, especially as a PAASS presenter, and it's something I think is very important.

Being a PAASS presenter is probably the most important thing to me. If I had to give up everything else, PAASS is what I'm most passionate about and wouldn't sacrifice. I really enjoy it and putting my experience to work. The biggest benefit I think pilots can gain from PAASS is what the program makes you *think* about. What I always say, time and time again in my presentations, is it's not *what* we say as presenters or what's on the slides that's important, it's what we make people *think* about.

What do you hope to gain through your service on the NAAA Board and do you have any goals while in office?

I don't necessarily hope to gain anything, but I do expect the opportunity to see how NAAA works at the top—from a federal level.

—D.K.

"With the equipment getting bigger and more expensive, it's becoming more and more difficult to get into the business. So those who are in the industry are in it for the long haul."



a vocation for aviation

Kyle Scott, NAAA Treasurer

Scott Aviation Inc., Fort Morgan, Colo.

conducive to spraying crops anyway. Besides, my dad owned a charter bus service and I always say if I wanted to transport people I would've gone to work for him.

How do you see the future of the industry and what concerns you?

I know a concern of the NAAA is always attracting new and young pilots, but I feel if there's a demand for ag pilots people will step up. There's always a wash-out rate so you definitely have to plan for that. But I think the industry is attractive to many because of the romantic nature of being a pilot.

I am worried we could potentially be regulated out of the business. The extensive buffer zones they have in Europe worry me as well as the big problems we have here with towers. I'm not against wind energy, but it's ridiculous to want to develop wind energy on the most fertile farming ground we have in the Midwest.

Why would you encourage individuals to belong to NAAA and what benefits do you believe are derived from membership?

The biggest thing membership in the NAAA does is afford representation to you—it gives you someone to keep an eye on what's going on in Washington at the federal level. Membership also provides a great networking tool. It's invaluable to have access to operators all across the country. For what membership in the NAAA costs you, you get a return that's 100-fold.

What would you say to others contemplating getting involved and volunteering their time with the NAAA Board?

You really have no idea the stuff going on at the national level until you get involved. It's easy to get wrapped up in

Describe your background and how you got started in the aerial application industry.

I'd really never thought about being a crop duster or considered aerial application until my senior year in high school. I was involved in FFA and my FFA advisor gave us a questionnaire about our career aspirations, and one of the questions was, "If you could do anything, what would it be?" Well, I wrote down I wanted to be a fighter pilot, even though I knew that wasn't a reality since I am partially color blind.

After my advisor looked over my questionnaire he asked me if I'd ever thought about crop dusting. I hadn't so I went out to the airport in Olivia, Minn., where I grew up and visited with Dale Hardy. As soon as I sat down in his Air Tractor 301 I just knew this is what I wanted to do.

I started taking flying lessons in high school and attended the University of Minnesota at Crookston, which is known for being "the place to go" if you want to be an ag pilot. I got my start working in the summers for Emerald Helicopters and after graduation flew for a Crookston area farmer in a 235 Pawnee. It really wasn't until I moved to Morris, Minn., and started working for Ken Peterson that I found a true mentor and really learned about aerial spraying.

Describe your passion for agricultural aviation.

Ag aviation is what I consider to be "real flying." I don't mean that as a slight to commercial pilots or anything, I just like the fact that ag aviation is "hands on" and you're not pushed into flying in really bad weather, as that's not

- Started flying in high school at age 17, earned private pilot's license at age 18
- Been in the aerial application business for 22 years; flying since 1992
- Aircraft flown: Air Tractor 402A, -1 Garret Thrush, G10 Thrush, 620B Weatherly
- States flown in: Colorado, Wyoming, Nebraska and a partnership in Iowa
- Chief crops: wheat, corn, alfalfa, onions, sugar beets, sunflowers, edible beans, potatoes in Colorado and surrounding and corn and soybeans in Iowa

our own local world, but I think it's part of our duty to the industry to get involved. I would definitely encourage others to volunteer their time with the NAAA Board. Being on the Board also gives you more opportunities to network. You wind up becoming fast friends with people you might only see two or three times a year.

What do you hope to gain through your service on the NAAA Board and do you have any goals while in office?

At first I was a little reluctant to serve as an officer because of the time commitment, but it's an honor to be asked and I'm excited about the officer team and the opportunity to serve. I've always advocated we need to have a strong "war chest" for the Association because everything costs money—from fighting unnecessary regulations to providing public education about the industry. As the treasurer I would like to see the Association continue to grow our money. At any point in time something could arise that would require us to fight for our industry and we need to be able to have the cash reserves on hand to do so.

We've got a good mix; a great bunch of guys serving as officers this year and I'm looking forward to working with them. As far as goals, I hope we can have a positive impact and continue with the great tradition and past successes of the NAAA.

—D.K.

"For what membership in NAAA costs you, you get a return that's 100-fold."

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Here's the Diehl

By Danna Kelemen
Manager of Government and Public Relations

Increasing Membership and Education Top New WNAAA President's Agenda

As a banker by trade, 2012 WNAAA President Kathy Diehl knows a thing or two about values. Having been married to an ag pilot for 20 years, Diehl understands the value of hard work and attention to detail, especially in the aerial application industry. As an executive for a local ag bank in Garden City, Kan., she also knows first-hand the value of money and its role in society. Equally important, she also appreciates the value of image perception and the necessity of advocating for the ag aviation industry through membership in NAAA and the WNAAA.

Diehl said she believes it's important for the WNAAA to educate the general public about the aerial application industry. "Education is integral to helping promote the value and image of NAAA," Diehl said.

She strongly believes the WNAAA and NAAA should complement one another. "I really think we need to work on showing the value of NAAA to people, and increasing membership and education are two goals of mine for this year," said Diehl. "Sometimes people just see what it costs them and not the value; I feel strongly about the value of membership in the organization." Diehl and her family also have something at stake: her husband Donnie is an ag

pilot who works for Chanay Aircraft Service Inc. in Kansas and Tri-County Ag in South Dakota. Donnie has been a professional ag pilot since the mid-1980s.

Diehl said being involved in the WNAAA is very rewarding. However, she doesn't believe you need to be an officer to make a difference. "No matter our role, I feel it's our responsibility to actively participate in the industry," Diehl stated. "I believe it helps others to share experiences and it's certainly enabled me to learn a lot of things myself that I otherwise would not be aware of." She said she has taken something away from each Athena program she has attended as well as learned something from each board meeting she attends. "The reason I have stayed involved in this group is because of the benefits to the women in this industry—the sharing of experiences and the friendships."

Diehl is known as someone who doesn't hesitate to get involved herself. Former WNAAA President Jane Barber said, "For someone who was thrown into the industry without a background in ag aviation, Kathy's done a great job of seeing how all the cogs fit together." Barber said Diehl will make a great leader for the organization because she doesn't let anything bother her and has a great sense of humor as well.

When asked about her upcoming year as president, Diehl said she initially questioned if she had what the organization needed. "But when I really thought about it, I realized we all face the same issues and same types of problems," said Diehl. "Whether it's in banking or aerial application, we both have regulations and other similar obstacles and I think I can help. I see great things for this organization down the road and I'm excited for the future."

Diehl began her involvement in the WNAAA in earnest in 2010 when she was elected treasurer. In 2011 she was elected as vice president, so it's been a natural progression for her to succeed to the presidency for 2012. Prior to her time in office at the national level, she served as a director for the Kansas AAA. She also recently became an Athena presenter for WNAAA and is the current treasurer for the Kansas Agricultural Aviation Association.

According to KAAA and WNAAA member Judy Chanay, a fellow Garden City, Kan., resident, Diehl's involvement is not surprising. "Kathy is very involved locally in Garden City," said Chanay. "She's very experienced in interacting

Kathy Diehl, 2012 WNAAA President



with the public; I know she'll do a great job as WNAAA President and be an asset to the organization."

Diehl grew up being involved in 4-H in Colorado, and originally intended to pursue a career as a veterinarian. Her plans changed and she ended up following in her mother's footsteps and pursuing banking instead. She is currently the vice president and branch manager of American State Bank and Trust in Garden City, Kan. She is a Chamber ambassador for her local Chamber of Commerce and has served as a board of director for the past three years. In

addition, she also was a board member for her local United Way Board for six years, serving as president her last year. For the past three years she has presented a national educational program, "Teach Children to Save Day," to local third graders about saving money.

Diehl and her husband Donnie have three grown children and two grandchildren. They enjoy spending time with their grandchildren, and love to travel, scuba dive and ride their Harley Davidson motorcycle. Donnie is a licensed applicator in Kansas, South Dakota, Iowa and Texas. ■

"For someone who was thrown into the industry without a background in ag aviation, Kathy's done a great job of seeing how all the cogs fit together."

—Former WNAAA President Jane Barber, with whom Diehl served as treasurer when Barber was president in 2010

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Not One to Just Sit on the Sidelines

As a young wife, many women struggle with their role and the expectations placed upon them. For those who marry an ag pilot, the adjustment can be hard, especially during the application season when their spouses are scarcely seen outside the cockpit. WNAAA's 2012 Secretary Pat Stamps said the ag aviation lifestyle definitely took some getting used to on her part. Married to Gaylon Stamps for 44 years now, the industry and lifestyle are old hat for this Carlsbad, N.M., native, but this was not always the case.

While the main objective of the WNAAA is to promote the positive image of the aerial application industry, Pat said it can also help fill the void young wives often have during the "busy time of year" and give them someone to talk to who understands the lifestyle. She decided to get involved in the WNAAA partly because Gaylon was enjoying his affiliation with NAAA and the state associations so much, partly because she found herself with a little extra time on her hands and partly because she was traveling with Gaylon anyway and wasn't the type to just sit on the sidelines and observe.

"Gaylon would volunteer me to help with things and I didn't mind that," Pat said. "I'm not one to just sit, I'd much rather be doing. And being involved gives you a bond—you're not the only one experiencing a certain problem. It's something I wish I would've known when I was younger."

Pat finds being involved in the WNAAA keeps her updated on what's going on and has definitely been good for their spraying business from a networking perspective. Over the years Pat has filled in at the hangar wherever needed—from secretary, to cook, to babysitter; although she says children and cooking are more her forte. This is no surprise, as Pat and Gaylon have served as foster parents to more than 90 children, in addition to raising five children of their own. Pat embodies a servant's heart, and in addition to helping raise foster children in the past, she continues to serve as a substitute assistant for special education in her local school district.

Pat's involvement in the WNAAA has been impactful for the time she has devoted to the organization thus far. In 2011 she served as secretary and prior to that she served on the scholarship committee. Pat was recognized for her outstanding contributions to her community in 2007 and

Pat Stamps, 2012 WNAAA Vice President



received the Larsen-Miller Community Service Award. She said she hopes to grow closer with her friends in the WNAAA this year and work to continue the team efforts of the WNAAA and the NAAA. Pat praises the Athena program for helping spouses understand how to deal with their pilot-husbands and again, for providing a network of like-minded individuals to share with.

Stamps Spraying Service remains a family-operated business with the newest generation now on board. Son-in-law Jason Davis flies for the business and Pat and Gaylon's daughter, Carissa, handles the company's bookkeeping. Pat said, "We're happy to have them in the business; it's been a blessing."

Pat and Gaylon have five children, 15 grandchildren and a life filled with helping others and the aerial application industry. Pat said the lifestyle suits them well and "no matter where we go, there are always people we know as a result of our affiliation with NAAA and the WNAAA." —D.K.

Love at First Flight

Whether it's showcasing North Carolinian wines for the ladies of the WNAAA at the 2011 Fall Board Meeting in Greensboro, running a successful retail business or being the all-encompassing office manager for Craft Air Services, Leslie Craft's enthusiasm is contagious. The 2012 WNAAA Secretary has more than a few "irons in the fire," yet she is consistently upbeat and strives to promote whatever endeavors she undertakes in a positive manner. Her latest goal: fulfill her office in the WNAAA to the best of her ability and promote ag aviation in an environmentally friendly light.

As a Hertford, N.C., native, Leslie grew up as a local ag girl whose father was a farmer in the area. She met her husband Craig 14 years ago and they have been married for five great years. "Craig took me for a ride in his 301 and it was love at first flight," Leslie said. For her, the aerial application business is simply a different side of the agricultural industry than what she grew up around.

She said her No. 1 goal is positive public relations for the aerial application industry. She would like to bring the non-

agricultural and agricultural communities together to work for the common good of sustaining the world around us.

Leslie said her involvement in the WNAAA began in earnest after attending her first NAAA and WNAAA Fall Board Meetings in Savannah, Ga., in 2009. "Everyone was so welcoming," Leslie said. "I just fell in love with the great group of women involved with the WNAAA."

She said she would highly encourage others to get involved with the WNAAA. Leslie said being part of the WNAAA gives you a beneficial connection with an amazing group of women. "It's all about relationships. If we do well then the farmer does well also; it's a trickle-down effect." Leslie said she has personally benefitted from being connected to other women in the industry and over the years has been able to pick up the phone and within several minutes find the information or part she needed for their business. She said this was all due to the relationships she established as being part of the WNAAA.

She also said involvement gives you a relationship with women who know what goes on in the ag aviation industry. "Not only is it a pleasure to be with the ladies of the WNAAA, it is so nice to share the stress that often comes with having a pilot-husband," Leslie said. "You have a common ground that everyone involved can relate to."

Craft Air Services has been in business for 14 years and operates two Thrush aircraft and consists of two ground crew team members, a second pilot in addition to Craig, and Leslie filling in wherever needed. But that's not all the Crafts have on their plate; they also recently started a manufacturing business producing modified seed drill repair kits for John Deere seed drills. And Leslie has been running her own successful Merle Norman cosmetics shop for the past 15 years as well.

Leslie keeps a full plate of activities and says there is never enough time in the day. Yet her optimistic nature of seeing the glass half full rather than half empty enables her to make it look easy. Leslie and Craig have two daughters and reside in her hometown of Hertford, N.C. —*D.K.*

Leslie Craft, 2012 WNAAA Secretary



A Passion for Agricultural Aviation

Erin Morse, 2012 WNAAA Treasurer



For a gal who doesn't hail from an agricultural background, Erin Morse has a hard time saying no when it comes to agricultural aviation and the WNAAA in particular. Since first getting involved at the state and regional levels in 2008, Morse has jumped in with both feet and is serving as the WNAAA's 2012 Treasurer.

Morse and her husband Gavin first ventured into the ag aviation industry in 2003 after he expressed an interest in fire-bombing. That initial interest sparked a chance meeting with NAAA operator Guy "Jock" Warren with Erin at a local Royal City, Wash., bank where she was working at the time. Morse put her husband in contact with Jock and the rest, as you say, is history. Gavin got his feet wet in the business and worked for Jock and Royal City Flying Service from 2003 through February of 2010. Morse enthusiastically joined him in learning everything she could about the aerial application industry.

Through attendance at her first NAAA Convention in 2007, Morse met Patti Cline whom she says has been a role model and mentor. In 2008 she attended her first Pacific Northwest Aerial Applicators Alliance (PNWAAA) regional meeting in conjunction with her first Association of Washington Aerial Applicators (AWAA) meeting. Never finding it easy

to say no, Morse served as then WNAAA President Patti Cline's proxy vote to the AWAA meeting and was selected and agreed to serve as the AWAA Executive Secretary—a role she has held for the past three years.

Since those early days, not too far in the distant past, Morse has learned a lot and grown to love the industry. She said she hasn't turned down the many opportunities afforded to her through the WNAAA because "the ladies of the WNAAA are amazing female role models and by being involved one can glean from their experiences—it's very empowering."

Morse said she loves that the WNAAA aims to educate the public about what ag aviation is, and as a result provide a better understanding of the industry as a whole. "I feel the WNAAA and the NAAA are two separate groups," she continued, "yet they work together toward a common goal. The WNAAA provides a unique opportunity to support one's spouse and allow him to be that much stronger and more successful."

Morse would encourage others to become involved in WNAAA and believes it's a \$170 annual investment for the future that helps promote the industry that essentially provides for its members' families. In serving as treasurer this year, her goal is simply to aid the people around her. She believes the most important component of leadership is the willingness to be a servant.

"This is not just a business, it's become our lives," said Morse. "We've grown to love the aerial application industry and we're passionate about it and the people involved in the business."

In addition to her new role as WNAAA Treasurer, Morse continues to serve as the AWAAA Executive Secretary and has been an official WNAAA Director for the past two years. She is also involved in the Athena program and the WNAAA Scholarship Committee.

Morse and her husband, Gavin, live in Connell, Wash., which is located in the south central part of the state. Gavin flies for B&R Aerial Crop Care and Morse has recently gone back to school to finish her undergraduate degree. —D.K.

"This is not just a business, it's become our lives. We've grown to love the aerial application industry and we're passionate about it and the people involved in the business."

—Incoming WNAAA Treasurer Erin Morse

Test Your Knowledge

Agricultural Aviation continues its series of questions to quiz you on your knowledge of aerial application topics. Thanks to the National Association of State Departments of Agriculture Research Foundation (NASDARF) for permission to use selected questions from their chapter review questions from the Aerial Applicator's Manual: A National Pesticide Application Certification Study Guide.

