





EMBRY-RIDDLEAeronautical University

PRESCOTT, ARIZONA



Featuring:

■ Thunderbirds

Black Diamond

Snowbirds

Jet Team

Wings & Waves Air Show and Alumni Weekend

Wednesday, Oct. 10 Industry/Career Expo

Thursday, Oct. 11 Alumni Registration

Alumni Return to Classes

Friday, Oct. 12 Alumni Registration

Alumni Return to Classes

Alumni Awards Dinner*

....

Saturday, Oct. 13 Wings and Waves Air Show

EagleNight "Millennium Celebration"

Sunday, Oct. 14 Wings and Waves Air Show

*Nominate your fellow alumni for a prestigious award:

www.ERAUalumni.org/awards

Prescott OctoberWest Events

Thursday, Oct. 4 Industry/Career Expo

Alumni Registration

EagleNight "Millennium

Celebration"

Friday, Oct. 5

Alumni Registration Alumni Golf Tournament

Alumni Awards Dinner*

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Saturday, Oct. 6

Alumni Fly-In and Static Display

OctoberWest Activities

For information and to register to attend, visit the eaglesNEST: www.ERAUalumni.org/homecoming2012

FOREVER AN EAGLE

Embry-Riddle Aeronautical University, Alumni Association 600 South Clyde Morris Blvd., Daytona Beach, FL 32114













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On the cover: Embry-Riddle alumni working at The Boeing Company's production facility in Everett, Wash. Photo by Gail Hanusa, Boeing Photographer.

LETTER FROM THE PRESIDENT

There's strength in numbers, and Embry-Riddle alumni are influencing the aviation and aerospace industries with ours.

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Find out what your fellow Embry-Riddle alumni are up to now.



LETTER FROM THE PRESIDENT

Embry-Riddle alumni can be found at the highest levels in nearly every major career field across the nation and world. However, John Paul Riddle and T. Higbee Embry's particular interest in aviation undoubtedly influenced the direction of our university, and this is evident today in our strength in numbers of alumni working in the aviation and aerospace industries.

Since the 1958 creation of NASA, and arguably decades earlier, Americans have been fascinated with space. Embry-Riddle alumni are no exception. Among our more than 100,000 Strong are more than 100 NASA employees, six astronauts, and hundreds more who work for private aerospace businesses. As the U.S. space program evolves to include commercial contracts for low Earth orbit activities, the number of Eagles adventuring into space promises to grow substantially.

Our alumni were involved in nearly every aspect of SpaceX's successful launch and inaugural docking of the Dragon spacecraft with the International Space Station in May (page 16). I commend them for their contributions to this historic commercial feat and look forward to the next accomplishments in space, whether private or NASA-operated.

Embry-Riddle alumni are truly everywhere in this industry, and they often work together to achieve even greater heights. Take for example Leland Shanle Jr. ('92, WW), who along with Sean McDonald ('93, WW), Morris Barnett ('98, WW) and others collaborated with a group of safety scientists and Discovery Channel to pull off a controlled crash landing of the largest drone to date—a 727 airliner (page 8). The experiment promises to transform the way the safety industry equips and adapts aircraft for crash landings, and the assessment of such disasters.

Our alumni are also shaping the future of rotorcraft (page 22); creating business strategies for commercial airport development and operation (page 10); and making an impact on programs such as production and distribution

of the Boeing 787, the Department of Defense's Joint Surveillance Target Attack Radar System and commercial transportation (page 13).

ON CAMPUS

Embry-Riddle continues to improve its infrastructure in support of students and faculty. I am happy to announce that construction of a new College of Arts and

Sciences building for the Daytona Beach Campus has begun (page 5); and a new laboratory building is in the early planning stages for the Prescott Campus. The Jim W. Henderson Administration and Welcome Center is scheduled to open this fall at the Daytona Beach Campus.

Development of the Embry-Riddle Aerospace Research and Technology Park adjacent to the Daytona Beach Campus continues as well. I'm pleased to announce that the State of Florida dedicated \$8.97 million of its 2012–13 budget toward infrastructure improvements at the park. The grant funds will greatly assist the university in laying the groundwork to secure long-term tenants and industry partners. We view the facility as key to our progress in becoming an "entrepreneurial university" that fosters business startups and aids in technology transfer and patent development. The research park will ultimately accommodate more than 600,000 square feet of research, laboratory and office space and is projected to employ more than 2,000 people.

This is, indeed, an exciting time of transformation for Embry-Riddle and for our alumni in the aviation and aerospace industries.

Warmest regards,

John P. Johnson, Ph.D. President and CEO

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ALTIMETER 1

More news and events at Embry-Riddle:

NASA astronaut Nicole Stott ('87. DB) and retired U.S. Air Force Gen. Arthur Lichte were welcomed as members of the Embry-Riddle Board of Trustees.

Samuel Vazquez ('11, DB) ran the 1.500 meter in 3:37.60 at the American Milers Club Series in Indianapolis on June 16. The time earned him a snot on the Puerto Rico Olympic team and set a new record for Puerto Rico.

Associate Professor of Business Administration for the Worldwide Campus Soumia Ichoua was awarded the Core Fulbright U.S. Scholar award for 2012-13.

Daytona Beach **Campus Director** of Athletics Steve Ridder was named NAIA/Southeast Region Athletic Director of the Year by the National Association of **Collegiate Directors** of Athletics.



Professor Jason Kring, second from left, and students, from left, Breanna Goring, Rafael Patrick ('08, '12, DB) and Kadon Kyte use sound level monitors to assess the noise produced by the modified and standard Cessna 172s

Watch More Online

Watch Embry-Riddle's Noise Abatement Procedures video at www.youtube.com/ watch?v=M Lwr14ll1c.

GOOD NEIGHBOR

Students, community get quieter Cessna fleet

esponding to ongoing complaints of aircraft noise from the local community, Embry-Riddle's Daytona Beach Campus recently equipped its fleet of 41 Cessna 172s with quieter mufflers and is working with a propeller manufacturer to develop a shorter, less audible propeller.

"Our goal is to have the quietest training fleet in the nation," says Ken Byrnes ('01, '05, DB), chairman of the Embry-Riddle Flight Training Department.

Central Florida is the largest flight training hub in the world, with flight schools of all kinds generating more than 16,000 pilots a year, according to the Federal Aviation Administration. As one of the largest and best-known, Embry-Riddle tends to receive a majority of the noise complaints.

"Noise has been an issue for a while," Byrnes says. "And it's not just around local airports where people complain; we've had complaints from rural residents as well. In particular, there is an exotic bird farm whose owner claims that noise from our aircraft disturbs his birds' mating rituals."

Acknowledging Embry-Riddle's fleet of 58 aircraft, which average 250 flights a day during the spring and fall semesters, can be noisy at times, Byrnes says it also translates into a strong local economy.

"Embry-Riddle is one of the largest employers in Volusia County and generates a half-a-billion-dollar economic impact annually. That noise equals jobs," he says.

Despite this fact, the university is dedicated to remaining a good neighbor and noise mitigation is and has been a top priority for the university. For example, Embry-Riddle is an active member of noise abatement committees in New Smyrna Beach, Ormond Beach and Deland, which have fixed-base operator airports used by its student pilots. Through this effort, volunteer noise abatement procedures were developed, including a video and an in-flight manual of these procedures. The university produced and distributed the video to more than 100 flight training businesses in the area. The procedures are suggestions for all pilots, but are required for Embry-Riddle's student pilots, Byrnes says.

The university's move to equip its Cessna 172 fleet with quieter mufflers and propellers follows a series of experiments conducted in 2011. Embry-Riddle human factors and systems professor Jason Kring,

in cooperation with the Eagle Flight Research Center, experimental pilot Mikhael Ponso ('03, DB) and a handful of students, pitted an experimental aircraft against one of Embry-Riddle's standard Cessna 172 trainers and measured the noise produced by each during various maneuvers.

The experimental aircraft was modified with two types of mufflers, both produced in Europe, and a shorter propeller with a slightly larger pitch (75–65, in lieu of the standard 76-60).

"When you combined the propeller with the Gomolzig muffler, we saw the largest noise reductions," Kring says.

Compared with the standard Cessna 172, the Gomolzig muffler with the modified propeller resulted in an average decibel reduction of 11.5 to 12 on takeoffs, 13 on touch and gos and 2.7 on flyovers at altitudes of 500 to 1,000 feet. On takeoffs, the modified aircraft essentially reduces overall noise from 95 decibels to 83 decibels, Kring says.

"I would consider a 10- to 12-decibel reduction on takeoffs and landings significant."

Prescott Campus joins Cal Pac Conference

Effective with the 2012-13 school year, Embry-Riddle Prescott Campus athletic teams will no longer compete as members of the Association of Independent Institutions, but as part of the California Pacific Conference.

> Embry-Riddle's conference competition will include volleyball, wrestling, and men's and women's soccer and golf. Additionally, the university will launch men's and women's cross-country and fast-pitch softball during the 2013-14 academic year, and has plans to add men's and women's basketball by 2015.

PRESCOTT EAGLES BRING HOME NIFA GOLD

ALTIMETER

More news and events at Embry-Riddle:

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Men's soccer head coach Dave Gregson and women's soccer head coach Samantha Bohon at the Daytona Beach Campus were honored as 2011 NAIA Coaches of the Year for the Mondo East Region.

Maj Mirmirani, dean of the College of Engineering at the Daytona Beach Campus. was elected a Fellow of the American Society of Mechanical Engineers.

Embry-Riddle earned two top-10 finishes and won best overall collegiate team at the 2012 cross country all-women's Air Race Classic held in June. The Daytona **Beach Campus** team, Marisha Falk ('08, '10, DB) and Danielle Erlichman. placed No. 1 in collegiate competition and second overall. The Prescott Campus team. Kristine Anthony ('10, '12, PC) and Marlene Wessel. placed third in collegiate and ninth overall.



Members of the Prescott Golden Eagles celebrate their championship win at the annual National Intercollegiate Flying Association's Safety and Flight Evaluation Conference in May.

or an impressive eighth time, the Golden Eagles flight team from Embry-Riddle's Prescott Campus beat all competitors at the National Intercollegiate Flying Association's annual Safety and Flight Evaluation Conference (SAFECON) and was named the contest champion.

The flight team from the Daytona Beach Campus also had a strong finish, placing sixth overall out of 34 collegiate aviation teams from around the nation that competed May 14-19 at Kansas State University in Salina.

The Prescott Golden Eagles previously won the NIFA SAFECON championship in 1993, 1997, 1999, 2003, 2005, 2007 and 2008. The Daytona Beach Eagles won the championship in 1992 and placed second in 2009 and 2010.

"Our Golden Eagles won their eighth national championship since 1993—five times in the last 10 years alone—beating the second-place team by nearly 100 points," says Frank Ayers, executive vice president and chief academic officer of the Prescott Campus. "It was an incredible team effort that reflects the excellence of Embry-Riddle's aviation programs."

Prescott team captain Alex Tamsing was the top scoring contes-

tant and the winner of the National Top Pilot award. The team's advisers were Peter Grey ('07, '08, PC) and Jack Panosian ('79, '82, DB), and its coaches were Chris Dolly ('05, PC), Russell Harris ('07, PC) and Thad Short ('09, PC).

"We are extremely proud of the way our young men and women competed in this year's national competition," says Les Westbrooks, aeronautical science professor and adviser to the Daytona Beach team.

The Daytona Beach Eagles were led by team captain Michael Kelly, Westbrooks and Coach Derek Herchko ('09, '12, DB).

CAAL and AIA join forces



Embry-Riddle's Center for Aviation and Aerospace Leadership (CAAL) is partnering with the Aerospace Industries Association (AIA) in an effort to arm aviation and aerospace manufacturers with valuable information. In 2010, the two entities put their collective heads

together to produce the first annual Aerospace Industry Report. The third edition of the report was recently published.

"It's a broad look at the business and economic environment of the manufacturing industry. It doesn't forecast, but it provides an outlook," says retired U.S. Air Force Brig. Gen. Robert Mansfield Jr., executive director of CAAL and one of the authors and editors of the report. "It's basically a service to help small- to medium-sized companies become more globally competitive."

To obtain a copy of the report, email linda.allen @erau.edu.



GRADUATES SOAR INTO AIR FORCE CAREERS

Twenty-nine Embry-Riddle ROTC cadets launched their careers as pilots in the U.S. Air Force in May. At the Prescott Campus, all 13 eligible candidates who applied for pilot slots were accepted. One air battle manager was also selected. At the Daytona Beach Campus, 16 of 21 eligible candidates were chosen to be pilots, and one as combat systems operator.

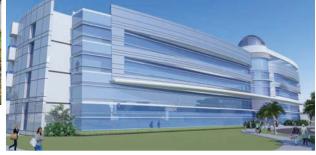
According to university President and CEO John Johnson, Embry-Riddle prepares more Air Force pilots than any other source after the U.S. Air Force Academy, and the Prescott Campus holds the distinction of producing more pilots than any other school or academy in the Southwest.



End of an era

'Alphabet Soup' demolished to make room for new College of Arts and Sciences building

By Kelly Cuculiansky Pratt



he sounds of a track hoe smashing into the Lindbergh Academic Complex on the Daytona Beach Campus in mid-March ushered in a new era for the university. Nearly 100 onlookers gathered to say goodbye to the facility known as "Alphabet Soup" for its alpha-named buildings (A-C, E and W).

Demolition of the first brick-and-mortar academic buildings ever built on the campus began March 14 with university President and CEO John Johnson taking the first few strikes with the track hoe bucket at Building E. While bittersweet for some, razing the five aging hexagonal-shaped buildings and outlying structures cleared the way for a highly anticipated five-story, 140,000-square-foot building dedicated to the College of Arts and Sciences. Construction of the \$39.8 million facility is expected to start in September and could be complete by July 2014.

"These buildings have served a wonderful purpose, but it's time," Johnson says.

University Trustee Emeritus John "Jay" Adams Jr. might be most familiar with the buildings' original purpose. He helped raise \$325,000 in seed money in the late 1960s to build the first three buildings of the \$1.3 million academic complex. Longtime faculty members say the buildings' six-sided design was then-university President Jack Hunt's way of ensuring a distinctive look from the air;

however, Adams recalls that the shape was

selected for a different reason. "[Hunt's] idea was to use the space as efficiently as possible. I think he also probably liked the idea of it being unique and different because he liked to be cutting-edge," he says.

Humanities and social sciences professor James M. Cunningham is wellacquainted with Alphabet Soup. He began his career at Embry-Riddle four decades ago in 1969, soon after Building A opened. Other than one dormitory and the militarystyle Quonset huts used for classrooms and offices, "there was literally nothing else [at Embry-Riddle]," Cunningham recalls. After working in other buildings as an administrator, his journey at the university came "full circle" in 2011, when he returned to teaching and to his old classrooms in Building A. "As my son likes to tell me, I've outlived brick and mortar," Cunningham quips.

Former Senior Class Council President Shawn Polke ('12, DB) was among the last group of students to attend courses in Alphabet Soup classrooms. The rooms dif-

fered greatly in temperature, made it difficult to view the instructor and gave people the impression that they were inside "an acute triangle," he says. Despite its quirks, Polke fondly remembers the pavilion in the Alphabet Soup courtyard as a place that fostered friendships. "A lot of times when I didn't have back-to-back classes, I'd sit at one of the benches there and start doing homework, and that's actually where I made a lot of my friends," says Polke, now a graduate student in the College of Business.

While Polke and Cunningham admit they had mixed emotions about demolition day, Cunningham says the buildings' demise was inevitable. "The university is a forward-looking and forward-moving entity and unlike many universities that have classic buildings that were built in the early 1800s. ... Embry-Riddle is not in that mold," he says. "We are dynamic in many ways, so taking it down only made sense in order to progress."

In addition to classrooms, labs, and faculty and office space, the new College of Arts and Sciences building will feature the largest telescope in the state of Florida to support the university's new bachelor's degree in astronomy, launching in spring 2013.



More Online

To view a slideshow of Alphabet Soup over the years, including its demolition, visit www.eraualumni.org/alphabetsoup.



The Brazil Connection

Personal memories enhance institutional history

BY SARA WITHROW

y early 1942, World War II was in full swing. Hitler had declared war on the United States, and the first U.S. troops had arrived on the British Isles. In August of that year, Brazil officially entered the war, aligning itself with the Allies and its North American neighbor.

To assist in the development of the country's young air force, Brazilian Air Minister Joaquim Pedro Salgado Filho visited Embry-Riddle's Aviation School in Miami and appealed to founder John Paul Riddle to develop a similar school in Brazil. In November 1943, Riddle established the Escola Técnica de Aviação (ETAv) in São Paulo to train Brazilian cadets in basic aircraft construction and maintenance. With support from the Brazilian and U.S. governments—the latter of which provided equipment via the wartime Lend-Lease program-the school accommodated up to 2,300 cadets in its heyday.

Riddle immediately began recruiting American instructors and a number of men answered the call. Among them were James J. McLaughlin and Gerrit Schipper. Their daughters, Susan (McLaughlin) Delaney and Greta (Schipper) Reed, say their fathers, now both deceased, were too old for the draft but were patriots who saw working at ETAv as a way to contribute to the war effort.

Embry-Riddle archives a collection of her father's memorabilia, which offers a glimpse into the lives of instructors

JAMES MCLAUGHLIN COLLECTION Delaney recently donated to the



at ETAv. Only 6 months old in December 1946 when her parents left Brazil, Delaney says it was important to her to share her family's history with the school. "I realized these were things that might be more significant to others outside of our family circle," she says.

The collection is well-documented and particularly meaningful because it provides another perspective of Embry-Riddle's presence in Brazil, says university archivist Kevin Montgomery. "It gives a personal point of view of a family living and working there, rather than just facts," he adds.

An art history professor, Delaney began delving into her late father's possessions after retiring in 2010. She found herself drawn to the items that reflected the family's time in Brazil. "My father didn't talk about it [Brazil] in great detail, but he talked about it constantly throughout his life," she says. "It was a definite high point for him."

The time period was also significant to Delaney, whose mother, Margaret, died at the age of 45, when she was only 10. "It was a place where she was younger and happier," she says.

Delaney returned to Brazil in 2011 to retrace her roots and practice speaking Portuguese, a language she began learning a few years ago. She visited again this summer for a Portuguese immersion course and to further investigate her birthplace. "I'm a retired teacher and I want to be a student," she says. "And, I just think I haven't traveled enough down memory lane yet."

The James J. McLaughlin collection includes a general recruitment letter dated Nov. 22, 1943, from the personnel manager for the Embry-Riddle Brazilian Division; an employment agreement dated May 31, 1944, employing McLaughlin as an instructor (of

1887-1978: Before and after housing Escola Técnica de Aviação (ETAv), the building in downtown São Paulo served as a hostel for immigrants. When Brazil joined World War II, it froze immigration activities, and the facility was used for classrooms and training space for the technical school. flight theory) at the base salary of 3,000 cruzeiros (\$150) a month for one year, and two subsequent one-year contracts retaining him as a tool crib supervisor; numerous photos; an organizational chart; and McLaughlin's personal musings, written in 1947: "Sociological Observations of an American in São Paulo, Brazil."

THE SCHIPPER FAMILY

Reed's father, Gerrit, worked in the propeller department at ETAv. Several photos she recently donated document

her father's work at the technical school as well as the family's lifestyle in Brazil.

"My parents were victims of the Depression," Reed says. "They both had doctorate degrees in philosophy and found themselves without jobs." She says her father, who grew up on a family farm and was mechanically inclined, seized the opportunity to work for Riddle and support the Brazilian allies.

According to Reed, the instructors spent four to five months in Brazil before they could send

for their families. While the company paid for their transportation, it wasn't luxurious. "We traveled on a freighter and were at sea for a few weeks," Reed says. "We left from New Orleans and I remember going by Cuba and almost to the coast of Africa, before turning back toward Rio." She says the winding route was charted to avoid enemy submarines and mines. At night the ship traveled without lights to prevent detection.

A 6-year-old in 1944, Reed has vivid memories of Brazil, particularly the school she attended. "I learned to read Portuguese

before English," she says. Reed also developed relationships with the maid the family shared with a co-tenant and local merchants.