See pg. 33 for an explanation of 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 Safety & Education

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

1. From the choices below, what pesticide use information found on a product label would be specific to aerial application?

- A. PPE requirements.
- B. ASABE droplet size requirements.
- C. Field posting requirements.
- D. Restricted-entry interval requirements.

2. Having a current Class II Medical Certificate is a requirement of the _____ for all pilots making aerial pesticide applications.

- A. U.S. Environmental Protection Agency (EPA).
- B. State Lead Agency (SLA).
- C. Federal Aviation Administration (FAA).
- D. National Transportation Safety Board (NTSB).

3. Good communications with the ground crew before and during an application operation may result in:

- A. Greater chances of accidents.
- B. Inability for the ground crew to perform their tasks properly.
- C. Fewer job delays.
- D. Improper spray mixes.

4. Generally, the optimum time for making an aerial application of a liquid when droplet evaporation is a concern is:

- A. Early morning.
- B. Mid-morning.
- C. Early afternoon.
- D. Late afternoon.

5. One of the reasons for an adequate vent in the aircraft pesticide tank is to:

- A. Release excess pressure.
- B. Allow the pump to function efficiently.
- C. Prevent a vacuum from altering the normal flow of liquid.
- D. Keep the pesticide mixture uniform.

6. To accommodate for the influence of prop wash on spray pattern, it is necessary to:

- A. Regulate the output flow to the nozzles.
- B. Adjust the speed of the aircraft.
- C. Reposition the nozzles on the spray boom.
- D. Decrease the pump speed.

7. 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.

8. The last application flight of the day:

- A. Is more relaxed and requires less attention.
- B. Is not as important as other flights of the day.
- C. Requires the same attention as every other flight.
- D. Should be to the most challenging field of that day's operation.

The next two questions are agricultural aviation trivia. Can you come up with the answers?

9. Which U.S. airline has a "crop dusting" company as its roots?

10. Who was the first Executive Director of NAAA and who served as its first president?

See answers on pg. 83



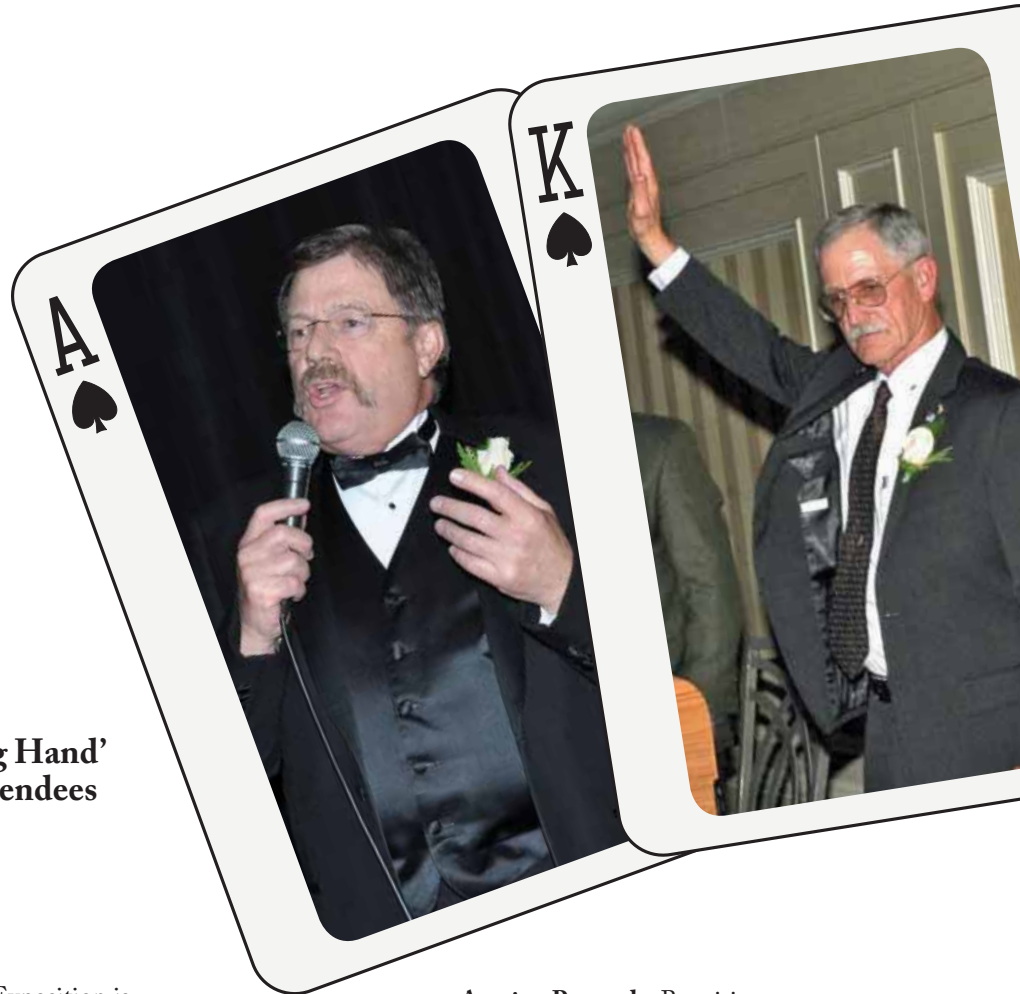
Coming up Aces!

NAAA's 2011 'America's Winning Hand' Convention was a big hit with attendees and for the Association

By NAAA Staff

NAAA's 45th Annual Convention & Exposition is now history and will be remembered as the most heavily attended convention since the late 1990s. The recent records set at 2010's convention in Savannah were broken at NAAA's "Ag Aviation, America's Winning Hand" show in Las Vegas. Numbers in nearly every category increased, including:

- **Attendance:** Attendance was better than it's been for any NAAA convention since 1998, with 1,737 attendees participating in the four-day ag aviation extravaganza. This was a 3% improvement over last year's heavily attended Savannah convention.
- **Exhibitors:** The number of exhibitors was up as well in Las Vegas. The 8% increase eclipses a record set just last year in Savannah. This year, 155 exhibitors displayed their cutting-edge goods and services for our nation's aerial applicators at NAAA's trade show, compared to the previous high of 143 exhibitors in 2010.
- **Hotel Space:** NAAA also set a record for its hotel allotment in Las Vegas. Attendees reserved a total of 3,980 room nights. That's 4.7% higher than NAAA's recent record of 3,801 room nights in Savannah, Ga., last year.



- **Auction Proceeds:** By raising more than \$372,000 for NAAA and WNAAA, the Live Auction ended up within spitting distance of last year's record auction, which had raised \$460,000. More than \$200,000 of this year's amount came from Al and Mike Schiffer of Al's Aerial Spraying in Ovid, Mich., who came out on top in the bidding for the Pratt & Whitney Canada credit for OEM parts and maintenance services associated with both a large and small PT6A AG engines. NAAA would like to thank Pratt & Whitney Canada once again for this unprecedented contribution and for the incredible support the company has shown NAAA and the industry over the years. Special thanks also to Tulsa Aircraft Engines, Covington Aircraft Engines, Thrush Aircraft & Electronics International, Turbines Inc. and all the other generous contributors to this most successful NAAA auction.
- **Sponsorships:** Based on the amount of company logos greeting convention attendees in Las Vegas, it was easy to tell this was a great year in terms of sponsorships. In fact, the 25 convention sponsors ties with last year as the most ever. The extra sponsorship revenue—totaling over \$160,000—will help NAAA provide valuable services to the aerial application industry over the coming year.



A ROYAL STRAIGHT FLUSH

Talk about a winning hand! From left to right, Ace emcee Rod Thomas holds court; King Richter gives up his crown; Dave Lopez moderates the Honeywell Engines concurrent session (Queen of Spades); a young attendee hops into a pedal plane purchased at NAAA's auction (Jack of Spades); convention organizer Peggy Knizner staffs NAAA's booth (10 of Spades).

Here are some highlights from NAAA's 2011 Convention from a week that had plenty of them.

Opening Speaker Captivates at NAAA's Kickoff Breakfast

Brian Shul delivered an inspirational and entertaining message as the keynote speaker at the convention's Kickoff Breakfast. What's more, he appeared to get just as big a kick out of speaking to a roomful of pilots as the audience did of him. The bond was evident by the laughter ringing out from the audience and the podium, and by the amount of time Shul spent afterwards signing copies of his book "Sled Driver" while a line of purchasers snaked down the hall.



Most attendees were aware of the thumbnail version of Shul's life heading in—shot down in Vietnam; nearly died from horrific burns; underwent 15 major operations and spent a year in the burn unit; after being told never again, he recovered and continued to not only fly fighter jets but went on to become one of fewer than 100 pilots to fly the famed SR-71, a top-secret spy plane and the world's fastest jet. What they didn't know was how it all came to pass or what a droll sense of humor Shul had.

Four Steps to Living Fearlessly

- Sometimes the smallest decisions we make can have a profound effect on our future.
- Failure is an option! Don't let the fear of it prevent you from moving forward.
- When you follow your passion in life, doors open.
- Always hope. Dare to dream. Live your passion. Life is short.

"I guess I didn't end up where I thought I was going to be," Shul thought at first after he awakened in flames, lying in the jungle. Many times during his hospitalization he wished he was dead and was literally wasting away. Watching some kids playing soccer outside his window one day helped him realize that life was still worth living. So he decided to eat and eventually made a full recovery.

With a new lease on life, Shul embraced a whole new philosophy of "living fearlessly" and living as if he had nothing to lose. "When you lay on your back for a year you



Brian Shul gave a rousing address at NAAA's Kickoff Breakfast and stuck around to autograph copies of his book "Sled Driver." Attendees waited patiently in a line possibly 100 deep at one point for the chance to buy the book.



NAAA Executive Director Andrew Moore (far right) and BASF's Gary Fellows (far left) congratulate Brad Taylor (left) and Jordan Loewen (right) for earning the 2011 NAAA/BASF Agricultural Aviation Scholarship.

find out what's important in life," and it's not money or cars or houses, Shul said, it's about pursuing your passions regardless of whatever obstacles stand in the way.

After the success of "Sled Driver," a book born from a series of rare and random pictures he took while flying in or alongside the SR-71, Shul convinced the Blue Angels to let him fly with them for a year to photograph them and make a book. He was granted unprecedented access. All it took was 274 phone calls, one unannounced visit to the Blue Angels' remote training facility and an ambitious, go-for-broke request when he finally nabbed a short sit-down with the leader of the squadron!

"There was no magic formula. It was just persistence," Shul said. It's a lesson that should resonate particularly with new pilots seeking to break into the industry. That's not to say it's going to be easy or that things will always work out the way you expect, but you should always hope, Shul added.

He punctuated his remarks with some parting advice: *Dare to dream. Live your passion. Life is short.*

NAAA/BASF Agricultural Aviation Scholarship Awarded

In addition to Brian Shul's address, BASF's Gary Fellows announced the recipients of the 2011 Agricultural Aviation Scholarship at the Kickoff Breakfast. NAAA and BASF sponsor the two-year-old scholarship program together. NAAA President Rick Richter presented Jordan Loewen with a check for \$5,000 and Brad Taylor received a \$2,500 scholarship. Loewen hails from Park River, N.D., and Taylor is from Walnut, Miss. Both of these aspiring ag pilots have already put the scholarship money to use. To be eligible, applicants had to be sponsored by an NAAA operator. Loewen was sponsored by Glenn Wharam of Valley Sprayers Inc. in Park River, N.D. Dennie Stokes of Stokes Flying Service in Parkin, Ark., sponsored Taylor.

Checking Our Vital Signs



Two Speakers With Their Finger on the Pulse of Pilots and The State of Agriculture Sparkled at NAAA's General Session

The General Session is the educational anchor on the second day of the convention, and this year's session lived up to that billing. "Healthy perspectives" was the theme of the day for NAAA's two speakers; those who attended left with a healthier outlook about their health and the future of agriculture, courtesy of two leading experts in their fields.

Jump Ahead on Air Medical Issues

The first General Session speaker was Dr. (Col.) Mark Ivey, a pulmonary, critical care and sleep medicine specialist who is also the chief of flight medicine for the 110th Air Wing of the Michigan Army National Guard. He is one of a handful of consultants to the Federal Air Surgeons and a consultant to American Airlines. Dr. Ivey addressed the importance of developing and maintaining healthy lifestyle habits. One habit he recommends is for pilots to plan their physical during their downtime, in case a condition is found that takes time to resolve.

Dr. Ivey also recommends all pilots preparing to take a flight physical first sign up with MedXPress at <https://medxpress.faa.gov>. MedXPress is a web-based version of the FAA Form 8500 that must be completed when taking a physical. The pilot must request an account and he/she will be emailed a

password. The biggest advantage is you have three weeks to fill out the form before your scheduled physical, giving you plenty of time to look up medical history, doctor's names and addresses, medications and so forth. You don't have to finish it in one session, so you can log back in and complete the form later. After everything is filled out, you would submit it to the FAA and print a copy to take with you to your flight physical. As an added bonus, the information will remain in MedXPress for your next future physical.

Dr. Ivey offered a word of caution to any pilots tempted not to report medication they are taking, doctor visits or other things they are hesitant to tell the FAA about. Especially in the case of a serious accident, the FAA and your insurance company may be digging into your records. In today's world with many databases ranging from insurance records, state driving records, a national clearinghouse of prescriptions and others, you will find it difficult to hide anything. Failure to report a medical condition is treated as fraud.

The alternative to lying on the medical is reporting the condition even if it means getting your medical through a "Special Issuance." Dr. Ivey said less than 1% of applicants for a flight physical lose their physical permanently. If you have a condition that could require a Special Issuance, it is important to take care of this testing during your slow time—not as the application season is beginning. Resolving the issue may take some time.

Dr. Ivey went on to discuss medical problems that raise a red flag with the FAA. Many of these are treatable or preventable by healthy living. With aging in our pilot population, we can expect a greater incidence of age-related illnesses. High blood pressure, diabetes, and others become more common. A new emphasis is being put on people suffering from Obstructive Sleep Apnea (OSA) after several high-profile accidents and incidents were traced to OSA. FAA estimates OSA effects about 9% of the general population, but only about 1% is reported on flight physicals. FAA is encouraging flight surgeons to look for factors that may indicate sleep apnea such as obesity and large neck size.

Dr. Ivey's overarching message is to take care of your body with the same care you devote to your aircraft and engine. In the long run, the benefits will make the effort pay many times over.



Dr. Mark Ivey put on a clinic for NAAA attendees on how to earn and maintain a medical flight certificate.

20/20 Foresight: How to Look Into the Future of Agriculture

No one can predict what will happen in the future with absolute certainty. For anyone who thinks otherwise, futurist Bob Treadway lives by a cardinal rule: “Don’t predict.” Predictions are fool’s gold, he explained; the business he and futurists like him are in is *forecasting*. The difference between the two is as wide as the gulf between a Hershey’s Kiss and a high-end chocolatier’s chocolate. Treadway defines forecasting as “foresight that accounts for uncertainty and adjusts with time and new information.”

In Part 2 of NAAA’s General Session, he delivered a fascinating analysis of what he foresees for the future of agriculture. Treadway is a consulting futurist and forecaster who has deep agricultural connections. The National Corn Growers Association, U.S. Soybean Export Council and Syngenta are among his numerous ag clients. He also provides strategy advice to some of the largest companies in the America, including ExxonMobil and Berkshire Hathaway.

As a futurist, Treadway has to have a broad perspective. Assessing agriculture from that lens, he focused on eight areas that will have an impact on the future of agriculture in some way: 1) the economy, 2) China, 3) long-term global demand for food, fiber and other agriculture products, 4) trade trends, 5) technology, 6) biofuels, 7) surprises—Treadway’s favorite thing to learn from because no one saw it coming (e.g., the Arab Spring), and lastly 8) “leverage,”

such as opportunities that would allow agricultural interests to improve their reputation and change public perception.

All in all, he sees a high upside for agriculture. “Yes, there are challenges; yes, there are problems; yes, there are concerns ... but there are so many things going for you, not the least of which is your determination,” Treadway said.

Treadway is a student of long-term population projections, and the trends he cited provide a strong indication that demand for agriculture is only going to grow. Keeping up with demand will be the challenge. By 2028 we will have to feed another India; by 2050 we will have to feed two more Indias. “But we really would need to feed three Indias by 2050 in order to curb world hunger,” he pointed out.

Treadway believes productivity will increase and foresees new technologies coming to the fore that hold great promise. The economy will continue to hit some rough spots in the near future, but he feels aerial applicators will fare better than others during these economic fluctuations due to the recession-resistant nature of the profession.

When ag operators and pilots think about the future Treadway stressed the need to be cold and calculating. The point is to prepare for the future and to be ready to adjust as needed. Forecasts can be fun, but unless you can capitalize on them, they’re useless. That’s why Treadway adheres to another cardinal rule. It’s called the “Noah Principle,” an adage steeped in biblical lore. In other words, Just forecasting rain doesn’t count, building arks does.