"The bread man came twice a week in a horse-drawn cart," Reed says. "He would let me drive with him.

> I remember the smells of bread and horse all mixed together."

MYSTERY HISTORY CONTEST In 1944, Embry-Riddle founder John Paul Riddle, who had connections in Hollywood as well as in

aviation, played matchmaker

for the young son of a prominent foreign official.

Identify the boy and girl-

a well-known starlet-

pictured here.

She also remembers the day in May 1945 that the Nazis surrendered, and the strange feeling she had when afterward she encountered a German classmate and friend. "I understood that we had won and they had lost," Reed says. "It was awkward at first."

POST-ETAV

After leaving Brazil in 1946, McLaughlin spent a short time working at the Embry-Riddle

school in Miami. He completed his doctoral studies and he and the family moved to River Falls, Wis., where he became a professor and later dean of the College of Arts and Sciences. He retired in the late 1970s.

The Schippers also left Brazil in 1946. Reed recalls flying back to the states on a military transport plane with Riddle, who stretched out on the bench seat "and slept the whole way." Gerrit was fortunate to land

Are you an Embry-Riddle history buff? Then here's your chance to show us your stuff!

Enter our Mystery History Contest for a chance to win a copy of Forever an Eagle, a pictorial history of Embry-Riddle Aeronautical University.

TO WIN: Search the University Archives online (www.eraualumni.org/archives) for the correct answer. Send your answer to the email link on the page and your correct entry will be entered into a random drawing held after Sept. 30.

Paul Ambs ('80, DB) of Florida is the winner of the spring 2012 Mystery History Contest. Ambs was one of two people who correctly answered the question, "What was Embry-Riddle's first sports team?" The answer was the flying basketball squad, aka "Air Pilots" (1928).

Embry-Riddle's University Archives department is dedicated to preserving the memories and artifacts belonging to the university's rich history. Visit www.erau alumni.org/archives.

a professorship at the University of Miami, and his wife, Edith, became a philosophy lecturer. Gerrit became chair of the philosophy department before retiring in 1973.

Reed ended up following in her parents' footsteps. She was a professor of philosophy for 10 years before becoming a Presbyterian minister.

Delaney welcomes other children of ETAv instructors to contact her at: sdelaney@miracosta.edu.

Sources: Craft, S. Embry-Riddle at War. University Press of Florida, 2009; www.memorialdoimigrante.org.br; Sannini, M. A Escola de Especialistas de Aeronáutica em Guaratinguetá: Uma Abordagem Histórica - 1950 a 1955. Universidade São Francisco, 2006

Continuing Our Reach

Embry-Riddle Worldwide currently educates dozens of students in South America (largely in Brazil) through online learning. "South America's continued growth in the aviation and aerospace sectors presents a broad range of opportunities that we are exploring through new relationships with government and industry partners as well as our alumni in the region," says John Watret, executive vice president and chief academic officer for the Worldwide Campus.

1944-1949: ETAv occupied the space.

1946: ETAv transitioned to a Brazilian-administered school and John Paul Riddle terminated his involvement.

1950s: ETAv merged with the Escola de Especialistas do Ponta de Galeão in Rio de Janeiro and relocated to Guaratinguetá. The school was renamed Escola de Especialistas de Aeronáutica; and the São Paulo instructional facility reverted to its original purpose.

Today: The building still stands and is a state Museum of Immigration and is home to the Immigrant Memorial.





PICTURE-PERFECT CRASH

LELAND SHANLE JR. ('92, WW) leads team that executes 727 drone flight and controlled wreck for safety's sake

Above, left: 'Big Flo,' in the sky near the mountains, followed by a chase plane, performs a practice run over the crash site. Above: Embry-Riddle alumni Leland 'Chip' Shanle, Mark Berry, Sean McDonald and Quinton Weiskittel. Above, right: Wreckage of the Boeing 727.

hen Broken Wing aviation consultancy, led by Leland Shanle Jr. ('92, WW), managed to fly and intentionally crash-land a 727-212 via remote control in late April, the mission became known as the world's largest successful drone flight. More importantly, the project yielded copious amounts of data about precisely what occurs during an actual airline accident.

Through partnerships with leaders in the scientific community and numerous aircraft equipment manufacturers, the 727 - affectionately known as "Big Flo"—was wired with stress gauges and outfitted with anatomical crash dummies, data recorders and other equipment for subsequent analysis.

Despite last-minute challenges, Broken Wing managed to put the 727 down just as the researchers requested: a wings-level impact, with the aircraft dropping at 2,500 to 2,800 feet per minute. By achieving such specific parameters, the team helped prevent an aircraft fire and facilitated maximum data collection. As planned, the controlled impact created three different "zones of survivability" within the aircraft: fatal, catastrophic and survivable.

"The scientists were giddy about the amount of information we were able to provide," reports Shanle, president and CEO of Broken Wing. "The final flight was a long time in the works, but it was all worth it for the amount of data collected."

HITTING THE MARK

The carefully choreographed flight will figure prominently in a television documentary being produced for Discovery Channel, Channel 4 in the United Kingdom and German broadcaster ProSieben. Shanle's ability to safely guide the unoccupied aircraft into a designated 9,000-foot impact zone allowed the event to be filmed from multiple angles. Broken Wing crew members also shot footage from support aircraft, and video cameras recorded the action inside the airliner.

Behind the scenes, Broken Wing navigated a series of engineering, aeronautical and bureaucratic challenges to produce the picture-perfect crash landing. The unique mission required extensive ground planning, a comprehensive "buildup"-based flight plan and split-second in-flight adjustments.



Embry-Riddle alumnus Morris 'Barney' Barnett shows the remote control that was used to crash-land the 727.





Preparations for the flight began years ago, when Shanle started assembling his team, which ultimately included four other Embry-Riddle alumni. A dry lake bed surrounded by mountains was selected near Mexicali, Mexico, for the crash site. Although the foreign venue complicated logistics, Shanle reports that Mexico's Dirección General de Aeronáutica Civil embraced the unique project.

On "Go Day," the team had to switch to a different, less powerful chase plane after its usual aircraft experienced a last-minute mechanical fuel pump failure. The flight crews literally adjusted on the fly as the backup Cessna 337 struggled to keep pace with the 727. "At that point, I considered scrubbing the mission, but instead decided to attempt a practice run," recalls Shanle.

The team salvaged the mission by reducing the 727's speed and altitude, and by performing a reverse rendezvous rather than the chase pickup it had practiced so many times. "There was a lot of flexing on Go Day, but no one flinched under the pressure," reflects Shanle. "The entire team was handpicked for their experience and skills, and everyone did their job—and more."

Flight safety manager Sean McDonald ('93, WW), already aloft for communication and weather reporting when the chase aircraft were swapped, was pressed into extra duty calling cadence for the flight so Shanle could focus exclusively on flying the 727 via remote control. With the barren desert landscape and slight upslope of the mountain range surrounding the impact zone, it was vital for Shanle to receive continual updates about distance to target and altitude deviations from profile during the low-altitude mission.

Right on cue, all of the team's in-flight adjustments came together. Shanle assumed control of Big Flo at 6,000 feet, roughly 20 miles from the impact zone. The feel and gain of the remote control system masterminded by chief engineer Morris Barnett ('98, WW) were perfect, he reports.

When the 727 captain and jumpmaster parachuted out separately at 2,500 feet, Shanle could see the captain grinning broadly as he freefell past the 337's cockpit.

After guiding the airliner to impact, Shanle watched from just 100 feet away as the 727 dug violently into the desert terrain, kicking up clouds of dust as the landing gear failed and the cockpit separated from the rest of the fuselage.

"It was unreal," he reflects. "Everything seemed to be in slow motion."

MISSION ACCOMPLISHED

The monumental drone flight combined several major aspects of Shanle's 30-year aviation career. His experience as a consultant for films including *Pearl Harbor*, *Behind Enemy Lines* and *Stealth* made him somewhat of an industry insider for the television networks. His master's in aerospace management—earned from Embry-Riddle in just one year—allowed him to structure a company and project that delivered just what the documentary makers wanted. And his flight skills, learned as a Navy test pilot, shined through during the mission's final in-flight twists.

Other Embry-Riddle alumni participating in the project included Quinton Weiskittel ('09, WW), who flew the 337 during test runs; and Mark Berry ('85, DB), who supplemented the parachute recovery ground team. Shanle's adult sons, David and Leland III, also assisted.

"It was a total team effort," notes Shanle. "It just shows what a small, motivated group can do on a very tight budget."

TUNE IN

The drone crash is scheduled to air in October on Discovery Channel's documentary television series *Curiosity*.



MOVING MOUNTAINS

Jeff Bourk ('95, DB) leads groundbreaking commercial airport by SARA WITHROW

estled in the Ozark Mountains in southwest Missouri, Branson holds the title of Live Entertainment Capital of the World. It's known for its variety of music and theater shows, local attractions and outdoor recreation—all set in a family-oriented atmosphere. The vacation destattracts an estimated 8 million visitors annually

tination attracts an estimated 8 million visitors annually. Since 2009, Branson has also become known for its privately developed and operated commercial airport—the first of its kind to be established in the United States.

"In just three years of operations, we have built the airport into the 200th largest commercial service airport in the country," says Jeff Bourk ('95, DB), executive director of Branson Airport (BKG). With 150 employees and growing, the airport boasts a 7,140-foot runway, a 58,000-square-foot terminal with four gates and a décor that showcases the rustic charm of the Ozarks.

Bourk has been a driving force behind the airport's construction and operation. The project was fully funded in 2007 through the sale of approximately \$113 million in

municipal bonds and \$45 million in equity. Securing funds was only the beginning. According to Bourk, the construction project was the state's largest earth-moving venture to date. Despite a variety of obstacles, the airport went from groundbreaking to operational in only 22 months.

While privately developed and operated, the airport and the land it sits on were gifted by Branson Airport LLC (BALLC) to Taney County to enable the issuance of tax-exempt bonds. A long-term lease agreement gives BALLC the right to operate the for-profit business for a term of approximately 50 years. Additional revenue streams that BALLC receives include a pay-for-performance agreement with the city, which provides \$8.24 for every visitor who flies into the airport; FlyBranson Travel (a full-service travel agency); Branson JetCenter (a fixed-based operator); as well as other typical airport revenues.

Because of its private model, the airport does not take federal grants. This allows BKG officials to negotiate unique contracts with stakeholders, including initial

development rights with airlines, which provide carriers the benefit of flying to specific cities for a defined period of time without competition.

DIAMOND IN THE ROUGH

The airport, which opened during arguably the worst economic recession since the Great Depression, has a long road ahead. In 2009, it logged 45,000 enplanements. Bourk says enplanements have grown consistently since then, climbing to 92,500 in 2010 and 107,500 in 2011. In 2011, the airport also entered into forbearance status with its municipal bond. The forbearance essentially gives the airport additional time to meet certain terms of its original agreement with bondholders.

As the economy recovers, Bourk expects enplanements will likewise accelerate. The spring addition of daily nonstop flights to Chicago and Houston, along with the completion of the Southwest Airlines merger with AirTran Airways, also promises to grow traffic at the airport.

Earlier this year, the airline committed to serve BKG and to ultimately convert AirTran Airways at Branson to Southwest Airlines operations. Solidifying that commitment in July, the airline signed a multi-year agreement with Branson Airport and announced that they will start service in Branson as Southwest Airlines in the first half of 2013.

Brad Hawkins, spokesman for Southwest Airlines/ AirTran Airways, says the carrier plans to add affordable flights to and from Branson and surrounding drive-in destinations. Located within a day's drive for more than 50 percent of the U.S. population, Branson is ideally situated for such a strategy. The Branson Lakes Area Chamber of Commerce reports that 80 percent of visitors travel to Branson by private vehicle, and 60 percent of all tourists come from locations exceeding a 300-mile radius.

A recent economic impact study conducted by Lee McPheters, a professor at Arizona State University, found that in 2011 the airport generated \$43 million in visitor spending and supported nearly 1,000 local jobs. The study also estimates that with a half a million enplanements, the airport could generate approximately \$200 million in visitor spending.

A NEW CHALLENGE

For Bourk, construction of the airport, specifically the magnitude of the project and the short 22-month timeline, presented the largest challenge. Although he had owned and operated a fixed-base operator for years in Maine and worked in airport management his entire career, the Embry-Riddle alumnus had never before built one from the ground up.

"Literally, there were seven mountaintops that had to be flattened," he says. "We had to move 12 million yards of



"I feel very strongly that an airport should be run as a private business, not as a public entity. Operating an airport as a business allows [us] to leverage revenue in a manner that benefits carriers with reasonable costs and customers with low fares."

dirt and rock to create the runway alone and then we also had to work with the FAA to redesign the local airspace with new instrumental approaches. Additionally, environmental impact studies needed to be performed and all within a very tight time frame."

Bourk says he considered every angle before accepting the position as executive director, which at the time equated to managing a large "mountain of dirt." The challenge and entrepreneurial aspects won him over, though, and in 2007, he and his wife, Michele, moved to Branson.

"I feel very strongly that an airport should be run as a private business, not as a public entity," Bourk says. "Operating an airport as a business allows BALLC to leverage revenue in a manner that benefits carriers with reasonable costs and customers with low fares."

Since opening in 2009, Branson Airport has won numerous awards, including the 2010 anna.aero award for "Fastest Growing U.S. Airport 100,000–500,000 passenger category," the FAA's 2011 Airport Safety Enhancement Award, SmarterTravel.com's "Top 10 Stress-Free Airports," No. 1 AirTran Performance for the fourth quarter of 2011, Branson Lakes Area Chamber of Commerce 2012 Ambas-

sador Award, and other customer service awards.

"Branson Airport is a unique model," Bourk adds. "Branson is a one-of-a-kind place and an incredible vacation destination, which makes this type of venture possible. This project is being watched by many in the industry, because it may be a new way of bringing private capital into the aviation system."



Watch the **Rranson Wave**

For more on the background of the Branson Wave and to see it in action, visit http://youtu.be/-nSbuR2o08A.

ALUMNI CARVE NEW VENTURES IN BUSINESS NICHES

et charter and fractional ownership aren't exactly newbies to the aviation industry; however, in recent years, these options to traditional commercial travel and private aircraft ownership have gained in popularity. Richard Zaher ('99, DB) of Paramount Business Jets (PBJ), and Jamail Larkins ('07, DB) and Danny

Gizzi ('08, DB) of Ascension Air Management are three Embry-Riddle alumni taking advantage of these business niches.

Frank Richey, professor and associate dean for the College of Aviation at the Daytona Beach Campus, credits founder of NetJets Richard Santulli with inventing the concept of fractional ownership. Borrowing on the principles of a real estate time share, the professionally managed partnership gives owners access to larger, more capable aircraft as well as tax benefits, Richey says. "From 1986 to the mid-1990s, the growth of fractional ownership was exponential," he adds. "It's got 20 percent or better of the market now."

In contrast to the growth in fractional sales of turbine-powered jets, fractional ownership of smaller piston-powered aircraft has remained relatively stagnant at only 1 to 2 percent of the

"If you use an aircraft 600 hours a year or more, you can justify owning it. Those that charter aircraft are willing to pay a higher price for ondemand service."

market. It's this incongruity that influenced Larkins and Gizzi to add fractional ownership to Ascension's existing aircraft sales and leasing business. They launched the endeavor in January.

As of June, Ascension had sold four aircraft. Larkins attributes the early success in part to the company's relationship with Cirrus Aircraft. Ascension Air Management is a fractional ownership partner with Cirrus, exclusively selling the Cirrus SR22T. "It's the Ferrari of airplanes," Gizzi says. In return, Cirrus refers clients who are unable to qualify as sole owners to Ascension's fractional ownership options.

Ascension was also able to negotiate a unique finance package that provides clients a sizable return on

investment at the end of the loan term. Owners benefit from a full concierge service at Ascension's home base at DeKalb-Peachtree Airport; a 24/7 scheduling center; and limited service pickup and drop-off centers at a handful of other fixed-base operators. Larkins and Gizzi plan to expand the concierge service, one city at a time. "About 20 to 25 markets in the United States support a personal flown fractional like this," Larkins says.

GROWING BUSINESS TOOL

The jet charter business is nearly as old as the invention of flight, but, according to Zaher, it exploded in the 2000s as communication technology allowed for more efficient scheduling. In 2005, Zaher started his charter brokerage "right in the middle of this huge growth." Shortly after opening PBJ in Manhattan, N.Y., he moved the company and operations to Daytona Beach, Fla.,





and ended up employing about 25 Embry-Riddle students to assist in the research and development phase. Today, his company is headquartered in Tampa, Fla., and has branches in Texas and Orlando.

Zaher admits that chartering an airplane, in lieu of taking a commercial flight, can be viewed as a disposable luxury-especially during an economic downturn. Still, PBJ was able to survive the recent recession; and in 2011, the average number of monthly charters doubled that of 2010. "Our company grew over 400 percent last year," he says.

"Executives consistently say that flying private actually makes them money," Zaher explains. "A busy executive can lose time, productivity and ultimately money through conventional airline travel. At the end of the day, corporate jet charter is a tool that they use to help them with their business."

Richey would agree. "Sixty-six percent of the Fortune 500 corporations in the United States have an aircraft and use it as a business tool," he says. "If you use an aircraft 600 hours a year or more, you can justify owning it. Those that charter aircraft are willing to pay a higher price for on-demand service."

Zaher says his Embry-Riddle degree has been invaluable to his success. "Just the fact that I was able to say that I graduated from Embry-Riddle Aeronautical University really helped me. There is nothing else like it. Some of the best people in the industry went to Embry-Riddle."



The Boeing Company employs nearly 4,000 alumni. Pictured above with a 787 Dreamliner in the final stage of assembly are roughly 250 of them. Leading the pack, from left on the air stairs, are Brian Hoefig ('86, DB; '97, '98, WW), quality assurance director at the 737 Delivery Center; Bob Manelski ('84, '87, DB), director of Electrical Systems Responsibility Center, BCA Fabrication; Wayne Brown ('91, WW), director of operations for commercial airplanes manufacturing and quality; and Dennis Hicks ('82, PC; '85, WW), business director of services and sales

he list of companies that employ Embry-Riddle alumni reads like a who's who of the aviation and aerospace industries. Businesses with a long tradition in supplying and maintaining aircraft and aircraft systems and developing and supporting national defense and space exploration recognize the value of an Eagle. Following is a snapshot of how Embry-Riddle alumni are shaping different facets of the industry.



THE BOEING COMPANY

Specialty: Commercial and military aircraft

In 1910, William Boeing started what would become one of the world's largest aerospace companies out of a red barn near Seattle. Today, The Boeing Company continues to fly in bold circles with new commercial projects like the 787 Dreamliner. It is also the largest private employer of Embry-Riddle graduates (about 4,000).

Using composite materials and more efficient engines, the Dreamliner offers several benefits to airline operators that include higher fuel efficiency and longer range capability. A key player in its success is **Brian Hoefig** ('86, DB; '97, '98 WW). Hoefig progressed from working at a small fixed-base operator in New Jersey to managing MD80 mechanics in Southern California for Heritage McDonnell Douglas, which merged with Boeing in 1997.

Hoefig transitioned to Seattle in 2001 and is currently the quality assurance director at the 737 delivery center. Most recently, he was on a special assignment to help streamline the production processes for Boeing's giant 787.

Hoefig says the company was able to drastically reduce the time it takes for mechanics to begin work on the 787 by changing the airplane's assembly sequence and inspection processes. Modifying the project-management software to expedite delivery of blueprints and research materials to the

mechanics helped speed up production as well. The bottom line was a 50 percent reduction in flow time from when the mechanics received their daily job assignment to the moment they were ready to work on the product.

Hoefig credits his experience and education at Embry-Riddle, which set a strong foundation to drive positive results. He also serves as Boeing's executive focal to Embry-Riddle, which includes a long-standing partnership with the university. His main objective in this role is to continue attracting the best talent and future leaders to the company from all three campuses.

On the sales side, Dennis Hicks ('82, PC; '85, WW) continues to find success with innovative Boeing products such as the GoldCare maintenance management program, which provides turnkey support for the 787, 737 and 747 platforms. However, products supporting the next generation of airliners are becoming Boeing's "sweet spot," Hicks says, and Europe is a hot market.