Futurist Bob Treadway lays out a roadmap that sheds light on the future of agriculture. It is a roadmap replete with challenges and opportunities for aerial applicators and American agriculture in general.



From left to right, FAA/Security Session panelists Allen Ellison (FBI), Kerwin Wilson (TSA), Harlow Voorhees (FAA Safety Team) and Carl Johnson (FAA).

FAA/Security Session

NAAREF President Rod Thomas moderated the FAA/ Security Panel discussion. The panelists were:

- Carl Johnson, FAA, AFS-820 , Manager, Operations & Safety Programs
- Kerwin Wilson, TSA, Acting Manager, General Aviation Programs
- Allen Ellison, FBI, Civil Aviation Security Program
- Harlow Voorhees, FAA, Safety Team Agricultural Contact

On FAA issues, Carl Johnson provided an update on the five-year strategic plan within the FAA to reduce general aviation accidents and fatalities. He mentioned the FAA had approved new marking recommendations to make towers less than 200 feet above ground level more visible. Additionally, Johnson said we can expect some changes in the FAA's interpretation of "public aircraft" as opposed to the way it has been interpreted in AC 00.1-1 titled "Government Aircraft Operations." The understanding between the operator and the governmental body must meet stricter guidelines and be clearly understood by both parties.

Harlow Voorhees reported on changes in the FAA Team since the appointment of a new manager for the team. He introduced Bryan Neville as the FAA Wings Program

Manager. Neville reported on the program's plans to have more educational activities directed specifically to the ag community. The ultimate goal is to allow pilots to qualify for their flight review by taking and passing a Part 137 knowledge and skills test along with completion of some online courses.

Kerwin Wilson spoke about the general aviation programs administered by the TSA. He provided an update on the Large Aircraft Security Program (LASP), which the entire general aviation community has been waiting for. The original proposal was not popular with GA and was returned for modification. The second draft has still not been published and it is working its way through the DHS and TSA system. Wilson listened to attendee's comments about the dislike for TFRs which may keep operators grounded while in the vicinity of political functions. He agreed to pass our concerns to the U.S. Secret Service and try to find at least a workable solution.

Finally, Allen Ellison with the FBI's Civil Aviation Security Program reviewed security situations that have happened in general aviation involving the FBI. He emphasized a change in terrorist tactics whereby terrorist groups are attempting to recruit more "home-grown" terrorists. The fear is home-grown terrorists won't be as recognizable because they don't fit the stereotype we may have of foreign terrorists. Ellison cautioned that plots still favor the use of aviation in terror activities.



BASF's Gary Fellows discusses the company's new fungicide and herbicide products at NAAA's Chemical Session.

Chemical Session

The Chemical Session provided updates and overviews from several chemical manufacturers. Craig Abell from Syngenta introduced an upcoming product for earworm management in seed corn that has two active ingredients and provides both fast knockdown and residual control. Representing DuPont Crop Protection, Wayne Schumacher described three new products, one being an insecticide for use on corn and cotton and the other two being herbicides for brush control. Gary Fellows talked about a new fungicide for soybeans, a new use for another fungicide on alfalfa, and a new herbicide for warm season grasses from BASF.

Jeff Preston from MANA Crop Protection spoke about their focus on taking old products and making them better, such as by reducing odor, improving the signal word and making them easier to handle. Bayer CropScience was represented by Mike Jones who discussed their focus on products with lower use rates, which offers several benefits including tank mix flexibility, less packaging to dispose of and less storage space.

Rick Geddes from Dow AgroSciences discussed their increase in research and development spending and that they will be launching five new products over the next few years and adding new uses for existing products. One interesting new crop protection product is a more targeted insecticide, sulfoxaflor, which will be available for cotton. The product is pest-specific so it is softer on beneficial insects and safer to mix and load.

NPDES Permits Session: What it Means to Aerial Applicators

One of the most impactful sessions of the convention focused on the effects of the newly enacted NPDES Pesticide General Permits on aerial applicators. John Thorne, senior policy advisor at Crowell & Moring LLP, spoke to the importance of the permit and emphasized the potential financial and regulatory bearing the permits will have on the agricultural aviation industry.

Thorne stated EPA's PGP will affect every NAAA member who applies pesticides into, over or near waters of the U.S. or helps make decisions about applying such pesticides in the states and territories where EPA is the lead agency (Idaho, New Mexico, Alaska, Oklahoma, New Hampshire, Massachusetts; nationwide federal lands, including national forests, military bases and national parks; and most U.S. territories). Additionally, he pointed out that the permits in the remaining 44 states differ significantly and it will be up to aerial applicators to understand each state's permitting system in which they operate.

Thorne also mentioned how NPDES pesticide permits may result in citizen suits against applicators. He suggested a check-off list of records to keep and application procedures to follow in an effort to minimize the effects the permits may have. While the NPDES permit is indeed burdensome and duplicative, Thorne emphasized, due to NAAA's efforts, the permit's requirements are far less for applicators than what the EPA originally proposed back in the spring of 2010.

Thorne's suggested check-off list for aerial applicators includes recording and keeping the following information:

- Use appropriate technology, application BMPs;
- Maintain, calibrate and monitor equipment;
- Properly handle pesticides, avoid spills;
- Properly mix and load, dispose/recycle containers;
- Assess weather conditions, minimize drift;
- Keep records of BMPs, spray logs, incidents;
- Report incidents and adverse effects; and
- Communicate with decision-making clients so they can update their records, report and satisfy their requirements.

EPA released the PGP after two years of development, and while Congress never expected the Clean Water Act to apply to you and me, said Thorne, it is something we



THREE SCENES FROM NAAA 2011 Left to right, DuPont Crop Protection's Wayne Schumacher and ticket-taker extraordinaire Tom Harkin; an attendee examines an engine at Covington Aircraft's booth; Turbines Inc. celebrates its 30th anniversary in model fashion.

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Scott's-Bell 47 Inc. (SB47) exhibited a refurbished 47G-2A at NAAA's Trade Show. Operated by sister company Scott's Helicopter Services Inc., the helicopter is an example of the kind of refurbishment SB47 hopes to offer to the marketplace in the coming months. It features an Isolair Helicopter Systems agricultural spray system and a number of STCs including a No-Bar Kit, improved sprag clutch system and a muffler, which, according to the company, combine to reduce weight, operating costs and noise.

will have to work with until legislative action can hopefully reverse it. "This is the real McCoy and the permit has \$37,500 per day implications," he said.

Thorne encouraged NAAA members to be sure their pesticide application contracts clearly separated the obligations of the decision-makers and for-hire applicators because decision-makers' requirements are far more extensive. He stated he would be working with NAAA to develop sample contract language between decision-makers and applicators and a check-off list of procedures for applicators to follow to best comply with the recordkeeping requirements of the permit. Thorne also urged members to utilize the NAAA website to find more information about the permits.

(See the Washington Report on pg. 10 for an in-depth look at aerial applicators' requirements under the new NPDES PGP requirements.)

Application Technology Session

The Application Technology Session gave NAAA members an opportunity to find out about new products and features related to improving application accuracy. Reg Moen from DynaNav Systems talked about interfacing with Google Earth and compatibility with night vision goggles. David Hagert from AgriData provided an update on Surety Mapping System and a new product, Surety Pro. Leading

Edge Associates, represented by Mike Reynolds, explained some of the products they offer, including data management, droplet size analysis and mapping. Greg Guyette introduced Hemisphere GPS's latest product, the G4, which allows for wireless data transfer and remote access of the system. Larry Lichtenberger from Simplex Manufacturing reviewed the various spray systems they offer for a variety of helicopters.

Support Division—Fuels Session

The fuels session explored the use of avgas in the ag industry. Bryant Otto and Lynn Stewart of Satterfield Aviation Fuels co-moderated the session and added their experience to that of the speaker, World Fuel Services (WFS) Regional Sales Executive David Strickland. WFS is a global leader in fuels, including aviation gasoline and turbine fuel.

Although avgas production has been halted at all but a handful of refineries, Strickland reported he had no indication avgas would not be available in the foreseeable future. Production at most refineries is dedicated to automobile fuel; few if any new refineries are coming online; and the ones that are producing are at or near maximum capacity. The end result is avgas gets shipped from a few refineries via rail to distribution points throughout the U.S. Therefore, ag operators and fixed-base operators have a supply of fuel, but it may not be available immediately. Typically there is a delay of several days between the time it is ordered and delivery.

The panelists agreed the downside of the fuel's low production is the price will probably continue to climb. Their take-home advice to operators using avgas? Arrange for storage and allow lead time when placing the order. Making arrangements for a backup supply of avgas with a local FBO might be a smart option as well.

In related news, NAAA staff reported they are following the progress of the general aviation avgas coalition in their effort to find an unleaded alternative to 100 LL or 100 VLL. NAAA is also keeping abreast of developments on a California lawsuit brought by the Center for Environmental Health against some of the state's fixed-base operators for using and selling fuel containing lead.

Helicopter Session

NAAA's helicopter roundtable rounded out this year's concurrent sessions in the final timeslot of the convention. Jeff Reabe of Reabe Spraying Service in Wisconsin moderated a roundtable-style discussion about the use of helicopters in the ag aviation industry. Attendees identified themselves and the moderator addressed their questions or comments about any ag helicopter issues.

Much of the news at the session centered around Scott's-Bell 47's future plans for the Bell 47 helicopter since they now own the rights to it. Scott's-Bell 47 Inc. is a part of Scott's Helicopter Services located in Le Seuer, Minn. They anticipate building a new Scott's-Bell 47 starting in 2014 to meet some of the needs of the ag community. They are also trying to purchase the rights to use the Soloy turbine engine conversion in the future.

The session continued with discussions about parts availability for various equipment currently in use and other topics important to helicopter users. Participants at the session also exchanged information about obtaining recurrent training in helicopters to meet insurance requirements since few schools offer helicopter ag training. The training topic led some attendees to inquire about where the operating companies were able to obtain replacement pilots. It seems that most companies train their own pilots.

Compass Rose Sessions

Bookend *Compass* Rose sessions were offered at the beginning and end of the convention. *Compass* Rose grew out of the PAASS Program and is led

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by PAASS presenters as a way to help educate new pilots entering the aerial application industry. Landing a seat in this industry isn't easy, so patience is paramount. "In this business you just have to be extremely patient," one of the PAASS presenters leading the second *Compaass* Rose session counseled.

New pilots were warned that an operator faces a situation where "a single pass can ruin a career" by exposing the operator to damages and legal claims. "That operator, when he hires you, is giving you so much responsibility it is unfathomable," said Harley Curless, owner of Curless Flying Service and Farm Air Inc. in Astoria, Ill.

Loyalty is a recurring theme that undoubtedly comes up at every *Compaass* Rose gathering. It was noted that ag pilots in general have a great deal of initiative and drive, but there is also an expectation of loyalty if an operator opens up his business and takes in a new or low-time pilot. One fear for operators is that they could end up training their competition if the pilot starts a competing business. One possible solution is entering into a non-compete agreement for a specified period of time. The pros and cons were discussed. Some operators require it; others don't think it will stand up in court. It depends, still others said. One person suggested the enforceability of a non-compete clause could depend upon whether the pilot is classified as an employee and what the operator requires of the pilot.

One pilot offered to sign a non-compete clause on his own and landed a seat with an operator. The new pilot also researched what it would cost to get insured and offered to defray some of the operator's expense to insure him. Having some "skin in the game" shows an operator a prospective pilot is serious, which can go a long way toward finding a mentor and landing that all-important seat.

Savannah, Here We Come!

The 2011 convention closed with an invitation from President Rick Richter for everyone to attend NAAA's 46th Annual Convention & Exposition Dec. 3–6, 2012, in Savannah, Ga. After the success of NAAA's first-ever convention in Savannah in 2010, you can expect even better things in 2012.

It's not too early, in fact, to make your hotel reservations for Savannah. Unlike the Las Vegas Hilton, NAAA will utilize at least two and maybe three or more hotels in Savannah. Room blocks are open at NAAA's two main hotels now—the Westin Savannah Harbor Golf Resort & Spa, located across the Savannah River on the same side as the convention center, and the Hyatt Regency Savannah, located on the city side where Savannah's shops, restaurants and attractions are. Near-continuous ferry service will be available to transport attendees from one side of the river to the other.

The Savannah Convention & Visitors Bureau has established a dedicated website for attendees to book



AIRPLANE JUNKIES Getting an up-close look at the latest ag aircraft innovations, such as the new-generation Thrush 510G powered by the GE H80 turbine engine on display at the 2011 Trade Show, is one of the main draws for ag pilots at NAAA's annual expo.

their stay at either hotel. Through this website you can book, modify or cancel your hotel reservations at any time and receive updated information about NAAA's 2012 Convention. If you have a hotel preference, make a New Year's resolution to reserve your room(s) early. You can

get started by logging onto <https://resweb.passkey.com/go/46thNAAA>.

Thank you to everyone who made NAAA's 2011 Convention such a success! ■

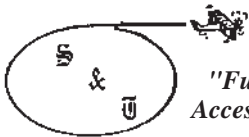
What Else Happened in Vegas?!! See for Yourself at NAAA's Online Photo Gallery

The 45th Annual NAAA Convention has ended, but the memories will live on—especially in the various assortment of photographs taken in Las Vegas. If you'd like to view, share, upload or even purchase photos taken at the convention, NAAA has compiled them all on one convenient website: http://photobucket.com/NAAA_LasVegas_2011. Once on the website, you may view all the categorized photos on the right side of the screen. Enjoy, and thanks again to our great convention photographer, Joe Coomber.



YOU'RE ON CANDID CAMERA! NAAA's photographer captures Gaylon Stamps (a.k.a. Allen Funt) on camera alongside Luther Herndon of Thrush Aircraft. To view NAAA's professional convention photos in their entirety, visit http://photobucket.com/NAAA_LasVegas_2011.

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Vegas Vignettes: A Photo Montage

Top row, pg. 46, from l-r: Morgenroth Aviation's Dardon and Liz Morgenroth grab a bite at NAAA's Welcome Reception; corporate magician Jon Petz performs at BASF's booth.

Bottom row, pg. 46, from l-r: Auctioneer Kevin Palmer in action; AgWired.com's Cindy Zimmerman interviews NAAA President Rick Richter.

Top row, pg. 47: An attendee gets an inside look at Air Tractor's AT-502B on display in the Hilton Center.

Middle row, pg. 47, from l-r: Valley Air Service's Bruce Hubler sits on the Honeywell Engines concurrent session panel; an attendee peruses old photos from past conventions and other pictures on display at NAAA's Museum Booth; an unexpected guest spreads some holiday cheer at NAAA's Live Auction.

Bottom row, pg. 47, from l-r: Members of the late Leland Snow's immediate and extended Air Tractor family rise near the conclusion of NAAA's tribute to the inventor of the modern ag plane; Nancy Snow receives a plaque in appreciation of her extraordinary husband from Rick Richter on behalf of NAAA's Board, members and staff. Daughters Kara East and Kristen Edwards and son-in-law Trevor Edwards are also pictured.



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NAAA and the WNAAA wish to thank everyone who made the 2011 Live Auction such a success, including Syngenta for sponsoring the reception, the individuals and organizations that donated goods and services to the Live & Silent Auctions and everyone who purchased an auction item. Thank you, all, for your continued generosity! The combined auctions raised more than \$380,000 for the two Associations.



FUN AND GAMES 2011 NAAA President Rick Richter takes a spin on the Cruzin' Cooler, an auction item provided by Bayer CropScience; Rick Reed and Stan Jones perform some aerobatics at NAAA's Live Auction with a pedal plane donated by Devil Dusters Inc.

2011 NAAA/WNAAA LIVE AUCTION WINNERS

DONATED BY	DESCRIPTION	PURCHASED BY
AeroFlow Systems	40 AFS Check Valves	Jeff Chorman
Air Tractor Inc.	Spares Kit for AT 402/502	Bob Bailey
Air Tractor Inc.	Spares Kit for AT-602	Dan Kubal
Air Tractor Inc.	Spares Kit for AT-802	Rick Reed
Air Tractor Inc.	RAM Air Upgrade Kit for AT-602/802	Rusty Cartilar
Air Tractor Inc.	RAM Air Upgrade Kit for AT-602/802	Barry Joe Wilson
Air Tractor Inc.	Garmin GPS Aera 560	Roger Hewitt
Arkansas Turbine Services Inc.	Benelli Shotgun	Bob Bailey
Bayer CropScience	Cruzin' Cooler	Ray Edmistson
Bayer CropScience	Cruzin' Cooler	Jane Bailey
CD Aviation Services	Compro Smoke Generator, 3 gal., sized for all Ag Aircraft	Doug Gibson
Covington Aircraft Engines	\$15,000 Gift Certificate toward any PT6-A, R-985 or R-1340 Engine Overhaul, Maintenance or Repair performed by Covington Aircraft	Kyle Scott
CP® Distributor Family	50 CP-11TT Flat Fan Nozzles	John Pew
CP® Distributor Family	50 CP-06 Swivels	Dana Ness
Devil Dusters Inc.	Children's Pedal Plane	John Pew
DuPont Crop Protection	#24 DuPont Motorsports Car Hood, autographed by Jeff Gordon	Jane Bailey
DynaNav Systems Inc.	DynaNav Gift Certificate toward a DynaNav system	Bruce Hubler
Flying Tiger Aviation	Credit toward half of a Turbine Transition Course	Jared Lazenby



NAAA and WNAAA netted \$372,000 from the Live Auction at the 2011 NAAA Convention.