With a Master of Business Administration in Aviation from the Worldwide Campus built on degrees in aeronautical science and aviation management, Hicks has an eye for where things are headed. A member of the Prescott Campus Board of Visitors, he says Embry-Riddle is well positioned to continue to supply skilled leaders for the aviation industry.

"Students get hands-on engineering projects to do [at Embry-Riddle]. When I was back visiting last October, I observed some of the labs with the unmanned UAV products, which are putting technology at the forefront and giving students a chance at real-world application. That's important," Hicks says. For Hicks, the next big thing is the 737 MAX, which will eventually replace the old 737 planes with improved aerodynamics, new systems and a 15 percent increase in fuel efficiency. By August 2012, Hicks says, the company hopes to have 1,000 orders for the platform, which is due for delivery by 2017.

AERO ENGINE CONTROLS

Specialty: Engine controls and fuel systems

Nearly 3 years old, Aero Engine Controls (AEC), a joint venture between Rolls-Royce and Goodrich Corporation, is off to a strong start building digital engine controls and fuel systems-the brains and hearts-for commercial jets, helicopters and military planes. Its board of directors recently approved a \$95 million investment to build a new 125,000-square-foot manufacturing plant near Birmingham, England.

The company's control systems play an integral role in Boeing's 787 Dreamliner as well as the Gulfstream G650 and Airbus A350. On the military side, AEC systems appear in the Bell Boeing V-22 Osprey, Lockheed Martin's C-130J and Northrop Grumman's Global Hawk, an unmanned aircraft.

Seated firmly in the cockpit of AEC strategy and customer relations is David Waggoner ('86, DB). Waggoner held two executive positions at Rolls-Royce before transitioning to his current role as director of strategy and government relations at AEC. His career has exposed him to a range of specialties within both civil and defense markets, including operations, program management, sales and marketing and product support.

"Relationship management is key to any large aerospace business," Waggoner says. "Helping customers to resolve challenging technical and business issues is extremely rewarding. It's always been about managing relationships, whether those relationships are customers, supply chain partners or other aerospace manufacturers."

NORTHROP GRUMMAN

Specialty: Commercial and military electronics/services

With a proud aerospace heritage that stretches back to 1939, Northrop Grumman is a leader in the development of national defense systems and commercial electronics, which range from unmanned aircraft and spacecraft to automated machines that help sort the mail.

The company holds a whopping 3,252 patents worldwide.

One of its most important contracts is the Joint STARS (Surveillance Target Attack Radar System), an air-to-ground











From left, top: Brian Hoefig, Dennis Hicks; center: Nancy Kaney, David Waggoner; bottom:

defense system that uses converted company commercial jets filled with sensitive radar equipment to pinpoint moving ground targets. Last fall, the program won a major logistics award from the Department of Defense.

Bill Guttadauro ('93, WW), who began his career 29 years ago working on Navy cargo jets and bombers before transferring to Joint STARS in 1986, helps oversee the system as its chief engineer.

"With the Air Force, you're still building for a customer, but you're building with the capability to go out and save lives," he says.

Guttadauro's next projects include modernizing the computer infrastructure in the Joint STARS aircraft and updating its networking capabilities. The company

is moving forward with new projects as well, such as a \$103 million deal to provide the Navy with more LITENING G4 targeting pods, which mount underneath fighter jets and deliver high-definition, infrared images of targets to the cockpit.

"As you try to become a leader, you need the skills to understand how to motivate people," says Guttadauro, who also serves on the Embry-Riddle College of Engineering Advisory Board. "That's one of the skills you learn. You also learn that it's gratifying to produce a product that the end-user likes. It's like being a cook and someone says, 'You make the best food."

DELTA AIR LINES

Specialty: Commercial air travel With a fleet of 714 aircraft and flights to 63 countries, Delta Air Lines has come a long way since it started in Monroe, La., in 1928.

The company announced in 2012 its plans to invest \$2 billion in airport expansion projects, services, aircraft renovations and new technologies. The announcement comes on the heels of a record \$1.2 billion profit in 2011 for the airline, which resulted in a profit-sharing bonus for its 80,000 employees.

One Delta employee benefiting from the company's good fortune is Nancy Kaney ('90, PC). A longtime pilot, Kaney worked for Scenic Airlines, flying tourists in a 19-passenger twin-prop plane; Express One, delivering packages for the U.S. Postal Service on 727s; as a first officer on MD80s for TWA; and as a first officer on MD88s for Delta Air Lines. In 2006, Kaney became a first officer on the 767 for the company's international flights, making her lifelong dream of becoming an international traveler come true.

Kaney also weighs in on business decisions at Kaney Aerospace, a Rockford, Ill.-based company she and her husband, Jeffrey, founded in 2006.

"You can learn to fly a million different ways—from the mom-and-pop shop down the street to the military and more," Kaney says. "An airline is a very standardized business model. They want you to think but also react in a certain way. I feel like my education really prepared me for the airline industry. Professional standardization. Embry-Riddle provided that, and that's been very useful to me."

EMPLOYING EAGLES

TOP PRIVATE EMPLOYERS

(with 100 or more alumni)

- 1. The Boeing Company
- 2. American Airlines Inc.
- 3. Lockheed Martin Corporation
- 4. United Continental Corporation
- 5. Delta Air Lines
- 6. US Airways Inc.
- 7. FedEx Corporation
- 8. Northwest Airlines Inc.
- 9. Southwest Airlines/AirTran Airways
- 10. Northrop Grumman Corporation
- 11. United Space Alliance
- 12. United Technologies Corporation
- 13. General Electric Company
- 14. Raytheon Company
- 15. United Parcel Service Inc.
- 16. Gulfstream Aerospace Corporation
- 17. Atlantic Southeast Airlines
- 18. Pratt & Whitney
- 19. NetJets Inc.
- 20. Sikorsky Aircraft Corporation
- 21. Cessna Aircraft Company

Embry-Riddle is also a top private employer of alumni!

TOP GOVERNMENT EMPLOYERS

(with 100 or more alumni)

- 1, U.S. Air Force
- 2. U.S. Army
- 3. Federal Aviation Administration
- 4. U.S. Navy
- 5. U.S. Marine Corps
- 6. NASA
- 7. Air National Guard
- 8. U.S. Department of Defense
- 9. U.S. Coast Guard

Source: Embry-Riddle Aeronautical University alumni database



RELEASING THE DRAGON

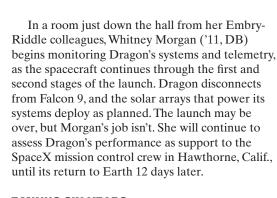






t's T-minus 2 minutes, 30 seconds on May 22 in the SpaceX Launch Control Center at Cape Canaveral, Fla. Tyler Grinnell ('08, DB) has ended the master auto sequence and initiated "terminal count." All systems are ready for liftoff of the Falcon 9 rocket and Dragon, the first commercially developed spacecraft to dock with and resupply the International Space Station (ISS). "Go for launch," says SpaceX launch director Brian Mosdell ('87, DB), signaling the start of the final countdown. Moments later, Falcon 9's nine Merlin engines ignite and the rocket blasts toward the Earth's upper atmosphere. Mosdell stifles a cheer as the flight data stream in. He, Grinnell and the other members of the SpaceX launch control team scrutinize the data, as Falcon 9 accelerates Dragon toward its destination 250 miles away.

Alumni at controls of historic SpaceX launch



T-MINUS SIX YEARS

Dragon's demonstration flight dates back to 2006. Anticipating the retirement of the Space Shuttle, NASA selected SpaceX—a private company established in 2002 by the co-founder of PayPal, Elon Musk—as one of its commercial partners to carry supplies to the space station. NASA's Commercial Orbital Transportation Services program funded the development of that capability,

including demonstration flights for Falcon 9 and Dragon, with the Dragon berthing with the space station on the final flight.

In 2009, SpaceX was awarded a \$1.6 billion cargo resupply services contract to perform a minimum of 12 missions to the ISS, with the possibility to extend for a total value of \$3.1 billion. The contract became effective upon Dragon's successful docking with the ISS.

COMMANDING CONTROLLED EXPLOSIONS

For seasoned launch veteran Mosdell, 47, delivering millions of dollars of equipment to appointed destinations in Earth's orbit has become status quo. He joined SpaceX in February 2008, jumping in to lead the development of Launch Complex 40 at Cape Canaveral Air Force Station.

"I was the 10th person at the Cape for SpaceX. There are more than 80 of us there now," Mosdell says.

Mosdell managed the construction of the launch pad and all processes leading up to the May blastoff.







in McGregor, Texas.



Top left: Sam Patel, an Embry-Riddle student intern at SpaceX, shows his Eagle pride on the launch pad. Bottom left: Tyler Grinnell's personalized license plate celebrates his employer and his Embry-Riddle fraternity. Above right: Alumni Paul Dovi, Dillon Sances, Jeff Latham, Brittany Fey, Kevin Mock, Josh Chatham and Steve Murphy at SpaceX's Rocket Development Facility

Previous experience—working with the F-16 and Centaur upper stage for General Dynamics, and the Delta II, III and IV and Atlas rockets for McDonnell Douglas/Boeing, and more recently, for United Launch Alliance-helped prepare him for his current job.

He says collaboration with NASA was foundational to the success of Dragon's first supply demonstration. "There was a lot of concurrent development on the spacecraft, its trajectories, profile and software, to make sure it met NASA objectives for safety and reliability," Mosdell explains. "Dragon is a brand-new spacecraft."

Given this fact, there were multiple starts and stops along the way, particularly as the launch date approached. The demonstration flight was first targeted for no earlier than Feb. 7, 2012; however, additional software and hardware testing pushed the departure to late spring. The Falcon 9 engines were successfully test-fired April 30; and following the completion of additional software assurance measures,

NASA gave SpaceX the proverbial green light. Still, a first launch attempt May 19 was automatically aborted after an onboard computer detected high pressure in one of the main engines. The SpaceX team made the necessary repairs and the May 22 launch went off without a hitch.

Mosdell says being involved with SpaceX's groundbreaking work is "exciting and demanding. And, I wouldn't have it any other way."

Becoming reflective, he adds, "In the short term, it's as if SpaceX is taking over the role of carrying cargo and astronauts to low-Earth orbit for NASA. Knowing the history of the Apollo and the Space Shuttle programs, considering how huge these programs were to accomplish this task, and now sharing this role with NASA, it's a little bit surreal to me."

DRIVING DRAGON

The 23-year-old Morgan can almost sense the timing of Dragon's automated responses in orbit, having dedicated more hours than she can remember to prepare the spacecraft for its inaugural cargo mission. A Los Angeles native, she began working at SpaceX as an Embry-Riddle intern in 2009, taking a full load of courses while clocking more than 40 hours a week at the Cape Canaveral site. She says

COL. BENJAMIN ALVIN DREW, NASA ASTRONAUT

Astronaut Col. Benjamin Alvin Drew Jr. ('95, WW) anticipates a time thousands of years from now when humans could be living on other planets.

"The biosphere around the sun dictates that life could exist on both Venus and Mars, if we could terraform them, get water there," Drew says.

In that effort, NASA is focusing its research and resources away from low-Earth-orbit activities (i.e., the Space Shuttle program) and toward interplanetary exploration. Drew says missions to lunar space and Earth-crossing asteroids are first on the agenda; and eventually, within the first half of the century, Mars.



To get there, the agency needs a strong commercial space industry to support the work at the International Space Station and develop it as a jumping-off point for deep space missions.

"It's not a matter of government versus the commercial sector," Drew says. "NASA is essentially engaging in venture capitalism, so we

have a space transportation company that can provide us services to lower orbit."

NASA is considering two commercial models: a "rental car" model and a "taxi cab" model. With the rental car model, NASA would provide its own astronauts to operate the private spacecraft on resupply missions,

Drew says. The taxi cab model would employ commercial astronauts.

Interplanetary exploration is not out of the question for Drew, who at the age of 49, fits the preferred demographic due to average life expectancy and the time it takes radiationrelated cancers to develop. Still, he says he's more interested now in designing mission profiles, rockets and support systems. For the next two years he will be using his engineering savvy to develop life support and radiation protection systems to allow humans to stay in space for longer periods.

"The way I look at it is, I got to go to space because during the 1970s and '80s some hard-core engineers worked hard to get us there. They're my heroes, really. I want to make sure that opportunity is available for future generations as well."

Embry-Riddle Eagles @SpaceX

Richard Armijo ('12, WW) Assembly and test inspector

David Bangs ('07, WW) Lead assembly and test

Donal Bell ('08, DB) Manager, in-space propulsion production

Joshua Chatham ('08, DB) Boost propulsion test engineer

Kelly Connors ('09, DB) Technical recruiter

Paul Dovi ('11, DB) Test engineer

Antonio D. Gonzalez ('06, WW) Assembly and test inspector

Walter Gonzalez ('11, WW) Lead in-space propulsion technician

Tyler Grinnell ('08, DB) Launch engineer, vehicle controller

Keith Hardman ('10, DB) Manufacturing engineer

Josh Hein ('11, DB) Friction stir weld engineer

Jeff Latham ('11, DB) Propulsion test engineer

worth it.'

Jeremy Martin (student, WW) Assembly test inspector

Ryle Maxson ('09, '10, DB) Fluid systems engineer

Kevin Mock ('08, DB) Ground support equipment engineer, Dragon recovery propulsion RE

Whitney Morgan ('11, DB) Launch engineer

Brian Mosdell ('87, DB) Launch site director, Cape

Robert Stephen "Steve" Murphy Jr. ('11, DB) Test engineer

Shyamal Patel (student, DB) Launch engineer, fluids, student intern

Robyn Ringuette ('97, DB) Director of propulsion production

Dillon Sances ('08, '10, DB) Propulsion test engineer

Laura Serio (student, DB) Structures, student intern

Nick Spera ('08, PC) Power electronics engineer

SOURCE: SPACEX

sacrificing a social life to get her dream job was "definitely

Morgan was offered a permanent position with SpaceX as a launch engineer the day after graduating on Dec. 18, 2011. She began training to be a Dragon controller, the person who ensures the spacecraft is properly built and tested in time for launch, months before joining the team as an employee.

"I couldn't ask for a more fulfilling job," she says. "It never ceases to amaze me that I'm working on a vehicle that goes to space."

Morgan became interested in astrophysics as a child, when her father, Michael Morgan, explained the vastness of the universe to her and helped her build her first telescope. "Once I realized that all the twinkling lights in the night sky were suns like ours, I knew I wanted to study space," she says. After enrolling at Embry-Riddle, she decided she wanted to be more than a scientist and quickly transferred to the aerospace engineering program. "Everything started clicking. I just knew that I had found my calling," she says.

As a Dragon controller, Morgan tested and verified the spacecraft's performance during the year leading up to the launch, and made adjustments. "Things didn't always go according to plan," she says. "A development vehicle can be extremely frustrating."

Deadlines and the significance of the mission combined to create an intense and emotional work environment, Morgan says. "Quite literally, blood, sweat and tears have gone into this vehicle. We've dedicated our lives to seeing this come true."

COMMERCIAL ASTRONAUTS

Designed from inception to carry up to seven astronauts, SpaceX's long-term plans for Dragon are to equip the ISS with human resources as well as food and supplies, and, eventually, to participate in commercial deep space exploration.

RELIVE

LIFTOFF

To see actual footage of

SpaceX's historic launch of

Falcon 9 and Dragon, visit

http://1.usa.gov/LxkoUK.

"A primary objective for SpaceX is to make the human race multiplanetary and actually colonize Mars," Grinnell says.

The launch engineer and vehicle controller for Falcon 9 says he's interested in being one of the first humans to participate in a manned mission.

"I've always wanted to be an astronaut, ever since I could think," he says. For now, however, Grinnell is happy to be at the control console. "I feel like a little kid in a candy store every day," he exclaims.

The 25-year-old started working for SpaceX in November 2008, just prior to completing his aerospace engineering degree at Embry-Riddle. Despite his young age, he packs an impressive résumé: experience with the Space Shuttle program as an intern at Boeing; a yearlong cooperative position with NASA; consistently high academic performance; and active involvement with his fraternity, Sigma Chi.

Shortly after joining SpaceX, Grinnell spent four months at the production facility in Hawthorne, Calif., poring over Falcon 9's schematics and updating its configuration files. "My manager said dive in," Grinnell recalls. "We have a joke around SpaceX that every year here is like three at another company. SpaceX is like the special forces of the space industry."

Grinnell continued to test and develop the rocket's avionics systems upon its arrival in Florida in October 2011. He also wrote the automated sequence that arms the rocket with propellants, pressurizes its flight systems and generally prepares it for takeoff on launch day. One of the 12 controllers in SpaceX Launch Control for the celebrated blastoff, Grinnell would have been the first to receive the command from Mosdell to abort had something gone awry during the countdown. Fortunately, for SpaceX and NASA, the launch and demonstration were "nominal," or generally deemed a success.

"What SpaceX is doing is making history, and I wanted to be a part of that," Grinnell says.

Editor's Note: Shyamal "Sam" Patel, a student intern at SpaceX's Cape Canaveral site, also played a role in the launch, assisting with the ground fluid and propulsion systems. Patel expects to graduate from the Daytona Beach Campus with a bachelor's degree in aerospace engineering in fall 2013.



Helping future leaders take flight

Edward W. Stimpson Scholarship puts students on path to success

BY ANTHONY BROWN

n the 1970s, a "tall man with a warm smile" named Edward W. Stimpson helped then Embry-Riddle President Jack Hunt lead a young and growing university from a relatively modest operation to what would become the world's top-ranked aviation and aerospace university.

Today, Stimpson's legacy comes full circle with the establishment of the Edward W. Stimpson Presidential Leadership Scholarship. Honoring the visionary and university trustee who dedicated his life to ensuring a strong future for aviation, the scholarship will provide support annually for two junior or senior students who exhibit exceptional leadership qualities and high academic achievement.

"We don't have enough role models for young people to look up to today," says Dorothy "Dottie" Stimpson, who established the scholarship in memory of her late husband. "We need leaders in aviation who have the same kind of moral values [that Ed exemplified] in service to this country."

"Whether you are talking about the university or the aviation industry, Ed Stimpson was one of our great leaders," says university President and CEO John Johnson. "His ability to bring people together toward a common purpose set him apart. Embry-Riddle and the general aviation industry would not be where they are today without him."

'GENTLE GIANT' OF GENERAL AVIATION

In addition to his 24 years of service and seven years as chairman of Embry-Riddle's Board of Trustees, Stimpson held leadership roles in some of the most important aviation organizations in the nation. He served as president of the General Aviation Manufacturers Association for 25 years, and as chairman of the "Be a Pilot" program, which under his leadership became one of the largest learn-to-fly organizations in history.

For all of his accomplishments, Stimpson received more than 33 national awards in his lifetime, including the Wright Memorial Trophy, the EAA Freedom of Flight Award, the National Aeronautical Association's Frank G. Brewer Trophy and the NBAA's Meritorious Service In Aviation award.

Perhaps his greatest contribution to aviation came in 1994, when Congress approved the General Aviation Revitalization Act. For eight

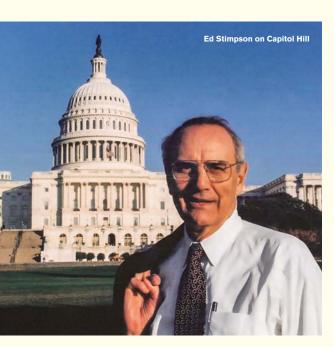
Above (from left): Ed and Dottie Stimpson; and Ed while serving the International Civil Aviation Organization. "Ed showed that aviation was important and above politics. Integrity and leadership is what mattered, and people gladly followed Ed's lead."-WILLIAM VOSS. CEO, FLIGHT SAFETY FOUNDATION

years Stimpson led the charge to pass the bill limiting lawsuits against general aviation aircraft manufacturers, breathing new life into the struggling general aviation sector.

"Ed Stimpson without any doubt was the most effective advocate we've ever had in the history of general aviation," says Russ Meyer (HonDoc '85, DB), former Cessna chairman and CEO. "He moved mountains in Washington."