CONTRIBUTED BY	NAME OF ITEM	PURCHASED BY
Fighters & Legends LLC	F4U Corsair Ride	Dwayne O'Brien
Lane Aviation	Standard-size Pump Brake and 4-blade fan (can fit on an Agrinautics, Transland or Root pump)	John Pew
Pratt & Whitney Canada	\$70,000 Pratt & Whitney Canada Small Turbine Engine Parts & Service Credit for Hot Section Inspection, or Repair, or Overhaul	Al Schiffer
Pratt & Whitney Canada	\$125,000 Pratt & Whitney Canada Large Turbine Engine Parts & Service Credit for Hot Section Inspection, or Repair, or Overhaul	Al Schiffer
Prime Turbines	Set of Fuel Nozzles for Small or Midsize engine (eligible models include PT6A, 11AG, 15AG, 27 or 34 AG)	Michael Gaspar
S & T Aircraft Accessories Inc.	Normal Overhaul of Starter-Generator, either Goodrich/Lucas or APC brand	Leonard Felix
Southwest Turbine Inc.	Turbomaxx Crossover Duct (Zero-Time Part No. 3103496-3); High Performance Turbomaxx Crossover Duct for TPE331 Engine	Bruce Hubler
Standard Aero	10% Discount, not to exceed \$10,000, off next TPE331 Engine Overhaul, Hot Section or Major Engine Repair	Dwayne O'Brien
Starr Aviation Insurance	iPad with Accessories	Dallas Saffer
Syngenta	Helmet	Terry Sharp
Tall Towers Aviation (Tim McPherson)	P-51 Mustang Ride	John Cooper
Thrush Aircraft Inc. and Electronics International	Complete Panel Assembly (upper with shroud, lower left with all switches, etc.; lower right with all circuit breakers, etc.), including everything necessary to "convert" any Thrush to the new EI MVP-50T "glass panel" display	Darren Tiede
Transland LLC	Custom Boom	Terry Sharp
Tulsa Aircraft Engines	P&W 985 Piston Engine (1,000-hour warranty)	Dennis Noble
Turbine Conversions LTD	Complete System for Central Point Fueling—STC for all Ag Aircraft Make and Models	Matt Brignac
Turbines Inc.	\$30,000 Credit towards Overhaul of a PTGA-20 to PTGA-65 Engine at Turbines Inc. in celebration of 30 years in business	Terry Sharp
Wayne Handley Aerosports	Harold Miller Helmet Trophy & Aerobatics Course	Al Schiffer

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A sextuplet of companies provided product updates at NAAA's 2011 Chemical Session

By Scott Bretthauer, Ph.D.
University of Illinois, Application Technology Extension Specialist

Editor's Note: Many states offer CEUs for attending NAAA's Convention because it is a great way for aerial applicators to stay up to date on the latest research and technological advances across a spectrum of important subject areas. Some of NAAA's educational sessions overlap, including the popular Chemical Session. For the benefit of those who missed it, we asked Dr. Scott Bretthauer to recap the Dec. 5 Chemical Session for *Agricultural Aviation's* readers.

NAAA's Chemical Session provides an opportunity for chemical companies to present new products, updates to old products and other information that can be valuable to aerial applicators when selecting the products they need to keep their customers happy. For those who were unable to attend the Chemical Session at NAAA's recently concluded 2011 convention, the following is a summary of the presentations given by representatives from several chemical manufacturers.

New Options for Earworm Control in Seed Corn

Presenter: Craig Abell, Crop Specialist, Syngenta

Syngenta introduced **Besiege**, a newly registered insecticide. It currently has a federal section 3 label with individual state registries pending. Check with your local extension office to determine if it is labeled for use in your state. Besiege is an excellent choice for ear worm management for seed and sweet corn. It is a foliar insecticide that has fast knockdown as well as long-lasting residual control. It can be used to treat for both sucking and chewing insects. It will be registered for use on several crops and there are 38 insect pests listed on the label.



Besiege is especially effective for controlling difficult lepidopteran pests including those resistant to other insecticides.

The rate is dependent on the time of season, with lower rates used early in the season and higher rates used later. It contains two active ingredients; lambda-cyhalothrin is a pyrethroid and Chlorantraniliprole is a chemical that interferes with an insect's muscle tissue. These two chemicals provide multiple modes of action, including contact, ingestion and ovicidal. University research shows good results, and Besiege is labeled for aerial application.

Introduction to New Products Developed by DuPont Crop Protection

Presenter: Wayne Schumacher, Portfolio Manager, DuPont Crop Protection

DuPont introduced several brand new products. **Prevathon** is a new insecticide that can be used for all forms of corn and cotton. It can be used to control tough feeding pests and has a Caution signal word rating. **Approach** is a new fungicide that provides both curative and preventative disease control. It can be used to control a broad spectrum of diseases. Approach is systemic and redistributes itself within the crop canopy. **Viewpoint** is a new

herbicide for vegetation management. It provides broad spectrum brush control and can be used on tough-to-control brush species in rights-of-way and utility applications. Viewpoint is not a restricted use pesticide. **Streamline** is another new herbicide for controlling brush in areas where maintaining the grass in good condition is important. Finally, **Rejuvra** is a new herbicide with good grass safety that can be used to control broadleaf weeds and brush.

Disclaimer: The summaries provided within this article are direct accounts of what was presented during the 2011 Chemical Session. Dr. Bretthauer's recounting of the proceedings is supplied without making judgments or interpretations. Company product claims are provided for informational purposes because NAAA believes in the importance of keeping aerial applicators abreast of new product offerings that can help them and their clients. The Chemical Session is open to member companies in NAAA's Allied Chemical Division. For more information, contact the Chemical Division Representative to NAAA's Board, John Garr of Garrco Products Inc.

BASF Fungicide and Herbicide Update for Aerial Applicators

Presenter: Gary Fellows, Tech Service Fungicide and Seed Treatment Manager, BASF

Priaxor is a new fungicide for use on soybeans that is two fungicides combined into one. It has a broad window of control, provides long lasting residual and has a unique redistribution throughout the leaves. It contains the active ingredient in Headline as well as a new active ingredient, Xemium. It can be used for both preventative and post-infection disease control, and has been shown to provide more consistent results and better yield response on soybeans than Headline. Priaxor controls a wide spectrum of diseases and can be used with a variety of tank mix partners. For now Priaxor use is focused on soybeans, but it will become available for use on additional crops in the future.

Innovative Crop Protection Solutions

Presenter: Jeff Preston, North Central Business Leader, MANA Crop Protection

MANA is a part of ChemChina, the sixth-largest player in the global agricultural chemical arena. Their market focus is on advanced formulation technology. They work towards taking old products and making them better as well as developing new molecules. Some of the changes they make to older formulations are driven by environmental regulations. They have several goals when reformulating products. These include reducing odor, improving the signal word and making the product easier to handle.

Low Use Rate Technology and Aerial Application

Presenter: Mike Jones, Technical Sales Consultant, Bayer CropScience

Bayer is concentrating its efforts on low use rate technology with a focus on sustainability. There are many benefits of products with low use rates, including tank mix flexibility, reduced storage needs, lower transportation costs, increased loading efficiency and less packing material to dispose of. Bayer offers several herbicides and fungicides with low use rates. They are currently working with Junge Control on handling and mixing equipment and described a mini bulk stirrer that provides mechanical agitation and is ideal for SC (suspension concentrate) products.

Faster, Stronger, Together: Dow AgroSciences and the Agricultural Aviation Industry

Presenter: Rick Geddes, Tech Representative, Dow AgroSciences

Dow is focused on growth and investment in the future. It has increased its spending on research and development in order to have a robust agricultural chemical pipeline. Included in this spending is construction of new research and development facilities. Dow is working on seed and biotech products but stated that agricultural chemicals are the foundation of its success. Dow has five new products that will be launched over the next few years, as well as new uses for existing products. **Cobalt Advanced, PowerFlex, RebelEX and Lorsban Advanced** are all

Headline SC can now be used on alfalfa in order to improve quality and yield. The application of Headline SC on alfalfa is a good fit for aerial applicators because growers do not like to drive over their crop once it is up. Research by the University of Minnesota showed yield increases with Headline SC applications, with greater benefits associated with earlier applications. BASF also discussed a new liquid formulation of **Facet** herbicide for use on rice. This new formulation is a true liquid, not just a slurry. It has improved handling convenience, mixes easier and provides enhanced weed control over the dry formulation.



ABBA Ultra is a new, more concentrated formulation of abamectin. **MasterCop Fungicide** is a new formulation of copper sulfate pentahydrate that forms a solution instead of a suspension. MANA's new formulation of lambda-cyhalothrin, **Paradigm**, has reduced odor, is not irritating dermally and has a caution signal word. For glyphosate resistance management, MANA offers three residual herbicides that are included in the Roundup Ready Program. They also offer formulation of the herbicides 2,4-D and metribuzin, and of the fungicide thiophanate methyl.



Bayer also introduced a new fungicide, **Proline**. Proline is a triazole fungicide that stops diseases present at the time of application and prevents new infections from occurring after the application is made. It can be used to treat a number of disease pests on a wide variety of crops. Also new is **Stratego YLD**, which features the newest triazole chemistry for the corn and soybean market and more strobilurin. It is available as a water-based SC formulation. Both of these products can be used to treat white mold in soybeans.

Editor's Note: This is the first article in a two-part series summarizing the research work presented at the 2011 ASABE/NAAA Technical Session.



Forest Protection Limited Managing Director David Davies was one of 11 presenters at the ASABE/NAAA Technical Session in Las Vegas. The take-home message of his and other presentations will become clear in *Agricultural Aviation's* two-part summation of the ASABE proceedings.

Agricultural Engineering at Work

Recapping ongoing aerial application research from the 2011 ASABE/NAAA Technical Session

*By Scott Bretthauer, Ph.D.
University of Illinois, Application Technology Extension Specialist*

The American Society of Agricultural and Biological Engineers (ASABE) is an educational and scientific organization that works with engineering related to agricultural systems. ASABE has various committees that focus on different aspects of agricultural engineering. Most of these committees meet and have their technical sessions at the annual ASABE international meeting. The Aerial Applications Committee, however, holds their technical session at NAAA's Annual Convention in order to better reach those who can benefit the most from the current projects. The goal is to not only share information with other members of the committee, but also with aerial applicators themselves.

The ASABE Technical Session at NAAA's 2011 Convention & Exposition in Las Vegas featured presenters from eight institutions, including the USDA-ARS Aerial Application Technology Group, the University of Illinois,

Forest Protection Limited, Bayer CropScience, Louisiana State University, USDA-ARS Stoneville Research Center, Wolf Consulting & Research and Arena Pesticide Management. Each presentation is usually written up as a scientific paper. The presentation and papers will be available soon from a link on NAAA's website at www.agaviation.org/content/asabe-technical-session-program and directly at apmru.usda.gov/aerial. For those unable to attend the ASABE/NAAA Technical Session, brief summaries of the research projects presented are being provided in *Agricultural Aviation*. The summaries for the first five presentations follow; the remaining six presentations will be summarized in the next issue.

Aerial Application Research Updates and Smartphone App Demonstration

Authors: Hoffmann, W.C., B. Fritz, Y. Lan, D. Martin and J. Lopez Jr.

Presenter: Clint Hoffmann

The USDA-ARS Aerial Application Technology Group (AAT) provided an update on current and future research projects. The group recently acquired an MD600 helicopter, which will be fitted with a spray system. This will allow them to conduct research with helicopters in addition to the work they do with fixed-wing aircraft. They are interested in hearing from helicopter pilots about questions and issues that may be of interest for research. Research using AAT's new high speed wind tunnel continues, with updates to the current spray nozzle models and work with active products and adjuvants being key focal points. AAT's goal is to provide data on

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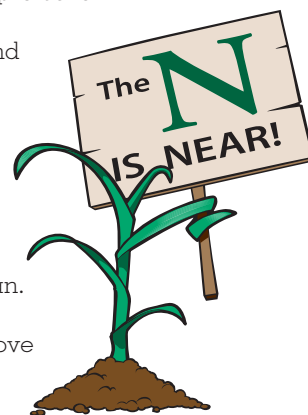


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Yubin Lan of the USDA-ARS Aerial Application Technology Group discusses the potential for aerial applicators to greatly expand their service offerings as new and existing precision aerial application technologies emerge and improve.

droplet sizes for higher speed aircraft, as well as what happens to the droplet size when pesticide products and adjuvants are added to the spray mix.

As the EPA's Drift Reduction Technology (DRT) program moves forward, the Aerial Application Technology Group plays a key role in conducting the field and wind tunnel studies that will provide the data for DRTs. Insecticide research focuses on maximizing efficacy, with targeted pests including corn earworm and the brown stink bug.

A recent product from the group is spray nozzle model smartphone apps for iPhone and Android phones. These apps allow aerial applicators to quickly and easily determine the droplet size of various nozzle setups using their smartphone. The user enters application parameters including nozzle type, fixed or rotary wing,

orifice size, deflection angle, pressure and application speed. The results can then be viewed immediately, saved for future reference or emailed to someone else. To download the app, go to iTunes (for the iPhone) or Android Market (Android phones) and search for "Aerial Sprays." The Aerial Application Technology Group is always interested in hearing from aerial applicators about research needs. Please contact them at aerialapplication@gmail.com if you have comments, suggestions, or questions. You can also visit their webpage at apmru.usda.gov/aerial.

TAKEAWAY: The USDA-ARS Aerial Application Technology Group is working hard to provide aerial applicators with the information and tools they need to increase the efficacy and safety of aerial applications. New tools include a spray nozzle model smartphone app.

Precision Aerial Application: Past, Current and Future

Authors: Lan, Y., and W.C. Hoffmann

Presenter: Yubin Lan

Precision agriculture involves the use of various technologies with the goal of optimizing agricultural operations. Precision aerial application includes satellites, airborne remote sensing, GIS/GPS and variable rates. The goal is to improve the accuracy and efficiency of aerial applications, which will benefit both the applicator and the farmer. The USDA-ARS Aerial Application Technology Group is currently working on a method to convert aerial images into application maps, which would serve as a new service for customers. The goal is to create application maps that could be easily uploaded into the spray system computer to make variable

rate applications of pesticides and fertilizers. The maps would be created using a multispectral camera fitted onto the aircraft. Since agricultural aircraft already fly over numerous fields, these cameras could be used to detect crop diseases, water stress, nutrient deficiencies and other adverse crop conditions on fields flown over while spraying or ferrying. In short, the goal is to turn an agricultural aircraft into a remote sensing platform.

Current projects related to this goal include an evaluation of the PhotoNav system from AgNav, using a thermal imaging camera for detecting crop problems, and developing an integrated crop model with remote sensing. This system would be used to generate prescription maps for variable rate applications of products, applying products at the locations and rates they are needed. The project also includes ground truth measurements to make sure the data is accurate. The future goal of the project is to bridge the gap between remote sensing and variable rate application by creating a system that rapidly analyzes the images and creates prescription maps in real time.

TAKEAWAY: USDA-ARS is working on a project that would allow aerial applicators to use their aircraft as remote sensing platforms to generate prescription maps for variable rate applications.

Evaluation of Swath Uniformity and Deposition in a Corn Canopy

Authors: Bretthauer, S., R. Wolf, B. Fritz, W.C. Hoffmann, P. Jank
Presenter: Scott Bretthauer

The objective of this research project was to determine how aircraft height, swath width, weather conditions and spray solution impact the uniformity of application. In order to mimic real-world applications, the test was conducted in a corn field instead of over an area with no crop. An AT-502B, previously pattern tested to determine its optimum swath, was flown at normal (around 10 feet for an AT-502B), low (5 feet) and high (20 feet) application heights. Optimum, narrow and wide swath widths were tested at the normal application

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Scott Bretthauer of the University of Illinois (top photo) and Dan Martin of the USDA-ARS Aerial Application Technology Group (above) discuss their evaluations of swath uniformity and deposition in corn and VeriRate Nozzles, respectively, with attendees.

height. Tests were conducted in the middle of the afternoon and early evening. For one set of early morning tests, crop oil concentrate (COC) was added to the spray solution. Application uniformity was measured on a monofilament line run across four swaths in the corn. Results show that flying at a normal height did provide the best application uniformity. Flying lower or higher than normal did decrease uniformity, but not by a great deal. Narrowing up or widening out the swath width decreased application uniformity substantially. The use of COC in the morning increased deposition dramatically, but applications made at the low height with COC in the morning substantially decreased the uniformity of the application.

TAKEAWAY: Flying at a normal height and using the optimum swath width resulted in the most uniform applications; flying too low with crop oil concentrate in the spray decreased uniformity.