He also "built bridges." As a U.S. ambassador, Stimpson was one of the few to serve under both Democratic and Republican presidents (Bill Clinton and George W. Bush). As the U.S. representative for the International Civil Aviation Organization, he helped set global standards for 185 nations in air safety, navigation, environment and security.

"Ed showed that aviation was important and above politics," says William Voss, CEO of the Flight Safety Foundation. "Integrity and leadership is what mattered, and people gladly followed Ed's lead."



A LEGACY OF LEADERSHIP BEGINS

The first two scholars to be awarded the Edward W. Stimpson Presidential Leadership Scholarship are high achievers who both plan to serve their country-one in national security and the other in the Air Force.

Scott Small, who plans to graduate in December with a bachelor's degree in global security and intelligence studies (GSIS)

from the Prescott Campus, says he hopes ultimately to work abroad with a government agency or a private company to promote national and international security.

"I have had a lifelong goal of serving my country in the field of national security," says Small, who interned this summer with the State Department's Office of Central African Affairs. "This scholarship will help me as I enter my next phase of study and begin my career."

Justin Mangum, an aeronautical science senior minoring in air

traffic control at the Daytona Beach Campus, earned a pilot seat from the Air Force in February and will pursue his passion for flying after graduation in 2013. He credits the scholarship for allowing him to complete the rigors of flight training.

"Flying three times a week adds up quickly and takes a toll on the bank account," he says. "Thanks to this opportunity that I have been blessed with, I have been able to pass my commercial check ride and complete my flight training. To be able to continue my flying and education is just unbelievable."

True to the legacy of Ed Stimpson, both scholars take the service and leadership charge of the scholarship

In addition to his studies, Small edits the GSIS program's intelligence



"I want to affect those around me in a positive way by serving a goal that is bigger than myself. For me, it's not about how far you get in life, but who you bring with you."

-JUSTIN MANGUM



newsletter, Eagle Eye, and volunteers with organizations, including Habitat for Humanity and the Student Conservation Association.

Mangum expresses his service and leadership through his Air Force ROTC activities.

"I want to affect those around me in a positive way by serving a goal that is bigger than myself," he says. "For me, it's not about how far you get in life, but who you bring with you."

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BLADE RUNNER

KEVIN BREDENBECK ('82, DB) is changing the game with dual rotor helicopter technology

evin Bredenbeck ('82, DB) grew up in Chicopee, Mass., near Westover Air Reserve Base in the shadow of B-58 Hustlers, F-86 Sabres, and - best of all the B-52 bombers departing for missions rotating out to Southeast Asia. Each B-52 departure inspired a blockparty atmosphere, with families picnicking

and planting lawn chairs in the street to stare. "We would be jumping and waving at each B-52 as it just cleared the trees," he says. "The picture windows on neighbors' houses would crack at the noise and vibrations. It was so cool."

Thundering moments such as these created a quiet infatuation inside. And the boy who dreamed about flight, grew into a man who is now shaping it.

A LIFESAVING INNOVATION

Today, Bredenbeck is director of flight operations and chief test pilot for Sikorsky Aircraft Corporation, and his handprint is all over the X2 TechnologyTM high-speed demonstrator helicopter. The innovative X2 features two counter-rotating rigid rotor blades and can cruise at a 250-knot clip.

"Imagine a helicopter that's twice the speed, more efficient and quieter,



being able to deliver a critical patient to a trauma center in half the time," Bredenbeck says.

The X2's industry-shattering speed, coupled with its hovering, range and high-altitude capabilities, also opens the door to exciting national defense capabilities, especially in situations where flying through exposed environments poses risk.

"Right now in Afghanistan, a helicopter can only penetrate about 43 to 48 percent of that country," Bredenbeck says. With the X2 technology, he estimates helicopters could cover 97 percentboth because of the X2's ability to reach higher-altitude, mountainous terrain and because of its ability to fly over rather than through risky areas.

CHANGING THE INDUSTRY

Bredenbeck earned the prestigious Iven C. Kincheloe Award, which recognizes excellence in flight testing, for his work on the X2, as well as 2011 accolades that include the 100th Robert J. Collier Award and Flightglobal Aviator of the Year award. Meanwhile, the X2 received the 2009 Breakthrough Award in Innovation from Popular Mechanics and was named one of 2009's best inventions by Time.

"You lift your head up at the end and say, 'Wow this is pretty good. This can change the rotorcraft industry," Bredenbeck says.

Even with his accomplishments, it's full speed ahead for Bredenbeck. He and his Sikorsky team are continuing development of rotary wing technology with the S-97 RaiderTM, a next-generation light tactical helicopter scheduled for its first flight in

> 2014. He is also working with Embry-Riddle to focus attention toward the development of rotary craft engineering electives. He has invited an Embry-Riddle engineering team to Sikorsky in order to demonstrate rotorcraft technologies around which coursework could be built. "It's a niche that is very specialized and takes team engineering," he says. "And it's going to be up to all of us in the future to mature this."



MESSAGE FROM THE ASSISTANT VICE PRESIDENT

I'M excited to announce that we added more than 1,300 new Eagles to our 100,000 Strong and counting this past May.

We happily welcome new members to the alumni community we call the EaglesNEST. All Embry-Riddle graduates automatically become members of the Alumni Association. For information about membership benefits visit: www.eraualumni.org.

The Women's Ambassador Program continues to strive toward its goal of increasing the number of female students at Embry-Riddle and in the aviation and aerospace indus-



Assistant Vice President of Alumni Relations Michéle Berg and Executive Vice President and Chief Academic Officer for the Worldwide Campus John Watret, right, with Jorge Irribarra ('07, '12, WW).

tries. Our TEA (Technology, Engineering, Aviation) receptions, hosted by the Admissions departments in conjunction with alumni chapter events across the country, have been well-received. Our women ambassadors, both students and alumnae, have done an outstanding job sharing their on-campus experiences, and the latter, how their Embry-Riddle education has contributed to their career success.

Alumnae interested in getting involved in this rewarding program can visit **www.eraualumni.org/wap**. We can do it!

Don't forget to mark your calendars for our Wings and Waves Alumni Weekend, Oct. 10–14 in Daytona Beach and OctoberWest, Oct. 4–6 in Prescott, Ariz. With three jet teams attending Wings and Waves for the first time in history, the air show promises to be better than ever. The Embry-Riddle Jet Dragster is making an encore visit to OctoberWest this year as well.

The best part of Homecoming is spending time with fellow Eagles. I look forward to welcoming you back to your alma mater during this special time! Remember you are "Forever an Eagle!"

Sincerely

MICHÉLE BERG Assistant Vice President, Alumni Relations P.S. — Don't forget the IndustrylCareer Expos:

Oct. 4 in Prescott and Oct. 10 in Daytona Beach.

www.erau.edulcareer



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Search Embry-Riddle Aeronautical University Official Alumni Group



"Join the Nest":



Sandy Kaplan discusses his Vietnam experience at the Veterans Appreciation Day event April 17 at the Daytona Beach Campus. Also pictured, left to right, are Executive Vice President and Chief Academic Officer Richard Heist, President and CEO John Johnson, and Lt. Col. Garrett Messner, Army ROTC Battalion Commander.

VETERANS APPRECIATION DAY

Sanford 'Sandy' Kaplan ('59, MC) shares Vietnam experience

t was an unorthodox flight in 1953—during which Sanford "Sandy" Kaplan ('59, MC) and a friend buzzed the city of Morristown, N.J., at altitudes of 300 feet and below—that first persuaded Kaplan, then 13, to become an aviator.

"The cops were waiting for us when we finally taxied to one of the empty tie-downs at the Morristown Airport," Kaplan says. "But this was before the FAA, so they just told us not to do it again."

In adulthood, Kaplan would continue to push limits—commandeering a helicopter to rescue a pilot shot down in the Vietnam jungle; flying a helicopter inside the Atlantic City Convention Hall; and attacking a supply ship during the war, which conclusively revealed the Soviet connection to North Vietnam. For this, he received special recognition from Gen. William Westmoreland.

Kaplan shared these and other adventures during Embry-Riddle's Veterans Appreciation Day activities April 16–17 at the Daytona Beach Campus. University President and CEO John Johnson created the event four years ago to thank veterans for their service on a day other than the national holiday.

The Vietnam experience left an indelible mark and gave Kaplan personal knowledge of the phrase "band of brothers."

"The guys that served in the first and second World Wars, Iraq, Afghanistan, Somalia— I understand what they went through and they understand what I went through," he says. "I am thankful for their service, and I'm thankful that I was able to serve my country."

Kaplan is the author of *An Aviator's Story*, which recounts his experiences in Vietnam and as a corporate and commercial helicopter pilot and instructor.



Watch Sandy Kaplan Speak

View the video of Sanford "Sandy" Kaplan ('59, MC) sharing his story: www.eraualumni.org/veteransappreciation2012.

26.2 MILES

John Markham ('96, PC) honors Bataan March survivor with hike

ach year, numerous Embry-Riddle Prescott ROTC students make the journey to participate in the annual Bataan Memorial Death March in White Sands, N.M. Joining university representatives March 25 for the 23rd annual hike was John Markham ('96, PC), a member of the Prescott Campus Board of Visitors and an avid Embry-Riddle supporter.

The 26.2-mile hike through the high desert terrain of the White Sands Missile



Range recognizes World War II veterans who defended the Philippine Islands and sacrificed their health and lives in the process. It serves as a reenactment of sorts of the events that took place April 9, 1942, when U.S. forces

op photo by Grad Images. Brandon Scott Ripato by David Massey, courtesy of Daytona Beach News-Journal. All rights retained and reserved.

surrendered to the Japanese and more than 75,000 U.S. and Filipino prisoners of war were forced to walk over 60 miles without food and water to a camp in the Tarlac Province.

"The important thing about this memorial march is we're not only honoring World War II veterans, but we're also marching in support of our current veterans and wounded warriors," says Markham, a veteran airborne Army Ranger of the 10th Mountain Division.

Senior manager of programs at Cobham Aerospace in Prescott, Ariz., Markham marched in honor of Sgt. First Class Clarence G. Zealor, late father of Prescott Valley resident Mary Zealor Mallory.

"The hike and terrain were painful and at times I wanted to quit, but it was nothing compared to what the Bataan soldiers, who went to hell and back, endured. They were my motivation and it was great to hike in the memory of Mary's father and to shake hands with the current survivors," Markham says.