A Preliminary Evaluation of the VeriRate Nozzle

Author: Martin, D.

Presenter: Daniel Martin

The VeriRate nozzle is a flat fan nozzle with a variable exit orifice designed to provide the wide flow rate range needed for making variable rate applications. The purpose of this USDA-ARS Aerial Application Technology project was to test the performance of the VeriRate nozzle to determine how accurate and uniform the flow rate was across multiple nozzles. The test involved 48 separate nozzles, each tested at five pressures with the flow rate measured using a digital flow meter. The first series of tests started with the lowest pressure and revealed considerable variation in flow rate among the individual nozzles at pressures below 60 psi. A second series of measurements was conducted by spiking the pressure to the highest level used in testing, and then reducing pressure for each series of flow rate checks. In this case, the variability in flow rate among the nozzles was reduced, but was still high at 30 psi.

The researchers contacted the manufacturer to discuss the high flow variability and were informed the original nozzle had been redesigned. They acquired six of the new nozzles and tested the new nozzles for flow rate accuracy and variability in the same manner as before, except they weighed the liquid output from each nozzle test instead of using the digital flow meter. These tests revealed the new design provided more uniform flow rates among individual nozzles. Spiking the pressure to the highest level first and operating at pressures above 50 psi still reduced flow rate variability, but variance was below 10% for all tested conditions. There was considerable difference between



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measured and published flow rates. Droplet size testing revealed that the droplet size was only nominally changed by changing pressure. The change in droplet size with change in pressure was greater at lower speeds.

TAKEAWAY: The new design of the VeriRate nozzle can be used to make variable rate applications with minimal variation in nozzle flow rate across the boom.

Increasing Spray Efficacy: An Integrated Approach

Author: Davies, D.
Presenter: David Davies

This was a five-year project with three main objectives focused on increasing the accuracy and efficacy of aerial applications to forests. The three main objectives were to enhance droplet size measurement, develop a decision support system and improve

existing aerial application technologies for maximum on-target deposition. Technologies utilized were a wind tunnel, decision support system, auto boom and flow control, aircraft based real time meteorology measurement, AGDISP spray deposition modeling and offset spraying. The wind tunnel provided droplet sizes for specific spray solutions using actual products. This data was combined with meteorological and height data in the Aerial Management System that provided for offset spraying.

The goal was to improve on-target accuracy by taking into consideration droplet size, weather conditions and application height and then off-setting the application flightlines to take into account droplet movement as determined by the Aerial Management System. Various field studies were done to compare optimized off-set spraying with standard spraying. This testing revealed that the optimized off-set spraying increased the amount of spray deposited in the target area. Off-set spraying provided an average deposit of 71% of the label rate to a treated block, whereas spraying with no correction provided an average deposit of 61% of the label rate to a treated block.

TAKEAWAY: New technologies allow aerial forestry applications to be made with off-set spraying, increasing deposition within the target area.

Look for more summaries from the ASABE/NAAA Technical Session in the next issue of the magazine. ■



Onlookers listen intently as ASABE presenters share their research findings.

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TECH BEAT:

Neat Stuff Observed at NAAA 2K11

What was new and cool in terms of technologies on display at the 2011 NAAA Convention & Exposition? Here are three things that caught our roving reporters' eyes.



Spray Nozzle Models? Yeah, There's an App for That

With more and more aerial applicators embracing the use of smartphones, it's only fitting that they have an app of their own, and now that the Aerial Application Technology Group (AAT) has released a set of mobile device applications for Apple iOS and Android based devices, they do. In Las Vegas, AAT touted the release of two applications, or "apps," that incorporate the USDA-ARS Spray Nozzle models into a PC-free user interface. Once downloaded, the apps do not require a wireless or mobile data connection for use, which means pilots can calculate relevant droplet size data instantly in the palm of their hand from a mobile device.

According to NAAA's 2011 Communications Services Survey, 58% of respondents use a smartphone as their primary mobile device. This includes an even split between iPhone and Android users at 23% each. The AAT apps are available on the Apple iTunes App Store and the

Android Market using "Aerial Sprays" as the keyword search.

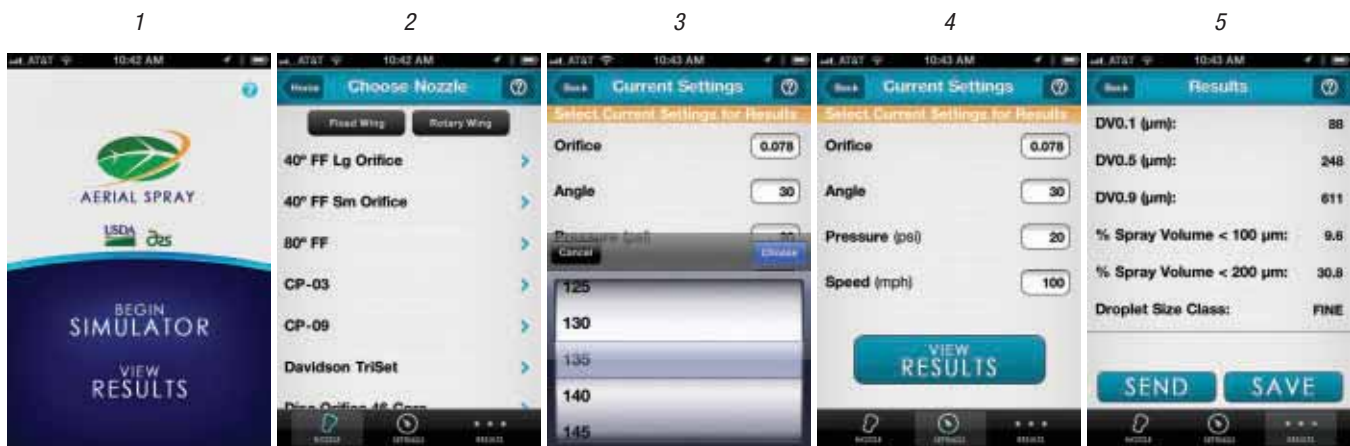
In the Aerial Sprays app, users are walked through a series of screens and prompted to select nozzle type and operational conditions (i.e., orifice size, spray pressure, nozzle orientation and airspeed). The resulting droplet size data is shown along with buttons allowing the user to email the specifications to any address or save it to the mobile device for later reference. Each interface page has a help screen that provides users with guidance on the information requested or presented on that particular page.

A second app (Vector Sprays) was designed for users of hand-held, truck-mounted, thermal and ULV sprayers targeting mosquitos and other insects that vector human and animal diseases. Users can select their specific sprayer, input their operational parameters and spray material and determine what size of spray droplets are being released from the sprayer. This app was

developed jointly by the USDA Agricultural Research Service (ARS) and the Department of Defense's Navy Entomology Center of Excellence in Jacksonville, Fla.

The help screen available on the startup page for both apps contains links to the Aerial Application Technology Group's website and its group email. Please direct comments, suggestions or questions to aerialapplication@gmail.com. AAT is actively seeking comments and feedback from users of the apps to learn from their experiences.

"We anticipate that as you begin to use these there will be a need for additional and improved user interface as well as requests for additional functionality," said Brad Fritz, agricultural engineer with the Aerial Application Technology Group. "We plan to continue to support and upgrade these apps over the coming years, but ask for your patience as these updates will likely be on an annual or biannual affair given the costs associated with further development."



These screenshots illustrate the user interface of the Aerial Application Technology Group's new "Aerial Sprays" spray nozzle app. The apps are available on the Apple iTunes App Store and the Android Market by searching "Aerial Sprays." 1) App homepage, where a new set of spray nozzle data can be generated or saved results can be viewed. 2) Nozzle Selection page: Users select either Fixed or Rotary Wing, followed by the nozzle of their choice. 3) Parameter-setting screen with airspeed selection wheel visible. User's select the orifice, angle, pressure and airspeed. 4) Parameter-setting screen with selections made for each of the nozzle parameters. 5) Results page with nozzle droplet size results. Users can save their results or email them.

Are Night Vision Goggles Ready for Primetime Aerial Application Work?

Another intriguing product demoed at the convention was Aviation Specialties Unlimited Inc.'s night vision goggles (NVG). The concept of NVG is not a new one to aviation. The military especially and some civilian aviation have been using the technology for years; up to this point, however, it has not been a good fit for nighttime

aerial application work due to resolution problems inherent to NVG. The difference now is the quality of the image produced and the resistance to exposure from unexpected light sources. Operators report they have been able to operate with NVGs and night operating lights to make obstructions like wires very visible.

After observing their demonstration, this technology may have a very real safety application

in the aerial application industry. Operators that extensively apply at night should investigate this technology. Nighttime aerial applications are made in areas where foraging bees and field workers may be present during the daytime. There are certain challenges that must be overcome with the FAA aircraft lighting modifications and training but that can be accomplished.

New Satloc G4 Features Wireless Internet, Remote Access, Skype Capabilities and More

Hemisphere GPS introduced its newest product for aerial applicators, the Satloc G4, at NAAA's Annual Convention. The G4 features an Intel® Dual-Core™ i7 processor and uses the Windows® 7 64-bit operating system. It comes with a 4 GB of RAM, and has the option of including 32 GB of built-in storage on a Mini SATA drive. It has a 9-inch 16:9 ratio touch screen that supports multi-touch gestures including pinch-to-zoom and uses a Crescent receiver. The G4 has 4G wireless Internet connectivity. Access to the Internet allows for job and log files to be sent to and from the aircraft wirelessly. Field polygons can be created on the ground and then sent to the system.

Internet connectivity also allows remote access to the G4 system. The pilot has to accept whoever wants access, but then that person can make changes to the system and troubleshoot any problems that might be occurring. The Internet connectivity also allows the use of Skype. Again, the pilot must accept anyone trying to communicate through Skype. The goal with these features is to assist pilots with any issues they might be having with the G4 system, allowing them to get the help and advice they need quickly, so they can solve the problem and spend more time and effort concentrating on the application and not the GPS unit. The G4 has auto half-boom shut off. It is able to import both shape and klm files. Any shape file can be loaded onto the system and then run as the background map, improving an aerial applicator's navigational awareness.

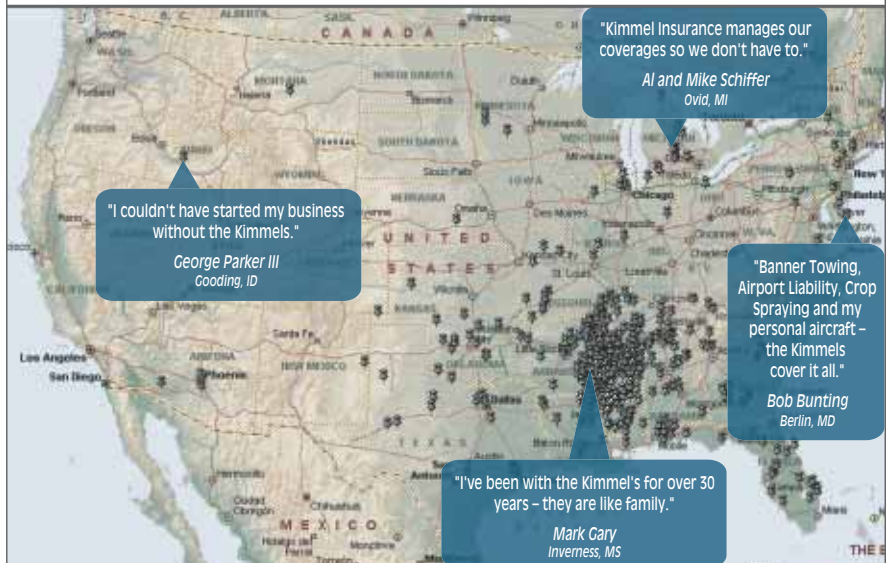
The G4 also supports HQ, a web-based tracking software that provides real-time location information and ETA's for aircraft, loader trucks and other vehicles. Latitude, longitude, altitude and other data can all be reported back to the base of operations. The system can be setup with incomplete/complete jobs, allowing for job

management and coordination among multiple aircraft, and data can be passed aircraft to aircraft.

There are smartphone apps available for handling communications with the G4 system. Live weather information will be available on the G4 through XM weather. This will allow the aerial

applicator to have firsthand knowledge of current and future weather conditions, allowing them to make better and safer choices when making applications. The Satloc G4 system includes the touch screen, the central processing unit (CPU), A21 antenna and external CAN lightbar. ■

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AND THE NAAA AWARDS GO TO... From left to right, back row: Outstanding Service Award recipient Rod Thomas; John Robert Horne Memorial Award recipient Billy Whitfield; Bob Howard, who accepted a plaque on behalf of the late John E. Dorr, who was inducted into the National Agricultural Aviation Hall of Fame; Larsen-Miller Community Service Award recipient Loren Dannhaus. Front row: Allied Industry Individual Award recipient John Garr; Larsen-Miller Community Service Award recipient Grant Lane; John Robert Horne Memorial Award recipient Nick Richter; Opal & Bill Binnion Memorial Award recipient Judy Chanay; Outstanding Service Award recipient Carolyn Baecker; Most Active Woman Award recipient Jayne Rucker; and William O. Marsh Safety Award recipient Robert McCurdy.

NAAA AWARD RECIPIENTS FETED WITH AN EVENING OF ELEGANCE, PROFILES IN EXCELLENCE

It was a fitting coda to a historic convention. For a few hours on the evening of the last day, the setting for the final affair of NAAA's 2011 Convention felt more like Hollywood's Kodak Theater than a hotel ballroom. The Farewell Awards Banquet had all the pageantry, humor and drama of a Hollywood awards show.

A moving tribute in honor of the late Leland Snow, who invented the modern ag plane, set the tone for the evening, and the awards ceremony followed suit. Rod Thomas and Leif Isaacson hosted the 2011 Awards Ceremony, which celebrated the achievements of 10 individuals. It was a special night for the family of Leland Snow and everyone affiliated with Air Tractor Inc. and an affair to remember for the recipients of the 2011 NAAA Awards.

Many of the honorees bared their souls during impromptu acceptance speeches that were more emotional than perhaps some intended or expected them to be. The unscripted nature made it all the more real and appropriate. Not everyone pulled a Sally Field¹, though.

Judy Chanay gets credit for the night's shortest speech. Her acceptance speech consisted of two words: "Thank you." As you'll learn from her good friend Kathy Diehl such modesty and humor is very much in keeping with Judy's personality. Kathy is one of a handful of friends and colleagues *Agricultural Aviation* recruited to help readers get to know the NAAA Award honorees better. They all have great stories, and we're glad they agreed to share their insights about these noteworthy individuals. If the Awards Ceremony was the coda, this is their curtain call. —Jay Calleja, *Manager of Communications*

¹ Sally Field won the Oscar for Best Actress in 1985 for her performance in "Places in the Heart." She punctuated her acceptance speech by declaring, "And I can't deny the fact that you like me—right now! You like me!!!" The famous Oscar moment is available for posterity on YouTube at www.youtube.com/watch?v=rl_NpdAy3WY.



2011 ALLIED INDUSTRY INDIVIDUAL AWARD

JOHN GARR

Garrco Products Inc.
Converse, Ind.

Service with a Smile

By Scott Bretthauer

University of Illinois, Application Technology Extension Specialist

I am proud to call John Garr, owner of Garrco Products Inc., both a fellow professional involved in agricultural aviation and a friend. I first met John in 2003 at the Operation S.A.F.E. Analyst training. John is one of those people you immediately know is a fun and friendly guy to be around. He is always smiling and easily finds a way to interject humor into even the most stressful of situations. Over the course of the training, I talked with John frequently about various things related to aerial application and realized he had a strong passion for the industry. I also realized he was fun to pick on. If you know John, though, you already knew that.

John is very dedicated to aerial application and is a true believer in the quality of work that can be done with an agricultural aircraft. An ardent proponent of Operation S.A.F.E., he has assisted me at many of my fly-ins and is fantastic help. Able to handle any duty, John can switch from running the flightline to running the fluorometer with no problems. I always feel comfortable leaving John in charge of various aspects of a fly-in because I know how seriously he takes the work done there and that he will make sure things run smoothly and accurately. He is always ready to help with other projects as well whenever the need arises.

Garrco Products develops products focused on adjuvants and additives for pesticide applications, and John works hard to make sure his customers understand how his products work, which ones will be the best choices for their applications and how to use them correctly. He spends a great deal of time and effort testing his products, which I feel is a strong indicator of his professionalism and dedication to improving the aerial application industry.

As further testament to his dedication, John spends an extraordinary amount of time on the road for his business. At a recent meeting he was talking about some of his recent travel exploits. He followed up by showing me some pictures of his home in Indiana on his cell phone. I quickly realized two things: one, he travels more than anyone else I know, and two, he needs a picture of his house with him so he doesn't forget what it looks like.

In all seriousness, John is a great guy to work with. His energy, enthusiasm and dedication make him fun to be around and ensure a high quality experience for whatever project he is involved with. John is very deserving of the Allied Industry Individual Award, and I would like to congratulate him on receiving it. ■

Scott Bretthauer is a PAASS presenter and Operation S.A.F.E. Analyst. He received the Allied Industry Individual Award in 2009. The award is presented to one or more persons who have contributed significantly to the allied industry, their exhibit efforts and NAAA.



2011 OUTSTANDING SERVICE AWARD

CAROLYN BAECKER

The CP Products Company Inc.
Tempe, Ariz.

Her Service to the Industry is Always on Target

By Dennis Gardisser
WRK of Arkansas LLC, Lonoke, Ark.

I don't know when I first met Carolyn. It seems like she has been on the scene just as long as CP nozzles have been popular. I have spent countless hours with Carolyn at fly-ins, agricultural aviation committees and meetings, industry and regulatory meetings. Carolyn has always provided candid and constructive comments at all these venues.

As the president of CP Products, Carolyn truly understands the aerial application industry and works to make CP's nozzles innovative and beneficial to the applicators that use them. She has told me numerous times she realizes that CP nozzles may be the last mechanical component to see the spray solution on its way to the target. Her leadership in development, production, marketing and sales of CP nozzles has made them one of the most utilized and innovative products ever introduced into the industry.

Carolyn has told me being involved in Operation S.A.F.E. fly-ins and other associated meetings has really helped her target the nozzle needs of agricultural aviators. Nozzle designs influenced by Carolyn have received prestigious design awards by the American Society of Agricultural and Biological Engineers (ASABE).

Carolyn always seems to seek additional knowledge about this industry. She has helped sponsor several Operation S.A.F.E. training schools, has attended at least five of those sessions

personally and has enrolled many of her staff in those schools as well. Her latest huge contribution included 12 scholarships to the 2011 school for students from all around the U.S., Canada and New Zealand. Carolyn is one of the few very active certified S.A.F.E. analysts. She has helped me and many other analysts conduct successful S.A.F.E. workshops.

Carolyn has ramped up the availability of useful information on CP's website, www.cproductsinc.com. CP is a small but well-staffed company where you can actually get a competent, live person on the phone when calling for assistance—many times it is Carolyn. Carolyn has worked with the USDA-ARS group in College Station to obtain model data on all of CP's nozzles. That information along with numerous calibration tools and an archive of many other useful tidbits is available on CP's website.

Carolyn sincerely wants the agricultural aviation industry to do the best and safest job possible. She has sponsored the CP Products enhancement breakfast at the NAAA Convention for the last 18 years, and I have personally helped with those presentations for 15 years. There has never been any directive on what to present other than to try and cover the issues that might make applications better, regardless of whether the products being discussed were CP nozzles or other nozzle and equipment issues.

I value Carolyn as a true friend to both me and the agricultural aviation industry. Her long-term willingness to serve agricultural aviation on a number of different fronts is truly outstanding! ■

Dennis Gardisser is president of WRK of Arkansas, an Operation S.A.F.E. Analyst, PAASS presenter and frequent collaborator with the CP Products Company Inc.

2011 OUTSTANDING SERVICE AWARD

ROD THOMAS

Thomas Helicopters Inc.
Gooding, Idaho



All Kidding Aside, Rod Thomas is No Joke

By Leif Isaacson
Desert Air Ag, Terreton, Idaho

Ever had a good laugh at an awards banquet? Ever sat in a committee meeting and burst out laughing at an off-the-wall comment? Ever been in front of 200 people presenting a PAASS Program, forget where you are at and someone makes a hilarious comment at your expense? We have all been exposed at some time to Rod Thomas's own unique style of humor.

Despite the jokes, what Rod has done for our industry is no laughing matter. Underneath that self-deprecating sense of humor is a dedicated spokesperson for our industry. Rod is one of the most active members in NAAA and has been a member for 35 years. He has been active at every level of our industry.

In his home state of Idaho, he has been president of the IAAA, active in the Operation S.A.F.E. program and instrumental in education programs for students. Rod and

his brother Dale were awarded Operation of the Year in 1999 by the Pacific Northwest Aerial Applicators Alliance.

At the national level Rod has held just about every office in our association and was president of NAAA in 2007. He is currently president of NAAREF, chairman of NAAREF's Capital Campaign Committee and chairman of NAAA's Long Range Planning Committee. Rod has been an integral part of the development and presentation of the PAASS Program which is recognized as one of the premier safety programs in aviation. He has also served as the Master of Ceremonies at NAAA's Annual Awards Banquet for many years and has never asked for anything in return.

Rod's distinctive style of humor and his excellent communication skills make him well-suited to be the leader he is in our industry. I can think of no one more deserving of the Outstanding Service Award than Rod Thomas. ■

Leif Isaacson is a PAASS presenter and vice president of NAAA and NAAREF. He and Rod Thomas have teamed up on numerous occasions to present the PAASS Program. The duo also emceed NAAA's Awards Ceremony together for the first time at NAAA's 2011 Convention.



Leif Isaacson tweaks Rod Thomas, his good friend and fellow emcee, at the 2011 Awards Ceremony.



2011 MOST ACTIVE WOMAN AWARD

JAYNE RUCKER

Rucker Flying Service Inc.
Burdett, Kan.

I'm Just Sayin'

By Jane Barber

Brett's Spraying Service Inc., Onida, S.D.

When the name Jayne Rucker is spoken it never fails to bring a smile to my face and fun memories begin to play in my mind. The first thing that hits my thought process is Jayne's WNAAA President's Message where she tells the story of "Sweet Young Thing" and "Handsome Ag Pilot." Here's an excerpt of that classic fairytale from May/June 2006:

Once upon a time, in the land of Agricultural Aviation, there lived a "Sweet Young Thing" who married a "Handsome Ag Pilot." When Sweet Young Thing and Handsome Ag Pilot were first married they moved away from the land of Agricultural Aviation, even though the Handsome Ag Pilot had lived there all of his life. They finished their education, worked in a city land and started a family. When the Handsome Ag Pilot's sire decided to retire, Sweet Young Thing, Handsome Ag Pilot and their two "Lovely Princesses" moved back to the land of Agricultural Aviation.

Sweet Young Thing had never lived in the land of Agricultural Aviation, so she was not aware of how life worked in this new land. She did not understand about "spraying season" and what that meant.

The tale goes on from there. This had to have been the funniest story I've ever read and I love to recall it!

That message shows the humorous side of Jayne. She has a serious side too, and that side emanates from her dedication to NAAA and WNAAA. She has been an outspoken advocate of the aerial application industry. In her hometown, throughout the state of Kansas and with each Athena Presentation she gives, you feel the respect she has for the industry. Jayne works hard to ensure the growth and safety of its members and families.

Jayne has been an unyielding presence in the WNAAA. She has organized some notable convention activities for the WNAAA with help of co-chairs of course, but her ideas catch

on and just roll and improve with each convention committee she is on! Her commitment to the Ways and Means Committee and WNAAA booth are unmistakable. With her presence there things remain organized, flowing and fun.

As an Athena Presenter she speaks with such compassion, you can't help but let her take control, and then her hands start to tell the audience just how enthusiastic she is. Her hands! If you tied Jayne's hands behind her back, she'd sputter and fall over! GET OUT OF THE WAY OF THOSE HANDS!

Every WNAAA member who's been in a meeting with Jayne knows when her wrists start to shake in a sweeping motion, arms at waist level, the words, "I'm just sayin'" are going to follow! Then you move onto another subject. I remember at one of my very first WNAAA meetings I thought everyone was supposed to use that hand gesture to move the meeting along! Nineteen years later, you sweep your hand in that motion with no words and you get a laugh and things just move along.

If you've never met Jayne Rucker you are missing out on knowing a truly amazing lady (a mentor to many) who works hard for the aerial application industry as well as for her Handsome Ag Pilot Cary. Seek her out. If you were at NAAA's convention in Las Vegas, you may have seen her cardboard statue on display. The only thing different about that statue is her hands weren't moving!

I'm just sayin'. ■

Jane Barber served as WNAAA's president in 2010 and has served on numerous committees with Jayne Rucker. Jayne Rucker was the WNAAA's president in 2006 and has continued to serve the WNAAA and NAAA Boards of Directors in a variety of ways, including planning and promoting the WNAAA's convention activities. She works with her husband Cary at Rucker Flying Service, an aerial application business in central Kansas.



2011 OPAL AND BILL BINNION MEMORIAL AWARD

JUDY CHANAY

Chanay Aircraft Service, Garden City, Kas.
Garden City, Kan.

A Mentor and Friend to Many

*By Kathy Diehl
WNAAA President*

Have you ever noticed how the most inspirational people never set out to inspire. They just do what comes naturally, and the rest of us wonder how they do it. Judy Chanay is that person. She isn't one to seek out the spotlight, but in her own way she has been a longtime supporter of the WNAAA and its efforts to educate the public about aerial application. Judy is down-to-earth, easy to talk to and courteous to all she meets. She has also been a mentor and a friend to me, and many of us in this industry.

I have known Judy for many years. When I married my husband, it was she who helped me get through that first spray season. When I attended my first convention it was she who let me tag along to meetings and helped me get to know people. When I accepted my position as the WNAAA state director it was Judy who took me under her wing and showed me the ropes.

Over the years I have watched her be the first to volunteer whenever something needed to be done. You will always see her working in the Ways and Means booth and helping with the WNAAA Convention programs. Judy has volunteered many hours with the WKAAA's involvement at Ag Day which is held at the Kansas state capital where over 200 state legislators are in attendance. She, along with husband Doug and son Jeff, participate yearly in the local Farm Bureau

"Friends on the Farm" program where over 400 students from elementary schools in Garden City and surrounding communities spend the morning learning about agriculture. The Chanays bring in two spray planes for a hands-on exhibit, and answer questions about aerial application.

Judy has served many times as president and vice president of the WKAAA and has served as the state director for the WNAAA. She is still very active in the WNAAA attending both the Spring and Fall Board Committee Meetings. In her spare time Judy is very active in her community as a volunteer for the local zoo. In this capacity she works with the education division to provide hundreds of programs to children and adults about zoo conservation.

When not spending time with her children and grandchildren, Judy also loves to travel, scuba dive and ride motorcycles. Just recently she has discovered a new passion, prospecting for gold and other precious metals.

Judy is as light-hearted as they come and always ready with a smile and hello. I cannot think of a more deserving person to receive the Opal and Bill Binnion Memorial Award. Thank you, Judy, for being a friend, a mentor and supporter of the WNAAA. ■

Kathy Diehl is president of the WNAAA. She lives in Garden City, Kan., with her husband Donnie Diehl. Donald is an ag pilot who flies for various operators, including Chanay Aircraft Service. The Opal and Bill Binnion Memorial Award is awarded by the WNAAA to those who contribute to the WNAAA in their efforts to educate the public about aerial application.

2011 JOHN ROBERT HORNE MEMORIAL AWARD



BILLY WHITFIELD

Tim Whitfield Aviation Inc.
Fairfield, N.C.



NICK RICHTER

Richter Aviation Inc.
Maxwell, Calif.

Like Father, Like Son

*By Wayne Slaughter
Wa-Lu Aviation Inc., Farmville, N.C.*

I remember seeing Billy the first time at a meeting of the North Carolina Agricultural Aviation Association and asked who that kid was. I was told he was Tim Whitfield's son and I responded that he will make a good aerial applicator because he is coming from great stock. His grandfather, great uncle, uncle and his dad, all of whom were aerial applicators I have known since I was young and new, were some of the best, both as business people and pilots.

It wasn't long before Billy had gotten out of the military, flown off his time and started spraying in a Cessna. He flew this a while doing a good job and showing great promise. Soon he transitioned to turbines and continued to get better. Billy was doing all this with the support of his wife Heather and now his daughter Savannah May.

For the last two years I have had the good fortune to fly with and lease aircraft from Billy and his father. This has been a

wonderful experience. When I needed any help, guess who was out there to help? Yes, Billy was there to help me out. I got out of the aerial application business for a time while flying a single engine air tanker (SEAT) for the North Carolina Forest Service. I am back doing aerial application, but I was out long enough not to have kept up with the new GPS systems and other new equipment on the market these days. Billy has been a wealth of information to me. He has come to the rescue of "that old man" on many occasions.

Billy is a certified Operation S.A.F.E. analyst and has been through the NAAA/Syngenta Leadership Training Program, which I feel is a valuable tool. He is vice president of the North Carolina AAA and soon will be president. He is a very important part of the business he and his father have. For the short time he has been in the business, he has proven to be a valuable asset in this industry. For that, along with his safety record, he is well deserving of the John Robert Horne Memorial Award. Congratulations to you, Billy. ■

Wayne Slaughter served as NAAA's president in 1996. The John Robert Horne Memorial Award is given to an exemplary pilot with less than five years of ag flying experience.

You Can Go Home Again

By Jay Calleja
Manager of Communications

When Nick Richter found out he was being awarded NAAA's 2011 John Robert Horne Memorial Award, which honors some of the industry's brightest up-and-coming pilots, he was surprised and grateful, but it wasn't the best news he got that day. Nothing can top the birth of a family's first child, but hearing he would be recognized before his peers within the agricultural aviation community made a memorable day even more so for him.

Nick and Jessica welcomed Avery Lynn Richter into the world on the morning of Oct. 8. Later that day, NAAA Awards Committee Chairman Tom Harkin called to inform him he had been chosen as one of NAAA's 2011 Award honorees. To be considered for the John Robert Horne Memorial Award a candidate must have an exemplary safety record and five or less years of experience as an ag pilot. "Getting an award nationally is a pretty big deal," Nick admitted. "I was flattered."

The Journey Home

Nick Richter recently completed his third season as an ag pilot with Richter Aviation Inc. in Maxwell, Calif. He flies for his father Rick, NAAA's 2011 President. Nick grew up around the business and always knew he wanted to be a pilot, but he originally decided to veer away from ag aviation to pursue a career in commercial aviation. He enrolled in Airline Transport Professionals' flight training school in Phoenix in November 2007. He earned his private license in December and his commercial pilot's license the following April. He became an instrument-rated certified flight instructor and also has a multi-engine instructor rating.

During that same period, several major airlines went bankrupt. Suddenly, the market for regional commuter pilots became flooded with more seasoned commercial pilots. "I figured it set me back a good five years," Nick said. So he reconsidered his options.

Nick says it had always been in the back of his mind that he could stick around and work for his dad. A few heart-to-heart conversations with Rick sealed the deal. "He said he'd break me in whenever I wanted to start. So I started and I love it," Nick said.

Rick created a syllabus for his insurance company detailing how they would gradually break Nick into the business. Nick

got his tailwheel endorsement first and then soloed in a Cub and C-185 to gain experience. He soloed the A-model Ag Cat in the spring of 2009 and then learned the Satloc GPS system while doing some light work during the '09 season. He also took the Wayne Handley aerobatic course.

In California, in addition to requiring commercial pilot and pesticide application licenses, new ag pilots must first be licensed as an Apprentice Pilot with the Department of Pesticide Regulation (DPR) and work under the direct supervision of an experienced pilot/commercial applicator. Nick got his own crew and began his apprentice year in 2010. What started as a gradual progression accelerated with each new application he took on. He started the season flying in the A-model Ag Cat and accumulated more than 200 hours in his first full season. He transitioned into the turbine Super B in the fall of 2010.

After 250 hours of flight time, and with the supervising operator's approval, an Apprentice Pilot can take the DPR's Journeyman Pilot test. Nick passed it and California's Qualified Applicator license exam before the 2011 season started. The timing couldn't have been better, since Rick's travel commitments as NAAA President would take him away from the operation on numerous occasions.

"I know some guys roughly my age who haven't even flown a radial engine plane," Nick said. "I feel like I've gone fairly fast, but that's just because at times we needed another full-time pilot and I needed to hurry up and get to the level where I can take over where if my dad goes on trips, we can always have somebody here ready to do whatever job comes up."

As of November 2011, Nick had flown more than 1,000 hours of total time. Most importantly, all of his flying has been accident and incident-free. Nick credits his dad for encouraging him to understand his limits.

"My dad's always said that if you're not comfortable doing something, then you can always get it later or somebody else can get it. There's no point in putting yourself in a situation where you can't get out of," Nick said. "One day last year, it was a little too windy for me and I wasn't real comfortable with it, so I just came back and [dad] got in the plane and finished out the job. The next day I went up in about the same amount of wind and I flew a few jobs and got comfortable with it. It's just taking your time and getting comfortable with your limitations and over time you can push them and get a little better at those certain things." ■

2011 LARSEN-MILLER COMMUNITY SERVICE AWARD

Ready, Willing and Able

By Pat Kornegay

Sun Valley Dusting Company, San Benito, Texas

Grant Lane is known to most folks in ag aviation as the ever-present Air Tractor dealer who is always there at the state, national or international conventions with a warm smile and a firm handshake.

He is also known to many of us as the guy who has shown up on our airstrip in the middle of a hot season, stepped out of his late model Baron in a starched, clean shirt and jeans, broke out the tools and dived into changing a fuel control unit or starter generator that he had brought with him. After putting us back in the air quickly, and with the ever-present smile and handshake, he hops back in his airplane and disappears over the horizon.

His ability and willingness to fly or fix just about any kind of airplane, along with the helpful guidance he has given many an operator and numerous aspiring ag pilots, have made him one of the most recognizable people in our industry.

It is no surprise when several homes in Fort Bend County (Texas) were threatened by a quickly advancing wildfire that Grant and Loren Dannhaus jumped into a couple of Air Tractors and went to work. This can-do attitude resulted in homes being saved, ground firefighters being helped and the general public getting a very positive view of the kind of people who are the norm in agricultural aviation.

The can-do, get-it-done attitude that prevails among the vast majority of operators and pilots in agricultural aviation was on display for the public as a result of the spontaneous actions of Grant, Loren and the ground crew at Lane Aviation. Well done, gentlemen. ■

Pat Kornegay served as NAAA's president in 2001–2002. Grant Lane is the owner of Lane Aviation. Lane Aviation is an Air Tractor dealer, repair and parts shop and aerial application business in Rosenberg, Texas. Loren Dannhaus is Lane's chief pilot. On Sept. 7, 2011, 700 hundred acres of pasture were up in flames in Loren's hometown of Needville, Texas. Grant and Loren helped contain and extinguish the wildfires by making 12 water drops in their AT-502s.



GRANT LANE

Lane Aviation Inc.
Rosenberg, Texas

When You Need a Hand, You Can Count on Loren Dannhaus

By J.D. "Des" Woods
Woods Rice Farm, Katy, Texas

I have been planting and harvesting rice for 47 years. I can't tell you how many different aerial applicators I have used in that time, but without question, Lane Aviation is the best. They are the best organized, they have the best equipment and Loren Dannhaus is one of the best pilots I have ever used.

Loren is Lane Aviation's head pilot and the person primarily responsible for supporting my fields by air. I trust him completely, and I trust him with my crop. And let's face it: All we have is our rice crop to pay the bills. An aerial applicator's work can keep you in business or it can put you out of business, because the margins are very tight in the rice business. So, Loren has a key role. I am always confident when he's flying that the work is being done to the best of his ability.

Working with Loren, you can tell he's a man who is very honorable and ethical in what he does. On several occasions we have almost had an emergency where something had to be done before weather came in. If there was any way to do the job, Loren was there for us. In addition to coming to our rescue, which he has many times, he also is real quick to tell me when it's not a good idea to try to fly.

We have to be so careful and so conscientious about our neighbors. We have a great deal of residential and industrial developments where we farm, so we absolutely cannot risk chemical leaving the premises. Loren is very, very conscientious and will not hesitate to tell us he's not going to attempt an application if he thinks we run the risk of drifting onto someone else's property.

Although we haven't socialized very much, we have a personal relationship in addition to our business association. I consider Loren to be a friend and if I needed him to do something for me personally, I don't have any question that he'd be there—just like he was for the residents of his hometown in Needville, Texas, when several hundred acres were engulfed by wildfires. That's not the first fire he has put out with his airplane and I'm sure it won't be the last.

Loren is dedicated to his craft and to his community. I appreciate everything he does for Woods Rice Farm. I admire him for being a good man and a quality human being. ■

J.D. "Des" Woods is a rice farmer in Katy, Texas, 30 miles west of downtown Houston. He plants 3,000+ acres of rice annually and has been using Lane Aviation's aerial application services since 1990. Loren Dannhaus has been treating Woods' fields for at least 10 years. On Sept. 7, 2011, 700 hundred acres of pasture were up in flames in Needville, Texas. Loren and Grant Lane helped contain and extinguish the wildfires by making 12 water drops in their AT-502s.



LOREN DANNHAUS

Lane Aviation Inc.
Rosenberg, Texas



2011 WILLIAM O. MARSH SAFETY AWARD

ROBERT MCCURDY

Flying Tiger Aviation LLC
Oak Ridge, La.

Flight Lessons Aren't The Half of It

*By E. Edwards Barham
Flying Tiger Aviation, Oak Ridge, La.*

Robert McCurdy and I have been flying and teaching together for 20 years, first at the University of Louisiana at Monroe and more recently at Flying Tiger Aviation.

Robert has done it all in aviation. He was a pilot in the Navy; he owned and operated his own ag operation; he has been a corporate pilot and has run a 141 school. He is certified as a single-, multi-engine and instrument-rated flight instructor. Many people know him from the articles he writes for *AgAir Update*, which are mainly about safe ag operations.

Robert is all about safety and has made it his mission in life to teach ag pilots at all levels how to be better and safer pilots. He developed the ag aviation program at the University of Louisiana-Monroe as a professor there. He wrote the syllabi for the university's basic ag and turbine transition courses, and we still use those syllabi today at Flying Tiger.

He is a terrific pilot and an outstanding instructor, but to leave it at that doesn't do him justice, I'm afraid. Robert is a *mentor* in every sense of the word who has touched the lives of countless students that he has taken under his wing. His students love to hear "sea stories" of his adventures as an ag pilot. Often his stories are laced with hard-learned lessons from his 40 years in the industry that sear into their

minds—dos and don'ts, close calls he has encountered, and how to be a safe pilot in general.

I noticed that the guys who nominated Robert for an NAAA Award were all his students at one time and two of them were instructors here at Flying Tiger. Those of us who know him best know what a huge asset Robert McCurdy is to our industry and Flying Tiger Aviation. ■

Edwards Barham owns Flying Tiger Aviation. Robert McCurdy has been chief flight instructor at the ag flight school for the past 13 years. They have been friends and partners for two decades. The William O. Marsh Safety Award recognizes significant achievements in safety, safety education or an outstanding operational safety program.



Robert McCurdy has trained hundreds of students not only at Flying Tiger Aviation but in Central and South America as well.

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Editor's Note: *This is Part 2 of a three-part series on succession planning. Part 1, "Five Keys to Planning Success," appeared in the November/December 2011 issue.*

*By Kevin Spafford,
Legacy by Design, Chico, Calif.*

Proper Planning Puts *You* in the Pilot's Seat

Hang up your wings and move on to the next vocation in your professional life, retire to a cabin in the woods, take up residence on your boat or spend time with grandkids? Most people romanticize about retirement; at times it sounds like the reward at the end of a long journey. At other times, it seems like a torture of a thousand unknowns. As the operator of an aerial application business, like most business owners, you've spent your entire life nurturing the operation, growing a customer base and managing finances. So the reality of cashing out, stepping away and living a life of leisure is a bit foreign and uncomfortable. But what

if you could in good conscience prepare yourself with a retirement option?

Whether your motivation is a step into the next phase of life, or learning how to control and better anticipate an unknown future, comprehensive succession planning is designed to help. The process empowers business owners to strategize the next steps and it creates options for a wide variety of potential outcomes. It allows you to control the terms and conditions of an ownership transition. It provides financial security for the family. A plan mitigates the estate tax and transfer obligations, and it prepares the next generation (related or unrelated)

to assume the responsibilities of leadership. Properly planning for succession puts you in the pilot's seat; it maximizes your control over both known and unknown circumstances.

For an ownership transition to be effective, it must provide positive outcomes for the owner, the family and the operation. When properly executed, a comprehensive succession plan will offer you options; the final decisions are always up to you. Succession—transitioning your business to a well-prepared next generation—should be a part of your retirement plan. That transition should include financial security,

which allows for peace of mind. It must include provisions to mitigate the estate tax and provide for premature death. A comprehensive plan always includes some method for leadership development. The following four elements will be included in a complete succession plan:

Ownership Transition

This element of the plan details the process for transferring ownership to a well-prepared next generation. It may be as simple as identifying a buyer, then establishing the terms and conditions of the transaction. In most cases, creating the transition plan requires financial planning for retirement, a contingency plan for non-performance and a method of gradual transition. As you evaluate alternatives for ownership transition, maintaining a continuity of management strength will be an important objective for both buyer and seller.

As an experienced owner, you should commit time to helping the next generation transition to the management role. Accepting the mantle of responsibility is a learning process; there is a lot of value and wisdom in experience.

Before you exercise the option to retire, know what you're going to do with your time. Most owners only know work; invest some time now in learning a new hobby, refining your golf game, or planning for your next business venture. Measure each negotiation for the probability of taking the operation back due to default or other non-performance factors.

Financial Security

A well-crafted plan provides financial security for each ownership household dependent on the continuing success of the operation and/or the proceeds from the sale. Each affected family must measure the financial results of the proposed succession plan to

determine the effects on their financial security. Good financial management is imperative for lasting security. All too often business owners become tied to a sale that does not yield long-term positive results or may go sour due to a lack of factors that could have been avoided with some due diligence.


Letting go and walking away is a one-way street. An owner should carefully budget finances, including a real inflation factor. Keep in mind

that medical care increases with age and medical costs tend to inflate at a much higher rate than the economy in general. And, though it's okay to work in retirement, your financial security should not hinge on an ability to perform full-time.

Leadership Development

Most next-generation leaders have a solid education and good experience. Many potential buyers know the fundamentals and perform requisite


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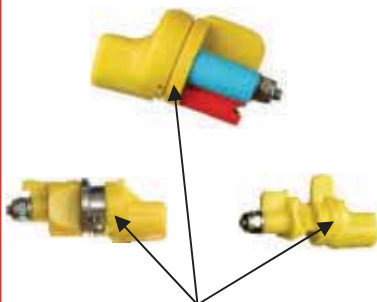


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duties, yet most have not been owners. A plan for developing leadership skills, including business management, team development, project coordination, business design and professional growth, is critical to operational growth and lasting success.

No matter what level of experience a new owner brings to the operation, he or she often struggles with the obligations of ownership. You should be willing to guide the new owner through these early challenges. Helping the new owner learn to work with existing employees will smooth the ownership transition. And, you may suggest a comparable owner (not an adjacent competitor) within the association who is willing and able to mentor your new owner, and help to sort through the unfamiliar quandaries.

Estate Tax Provisions

Common estate planning techniques can compromise the integrity of an operation. An estate tax plan must protect the integrity of the operation, plan for appropriate distributions and mitigate the estate tax liability. It should protect the family from untimely death and ensure your

family's financial security. Above all, your personal estate planning documents should parallel your succession plan provisions.

Many attorneys don't understand the distinctions of succession planning. Make sure you're working with someone who knows and can articulate the differences. Your estate planning documents should reflect your specific goals; they should not be a boilerplate rendition of commonly accepted provisions. It's also vital to ensure the long-term security of your spouse and the family.

You wouldn't take off into a cloud bank across unknown terrain without a plan. Why leave a lifetime of work up to chance? With a little knowledge, a comprehensive planning model and some time you may forestall the unthinkable and plan for the desirable. ■

Kevin Spafford serves as Farm Journal's succession planning expert. His firm, Legacy by Design (Legacy-by-Design.com), works with farm families from coast to coast, guiding them through the succession process. He has a lifetime love of farming and flying. For questions: (877) 523-7411 or legacyproject@farmjournal.com.



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Date	City	State	Aircraft Type	N #	Injury	Description of Accident
05/03/11	New Columbia	IL	OH-13E/M74	38096	None	Hit terrain on takeoff
05/25/11	Lakeville	MN	47G-3B-1	96SH	Serious	Power loss—forced landing on lake
07/21/11	Fergus Falls	MN	AT-502	1516G	None	Power loss—damaged on forced landing
07/23/11	Cambridge	NE	PA-36-375	3963E	None	Failed to climb after takeoff—mixture control leaned
07/23/11	Mount Hamill	IA	A188B	9234R	None	Power loss—damaged on forced landing
07/28/11	Forest City	IA	S2R-G6	331BF	None	Wing hit wind turbine blade on pull-up from field
08/03/11	Washington	IA	S2R	1735S	None	Power loss—impacted terrain near house
08/13/11	Uvalde	TX	AT-402	10119	None	Hit power line during precautionary landing
08/14/11	Edgeley	ND	AT-301	73071	None	Power loss—damaged on forced landing
08/15/11	Oakesdale	WA	G-164B	6628Q	Minor	Tail wind lifted tail on landing
08/16/11	Hardin	MT	AT-401	1012T	None	Power loss—fire damage to compressor section
08/16/11	Ord	NE	A188	9742V	None	Lost control on crosswind takeoff
08/17/11	Pine Bluffs	WY	AT-602	8518Y	Minor	Hit power line
08/21/11	Los Banos	CA	47G-4	948DS	Minor	Main rotor blades hit power pole
08/22/11	Matthews	MO	AT-502B	113AA	None	Lost control on takeoff
08/26/11	Freeport	IL	M-18	7070L	Serious	Impacted terrain after takeoff
08/29/11	Monette	AR	G-164A	48378	None	Power loss—damaged on forced landing
09/01/11	Park Rapids	MN	S2R	8962Q	None	Power loss—damaged on forced landing
10/04/11	Fort Pierce	FL	AT-502B	90805	Serious	Unable to remain airborne on takeoff
11/02/11	Kahlotus	WA	S-2R	1206S	Serious	Hit terrain while setting GPS




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AIRFRAME

Air Tractor, Inc. Back Cover
 Thrush Aircraft, Inc.57

APPLICATION TECHNOLOGY

Agrinautics, Inc.....55
 Auto Cal Flow.....2
 CP Products Company, Inc.76
 Hemisphere GPS59

CHEMICALS

BASF CorporationInside Front Cover
 Kugler Company53
 Syngenta America, Inc.....9
 Wilbur-Ellis Company.....41

DEALER PARTS

BBA Aviation – Dallas Airmotive
 Inside Back Cover
 Desser Tire and Rubber Co.....73
 Farm Air, Inc.58
 Frost Flying, Inc.73
 Lane Aviation, Inc.....78
 Preferred Airparts, LLC.56
 S & T Aircraft Accessories Inc.....45
 Sky-Tractor Supply Company, LLC....45
 Southeastern Aircraft Sales
 & Service.....57
 Tennessee Aircraft Co., Inc.....79
 Tulsa Aircraft Engines, Inc.....73
 Valley Air Crafts.....73

INSURANCE

Davidson Solid Rock Insurance76
 Hardy Aviation Insurance2
 Kimmel Aviation Insurance
 Agency, Inc.61

PROPULSION

Covington Aircraft Engines, Inc.....75
 Prime Turbines55
 Universal Turbine Parts, Inc.....58

SUPPORT

AgriSmart Information
 Systems, LLC. 27, 29
 AgSync, Inc.1
 Central Florida Ag Aero79
 Flying Tiger Aviation.....79
 Professional Fiberglass Repair78
 Zee Systems, Inc.....73

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Continued from pg. 7

proposed include requiring an apprenticeship with a qualified applicator and national standards for retesting applicators every few years to make sure they remain up to speed on issues.

NAAA will be putting together the final touches on its pesticide use survey in the next few months and will be sharing the results with members and the EPA. In the past, NAAA's surveys have shown the actual number of aircraft and acres mixer-loaders service on a daily basis. These estimates have tended to show less exposure risk than what EPA theoretically estimates and such actual data has actually preserved the use of certain products for aerial use.

Another issue that surfaced in 2011 that NAAA has been addressing is the potential interference that could be posed to GPS if the company LightSquared is granted approval by the FCC to establish a network to transmit 4G throughout the U.S. Testing shows LightSquared's broadcast signal interferes with the GPS signal.

NAAA is part of the Coalition to Save Our GPS which consists of GPS users from surveyors to aviators to the defense industry. The coalition is putting pressure on both the Administration and Congress not to grant approval to LightSquared if tests show any disruption to GPS. It appears to be having an effect. FCC Chairman Julius Genachowski has made assurances that LightSquared would not be able to provide commercial services until GPS interference issues were resolved. Congressional appropriations bills have included language prohibiting FCC funding for permitting commercial broadband operations until GPS interference concerns are resolved. This fight isn't over; LightSquared is on record stating it will pursue litigation if FCC does not grant approval.

Positive Developments

Not all proposals coming out of the regulatory agencies were troublesome. After many years of urging the FAA to help protect low-level aviators from unmarked towers, last June the Agency released an advisory circular (AC) for marking meteorological evaluation towers (MET) of less than 200 feet above ground level. The AC stated METs should be painted with alternate bands of aviation orange and white paint and replaced when faded or otherwise deteriorated; METs should have high visibility sleeves installed on the outer guy wires of METs; and METs should have high visibility spherical marker (or cable) balls of aviation orange color attached to the guy wires.

Most of NAAA's recommendations were accepted by the FAA except for those requesting lighting on the tower and the creation of a national database informing pilots where these low-level obstacles are located. Not to be deterred, NAAA was successful in obtaining language introduced by U.S. Rep. Neugebauer in the House-passed version of the FAA Reauthorization Bill for the FAA to study the development of an online public resource listing the locale of low-altitude aviation obstructions, such as guy-wire and free-standing towers. The House and Senate are currently attempting to reconcile their differences between the two different versions of the FAA Reauthorization bills each body passed.

NAAA has also been tackling the tower marking issue from a public relations perspective. We distributed multiple two-sided information sheets to NAAA operator members on the dangerous effects unmarked METs pose to aerial applicators and the risk wind turbines pose to aerial applicators treating cropland. These "tower bill stuffers" are intended for aerial applicators to include with the bills they send their customers and were provided to and remain free to all operator members while supplies last.

Other valuable, educational materials NAAA provided to the industry in 2011 to enhance aerial application professionalism included the "50 Ways to Treat Your Pesticide" brochure sponsored by Syngenta, NAAREF and NAAA. The illustrated brochure targets a broad number of key stewardship practices specifically for aerial applicators and was supplied to all ag pilots and operators throughout the country. Another substantive tangible benefit NAAA provided to operator and pilot members was a copy of the *Aerial Applicator's Manual: A National Pesticide Applicator Certification Study Guide*. This 124-page document identifies the essential knowledge and skills an applicator pilot needs in order to competently, safely and legally perform aerial applications and serves as the study guide for the EPA- developed national aerial applicator test. The Agency developed and provided the test to states to use at their discretion a few years ago.

Lastly, NAAA will soon be distributing a DVD to the industry for aerial applicators to share with emergency responders on how to how to rescue a pilot at the site of an ag aircraft accident. Tangible benefits like these show why it pays to be an NAAA member!

Sending the Right Message

NAAA has also been busy this year attempting to positively

influence the media on behalf of the aerial application industry. Unfortunately aerial application isn't always favorably portrayed by the larger media as was the case with the online newspaper piece in the *Huffington Post* last summer titled "Chemical Ag's Flyboys Often Miss the Mark." This piece, not surprisingly, was written by an anti-chemical advocate with the activist group the Environmental Working Group, but nevertheless it was published by a media entity that had a circulation of 35.6 million unique visitors in May of 2011.

Much of the writer's assault was based on an incident last summer captured on a resident's cell phone and released to the media whereby an ag plane was shown flying low and near homes in a subdivision adjacent to a field. The flight was shown on area television stations and covered by local and large city newspapers.

NAAA defended the industry on the *Huffington Post*'s website comment page and urged the industry to do the same via a grassroots calling in the NAAA eNewsletter. The incident raises a new issue for us: smartphone technology and social media can be used against us quite easily and speedily. This is all the more reason to always be on our best behavior and to even perhaps avoid treating a field when bystanders are at a distance but watching. The angle of a camera and its distance documenting an application may give the misperception of a poor application, when that might not be the case. For these reasons it might be best to fly off when nearby bystanders and cameras are present and live to fly and apply there another day.

NAAA is on the frontlines communicating to the national media about the important role aerial application plays in providing a safe, affordable and abundant supply of food and fiber, but this can be quite a challenge, especially when a number of media outlets in the larger markets and national media tend to be ignorant about agriculture and blind to facts and angles not smothered in controversy. This is also true when it comes to another aspect of the media—reality television. This became a reality to our industry when a show called "Dust Up" aired on Canada's History Television channel early last summer.

The show certainly lived up to its name. Many members were outraged over the way ag pilots were being portrayed. We heard from members around the country who expressed concern about the harm a show like "Dust Up" could do to our collective reputation. The Association took a position to avoid participating in such media endeavors and urged members through the NAAA eNewsletter and *Agricultural*

Aviation to do the same. Controversy and showing the not-so-promising sides of human nature are the usual focus of reality television shows. Right now, it's a risky proposition to participate in them, as they could easily perpetuate old stereotypes that we've worked long and hard to dispel.

There was positive coverage of the aerial application industry in the media this past year as well. We worked closely with *Farm Journal* magazine on an article advocating the importance of aerial application and how to find a reputable ag pilot. We also worked with a number of media entities from TV to radio to newspapers on the risks unmarked towers have on our safety and this media attention was likely a factor in both the states and FAA that contributed to finalizing policies that better mark these obstacles. We also were covered in the media on the risks LightSquared's proposed 4G broadband signal could pose on GPS systems used in agriculture. 2011 NAAA President Rick Richter was interviewed on the popular National Public Radio show "All Things Considered," which has a weekly listenership of 13 million, and he spoke with Tom Sullivan of the nationally syndicated Tom Sullivan Talk Radio show about the subject during a broadcast.

Logic would dictate that with reductions in federal discretionary spending there would be reductions in government regulations, but that has not been the case. NPDES permits went into effect as of Nov. 1, 2011.

Another communication service we have long offered but enhanced this past year is our NAAA eNewsletter. The new eNewsletter allows readers to comment on individual stories, take ePolls and move from story to story with ease. Another useful aspect is that it is available in three formats—desktop, mobile and print-friendly. Most importantly, each issue is loaded with original, key, fresh industry stories, whether it is related to government policy affecting ag aviation, new technological developments or industry newsmakers. We've also stepped up its frequency. NAAA surpassed the eNewsletter's previous high-water mark for issues by publishing 42 issues in 2011, up from 26 issues in 2010 and 24 issues in 2009.

Safety Strides

One major shift in 2012 we hope to see is a reduction in accidents. Our award winning PAASS educational program has been successful for over 14 years in reducing accidents by 20.7% per 100,000 hours flown and has resulted in a 26 percent reduction in drift incidents. Sadly, we ended the year with seven fatal accidents and 87 overall industry accidents. The substance of this season's 2011–2012 PAASS Program on weather inversions to avoid drift incidents, as well as accounts from operators on coping with and planning in the event of an accident as part of the aviation safety segment of the curriculum, we seem certain to keep these incidents and accidents trending lower.

Also helping on this front will be our Operation S.A.F.E. program and efforts to modify our Professional Operating Standards Guidelines. NAAA's Board is also considering developing a broad Safety Management System for ag aviation to share with the industry in an effort to further facilitate the downward trend in both ag accidents and drift incidents.

There are many other developments under way at the NAAA Board and Committee level that are designed to strengthen the Association looking into the future. One is an analysis of the current membership and dues structure and the consideration of new member classifications to address consolidation of ag aviation operations occurring throughout the industry. We are also, as mentioned in President Hartz's column, looking to move our headquarters to a larger office facility so we can expand staff size to address the heavy influx of issues affecting the industry and in the event we lose veteran staff to retirement.

Smartphone technology and social media can be used against us quite easily and speedily. This is all the more reason to always be on our best behavior and to even perhaps avoid treating a field when bystanders are at a distance but watching.

Positive Trends

These are just a few key issues, projects and plans of many the Association has been working on over the past 12 months and will continue to advance in 2012. Clearly there are challenges, but there are many positive trends for our industry and American agriculture as a whole:

- Last fall we passed the 7 billion mark in terms of global population and we are projected to grow by another two billion by 2043.
- Commodity prices and overall demand are projected to remain strong in the long-term due to the growing population and middle class.
- Stocks of nearly all field crops are projected to slip in 2012 despite large harvests, thus keeping demand strong and prices high.
- The cheap U.S. dollar and the rising global demand for ag products will benefit U.S. ag exports, especially since GDP growth is expected to rise for our leading buyers of U.S. ag goods—Canada, Mexico, China and South Korea.

High commodity prices resulting from crop demand outpacing crop production will be favorable to aerial applicators in regions with good moisture because farmers will continue to want to maximize their yields and make windfall profits from the high prices. The key is good moisture—Mother Nature must cooperate and she didn't in all areas of the U.S. in 2011. Just ask those folks in the Southern Plains, where there was extreme drought, or in parts of the Midwest and Southeast where there was too much and flooding wreaked havoc.

Other good news for U.S. agriculture is our soils in the U.S., particularly in the middle part of the country, have a 20–25% water holding capacity compared to, say, Brazil which has a 5% holding capacity. Water scarcity is going to be a major issue for agriculture over the next half century as the population continues to boom and demand for water for non-agricultural purposes grows as well. Fortunately, our soil type in the U.S. with a higher water holding capacity will serve in our favor.

I believe the economic and global demographic outlook for American agriculture and our industry's future is positive and will overshadow the challenges we face as long as the NAAA membership, Board, Committees and staff maintain their focus, size and commitment. And there is no sign of that diminishing. It has been going strong for 45, going on 46 and counting years now. Here's to a great 2012 and beyond for our illustrious industry. ■

2011 OPERATOR

John Newton
Air Advantage Inc.
Mt. Pleasant, IA

2012 OPERATOR

Vicki Anderson
Tommy's Flying
Service
Keo, AR

Nick Bunger

Air-Trac Inc.
Pasco, WA

Jeremy Folden
Folden Aviation Inc.
Waldenburg, AR

Kevin Hurst
H & W Ag Services
Ballinger, TX

Carrol Langeland
Hutchinson Ag Service
Menno, SD

Chris Tatro
Cat-Ag Aviation
Madras, OR

Brian Windsor
TLC Flying Inc.
Colfax, WA

2011 AFFILIATED OPERATOR

Jason Perdue
Wilbur-Ellis
York, NE

Dustin Hackney

Valley Air LLC
Caldwell, ID

2012 AFFILIATED OPERATOR

Brad Berentson
Rubbert Aerial Inc.
Westhope, ND

Jay Gilbreath
Hutcherson Flying
Service Inc.
Forest City, AR

Jan Rubbert
Rubbert Aerial Inc.
Upham, ND

Jason Schickedanz
Perryton Aviation Inc.
Perryton, TX

2011 PILOT
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Sicily Island, LA

Matt Kollars
Kearney, NE

Chase Morgan
Kin Co Ag
Jonesboro, AR

John Shearer
Shearer Sprayers Inc.
The Dalles, OR

Greg Leyva
Gregs Crop Care Co.
Wilbur, WA

Jeff Sewald
Longmont, CO

Jesse Farwell
Triple F Flying
Albion, NY

Jason Tucker
Crop Jet Aviation
Hayden, ID

David Birdwell
Katy, TX

2012 PILOT
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Aero Applicators Inc.
Sterling, CO

Jason Conner
Wilbur-Ellis Company
Odessa, WA

Jared Felder
Royal Flying Service
Quincy, WA

Brad Holcomb
Holcomb Aerial
Service
Flora, MS

William Lott
J.R. Helicopters LLC
Zillah, WA

William Lucas III
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Rex Smith
Wilbur-Ellis Company
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Stokes Flying Service
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Thomas Wilson
Desert Air Ag
Howe, ID

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Cropland Air Service
Cortez, CO

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St. Anthony, ID

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Apollo Spray/Airwolf
Filter Corp.
Middlefield, OH

Mike Atwood
Aviation Specialties
Unlimited Inc.
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Alan Hightower
The Trend Group
Clovis, CA

Colin Brown
TracMap Aviation
Mosgiel, OTA
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Component Solution
Muskegon, MI

Linda Kay Nichols
WRK of Arkansas LLC
Lonoke, AR

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Hingham, MT

Zach Keahey
Scott Companies/
Keahey Flying Service
Monroe, LA

Tyler Smith
Traction Marketing
Group
Oklahoma City, OK

Thomas Craft
Lawrenceburg, IN

Matthew Pope
Johnson City, TX

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Canton, IL

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Dusters Inc.
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Donnie Davis
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Hansford Aviation Inc.
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Nicolas Girard
SOPFIM
Quebec, QC
Canada

Wacey Cathey
Bozeman, MT

Rory Goforth
Flagstaff, AZ

2012 WNAAA
Phyllis Howard
Howard Flying
Service Inc.
Clarksdale, MS

Becky Hubler
Valley Air LLC
Caldwell, ID

Test Your Knowledge Answers Continued from pg. 33

1. The correct answer is B. The label may specify the ASABE droplet size requirements for aerial application. The remaining answers apply whether the application is by air or ground. (Aerial Applicator's Manual: A National Pesticide Applicator Certification Study Guide [AA Manual], pgs. 12–13)

2. The correct answer is C. The Federal Aviation Administration is the correct answer when the pilot is operating for hire. Otherwise, a Class III Medical Certificate is acceptable for private (not for hire) agricultural aircraft pilots holding a private pilot certificate. (AA Manual, pg. 10 and applicable FARs) (*Editor's Note: The manual review question on pg. 16 incorrectly refers to the FAA as the Federal Aviation Agency.*)

3. The correct answer is C. Good communications with the ground crew will help prevent the problems presented in the remaining answers. (AA Manual, pg. 30)

4. The correct answer is A. Early morning is generally the best because it is cooler, less humid and wind velocity is lower. However, watch for temperature inversion conditions, a situation which is addressed in the 2011–2012 PAASS Program. (AA Manual, pg. 38)

5. The correct answer is C. The hopper vent should be large enough to accommodate sufficient air passage to prevent a vacuum which would slow down or stop the normal flow of product. Besides during application, this vacuum effect becomes critical when an emergency dump is required. (AA Manual, pg. 45)

6. The correct answer is C. The spiral slipstream created by the propeller causes spray particles to move from the right to the left under the aircraft (assuming standard prop rotation direction). Spray pattern light or heavy distribution is corrected by adding or removing nozzles at the proper locations on the boom. (*Editor's Note: These adjustments and testing are best accomplished at an Operation S.A.F.E. Clinic.*) (AA Manual, pgs. 54–55)

7. 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 gallons/20.2 gallons per minute = 7.3 minutes. (AA Manual, see equipment liquid calibration section, pgs. 65–75)

8. The correct answer is C. All flights should be undertaken using the same attention, care and time as every other flight during that day. Avoid the urge to rush preparation and safe planning to beat darkness and finish "just one more load." (AA Manual, pg. 82)

Trivia Answers

9. The answer is Delta Air Lines Inc. According to the "History" information on Delta's website, in 1924, Huff Daland Dusters was formed in Macon, Ga. The company was the first commercial agricultural flying company. It moved to Monroe, La., and operated from Florida to Arkansas to California and into Mexico. In 1927, it extended ag operations to Peru and also operated a passenger and mail route on the west coast of South America. C.E. Woolman, the principal founder of Delta Air Lines, led the effort to buy Huff Daland and renamed it Delta Air Service for the area it served. In addition to ag, Delta began its first passenger flights in the U.S. in 1929 using Travel Air S-6000B aircraft with a capacity of one pilot and five passengers.

10. NAAA, then known as the National Aerial Applicators Association, was formed Nov. 28, 1966 when its constitution and bylaws were voted on and approved in Las Vegas. Richard "Dick" Reade, owner of Mid-Continent Aircraft of Hayti, Mo., was elected its first president and is still active in agricultural aviation. Farrell Higbee of Loveland, Colo., was hired as the first executive director of the association.



NAAREF President's Message

Rod Thomas

New Year's Resolutions Worth Keeping

It's not too late to add a couple of resolutions to your own personal list. Since it is likely you will fail to keep one or more, to appear to be more successful overall, why not just have more? If you think you might not get rid of that 20 extra pounds you've promised yourself and vowing to be nice to the grumpy neighbor is impossible, consider a few of the following:

I resolve to preflight my aircraft every flight and that can include looking it over at the end of the day. That is a much better time to see if something might be failing because it gives you a longer window to fix a discovered squawk. Grease your own tail wheel and do other minor lubrications. For you airplane guys that gives you a good opportunity to look for wear and tear. For you helicopter guys that is a good opportunity to marvel that all of the big pieces are still bolted together.

I resolve to do my paperwork right away. That means filling out flight logs as loads and fields are flown. The longer you wait to fill out work orders the closer they resemble fiction. Honestly, tell me that you remember exactly when you finished up your fifth load and what the temp and wind was. Don't be like the pilot who once worked for me that when quizzed about the lack of wind speed and direction on his work order replied "I didn't know what you wanted it to be." Also remember, if you are conducting work that falls under the new NPDES PGP you will have to keep extensive records and could be at legal risk if what you write down is inaccurate.

I resolve to spend a few bucks on check valve diaphragms for my nozzles. We are still asking our insurance underwriters to pay for damages resulting from dripping product going to and from our application fields. This is such a simple and inexpensive fix that I am flabbergasted it has to even be on the list. Avoiding damage to non-target crops takes more than flying diligently during the application to ensure the product doesn't end up off target. How sad to use

all of our skills to make a quality application only to cause a problem during ferry.

I resolve to get my aircraft to an Operation S.A.F.E. clinic this year. In addition to what you might learn about your particular setup, it is a good opportunity to rub shoulders with your fellow operators and see what is working for them. I am happy to report that in my state (Idaho) our regulators find so much value in us as aerial applicators getting together for these types of gatherings, they give CEUs for the professional growth they see.

I resolve to demonstrate I am a professional pilot. If you are proud of what you do for a living you should want to be the best you can be at that job. That doesn't mean that you should buzz your farmer friend on his tractor to show off your skills, just the opposite. Hopefully this winter you attended the PAASS Program and you are continuing to study and grow in your profession by getting CEUs. That means reviewing and knowing the rules that govern what you do. We all need to know the local, state, and federal regulations that cover pesticides we use and the way we apply them. It is a lot to know and requires a commitment to stay current.

I resolve to take a little time off for myself and my family. For most of you, it won't be that long before you are hitting it hard on all available days. Try to use those weather delays we all suffer to be a little more visible to the wife and kids. Offer to do things you've been asked to do at home on the next day the wind blows. "Time off" even means taking a little time for just you. All of us do a better job once we have recharged and refreshed a little bit. Engage in that hobby or other "fun thing" you do just for you, it will make you more pleasant to be around. You don't want to be that "grumpy neighbor" I talked about at the beginning of this article. ■

Fly safe,
Rod Thomas



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