Bill Thompson ('87, PC), director of alumni relations at the Prescott Campus, also participated in the march.

COMMENCEMENT 2012



Professor Christina Frederick-Recascino shakes hands with 2nd Lt. Kenneth James Stuart ('12, PC) after presenting him with the Ed King Award at the Prescott Campus graduation ceremony in May. The award is named for a longtime supporter and former university trustee, and it honors a graduate who has made an outstanding contribution of time and talent to the university and community.

Stuart donated more than 300 volunteer hours during his four years at Embry-Riddle, helping to raise funds for various agencies and coordinating donor registration at local blood drives.



Graduates with degrees in civil engineering pose prior to 'walking' in the Daytona Beach Campus commencement



Brandon Scott Ripato ('12, DB) celebrates while on stage to accept his diploma at the Daytona Beach graduation ceremony, held May 13 (Mother's Day) at the Ocean Center.



Husband and wife Scott and Kathy Markwith with the Alumni Association's assistant vice president, Michéle Berg, and associate director of outreach, Keith Deaton ('05, DB) at the Worldwide Campus commencement May 5.



A Worldwide Campus graduate and his family enjoy the reception at the Daytona Beach Campus held on the eve of commencement.





A LITTLE HELP FROM FRIENDS

Will Heybruck ('12, WW) completes degree 12 years after start By Kelly Cuculiansky Pratt

"A lot of people

would have just

stopped and given

up, but he didn't."

here there's a "Will" there's a way. Eleven years after financial struggles stalled his dream of graduating from Embry-Riddle, William "Will" Heybruck ('12, WW) celebrated the completion of his bachelor's degree May 5 at the Daytona Beach Campus. Cheering him on were 15 friends and fellow Embry-Riddle alumni who supported him along the way.

Looking back at his cheering section, Heybruck says he realized his happiness

was due to much more than the fact that he was finally graduating with a degree in professional aeronautics.

"I had not only accomplished a goal that I set, but along the way I had unknowingly and unintentionally developed the best support network anyone could ask for," he says.

The financial troubles that put Heybruck's educational dreams in limbo began when family investments that had been earmarked for his education were essentially lost when the stock market plummeted after the Sept. 11, 2001, terrorist attacks. The Charlotte, N.C., native then returned home to get a job and save money.

Heybruck says his "stubbornness," in addition to constant encouragement from his friends, played a key role in getting him back on track with his education.

Close friend Amanda Gregory ('04, DB), who often prodded Heybruck to finish his degree, was one of those who traveled to Florida to attend his graduation. "A lot of people would have just stopped

and given up, but he didn't. He committed himself to graduating," she says.

When Heybruck returned to Daytona Beach in 2004 to resume his studies, his network of Embry-Riddle friends was there. Gregory regularly lent Heybruck her Toyota to help him save money on fuel; he was driving a gas-guzzling vehicle at the time. Meanwhile, Albert Roper ('04, DB) and Peter Nortrup ('04, DB) took care of the rent. A boon for the returning student came when the university offered him a position as a staff safety dispatcher,

> which provided a small salary as well as two tuition-free classes a semester. He took advantage of reduced rates with the employee Eagle Flying Club; and when he was ready, Kristoffer Heimberger ('06, DB) and Adam Wright ('07, DB)

pitched in to instruct Heybruck as he pursued his multi-engine certification.

Heybruck completed his rating just in time for the hiring boom of 2007 and was offered a position at Piedmont Airlines thanks in part to a recommendation from Steven Garin ('04, DB). Still dreaming of a career at a major airline or becoming an officer in the National Guard, Heybruck completed the final hours needed for his degree at Embry-Riddle's Worldwide Campus.

"Doors were constantly opening for me, but it required a door closing to find those newly opened doors," Heybruck says. "The reason I'm forever indebted to my friends, is that they showed me those open doors when I needed them."

PINK POWER

Student Women Ambassadors attend WIA in full force

Embry-Riddle alumni and students were in full force at the 23rd Annual International Women in Aviation Conference, Hosted in Dallas on March 8-10, the conference set the stage for a first-time meeting between the new Women's Ambassador Program (WAP) student representatives from the Prescott and Daytona Beach campuses.

The 16 women student ambassadors shared with alumnae how they can get involved in the university's Women's Initiative, which is working to increase female enrollment at Embry-Riddle and ultimately grow the number of women in aerospace and engineering career fields.

Clad in matching Embry-Riddle blouses and blazers, the women ambassadors "made waves" throughout the



From left, women ambassadors Samantha Foy, Corey Weigand and Krystel Parra visit with a AIW te tean

conference, helping staff the university's trade show booth and visiting with fellow Eagles at the alumni luncheon, says Michéle Berg, assistant vice president of Alumni Relations.

"They did a fantastic job representing the university and our new Women's Initiative," Berg says.

WAP is an Alumni Associationsponsored program that combines the efforts of female students, operating under the umbrella of the Student Alumni Association, and Embry-Riddle alumnae to support and attract women to attend Embry-Riddle. Get involved at www.eraualumni.org/wap.

KEITH SCHLEE ('04, '06, DB) PARTNERS WITH INDUSTRY, EMBRY-RIDDLE TO ADVANCE FUEL SLOSH RESEARCH

By Kelly Cuculiansky Pratt

ight years ago, Keith Schlee ('04, '06, DB) was an aerospace engineering graduate student exploring the negative effects of fuel slosh on spacecraft stability during launch. Today his research, which began in a laboratory at the Daytona Beach Campus, has reached new levels thanks to an ongoing collaboration with Embry-Riddle students.

Under the direction of mechanical engineering professor Sathya Gangadharan, several Daytona Beach students, now alumni, have followed in Schlee's footsteps and helped advance the research to include low-gravity

"It is very humbling to know that something you started has evolved into something more than yourself."

modeling and testing and computational fluid dynamics simulation. Modeling what happens when liquid fuel moves around in a spacecraft tank is critical because of how sloshing can affect nutation and stability, Schlee says. For example, the second stage failure of SpaceX's Falcon 1 rocket launch in March 2007 was partly attributed to fuel slosh.

A Dulles, Va., resident for the past four years, Schlee has played an active role in the experimentation at Embry-Riddle; he reviewed student papers and directed the flow of research, all while work-

ing as a senior propulsion engineer at Orbital Sciences and previously at QinetiQ North America. Schlee and his brother, Bruce, recently started Helical Robotics, a company that develops robots that can scale any type of surface. Schlee relocated to Oregon, Wis., to serve as vice president of engineering and design for the company. In the future, he plans to create internship and/or graduate-level opportunities for Embry-Riddle students.

Schlee says his research partnership with Embry-Riddle students has been "incredible." "It is very humbling to know that something you started has evolved into something more than yourself," he says. "The research has been given a separate life that is perpetuating itself, even though I'm not involved dayto-day. It's amazing."

Some of the highlights of the experimentation include two NASA parabolic flights (in 2010 and 2011) that Schlee, Gangadharan and several students had



Alumni Keith Schlee, top, and Nathan Silvernail, forefront, along with Embry-Riddle professor Sathya Gangadharan participate in a NASA parabolic flight.

the opportunity to participate in through NASA's Facilitated Access to the Space Environment for Technology program. Floating in weightlessness in August 2011 during the most recent parabolic flight, Schlee, Gangadharan, Dillon Sances ('08, '10, DB) and graduate student Nathan Silvernail ('10, DB) performed experiments for United Launch Alliance, as part of Silvernail's thesis on propellant transfer during orbit.

Gangadharan says Schlee's contributions under the NASA Graduate Student Research Program and as an alumnus make him a pioneer in what is becoming a long line of fuel slosh researchers at Embry-Riddle. "It's nice to see the students grow and be successful and, at the same time, come back to Embry-Riddle and give back," Gangadharan says. "I cherish these relationships."

Schlee's research began in 2004 with the building of a pendulum-type device to model how liquid moves in a tank and a computer simulation to accurately replicate fuel slosh. Students have since added to the body of research through their own experimentation. "Now a student can walk in from day one and have a fully functional experiment set up and ready to go," Schlee says.

Industry contacts Schlee developed at Orbital Sciences helped him recently secure a donated rubber diaphragm from ATK Space Systems for the lab. Routinely used in commercial space systems, the diaphragm raises the integrity of the students' findings by creating more realistic flight conditions for their tests.

To see a video on the experiment, visit www.eraualumni.org/reducedgravity.



Bill Hampton ('98, '00, DB), associate vice president of marketing and enrollment management for the Worldwide Campus, left, is pictured with students and alumni at the Singapore gathering.

Eagles convene in Singapore

The Embry-Riddle Alumni Association hosted its largest Eagles reception yet during the 2012 Singapore Air Show. United by their passion for the aerospace and defense industry, more than 100 alumni, students, faculty and friends of the university attended the gathering at the Arts House in Singapore on Feb. 16. Graduates from as far away as Argentina and India attended the event.

/// CLASS NOTES //



To share your Class Notes with Lift and your fellow alumni, join eaglesNEST, the online community created exclusively for graduates of Embry-Riddle. Visit www.eraualumni.org and "Join the NEST" today; or email your announcements to eralumni@erau.edu.

CAREER NEWS

1980s

Hassan Eltaher ('80, DB) authored a book, Aviation & Maritime Security Intelligence, which was published in January. Eltaher is the former chief of Civil Aviation Intelligence and chief of Maritime Security Strategic Planning for the Canadian Department of Transport. Eltaher retired from public service in 2006 and established an aviation and maritime security intelligence management consulting practice.

Matthew J. Falconer ('83, DB) was appointed by Florida Gov. Rick Scott to the board of directors for Workforce Florida Inc. for a term that began Jan. 27 and will last through March 21, 2015. The Windermere resident is the president of Falcon Development, and a member of the Government Efficiency Task Force and the International Council of Shopping Centers.

Mark "Leonard" Berry ('85, DB) participated in the Boeing 727 crashsafety event for Discovery Channel in April (see related article on page 8) and recently released his novel, Pushing Leaves Towards the Sun, as a free online audiobook on Podiobooks and as a podcast on iTunes. Berry welcomes feedback from Embry-Riddle readers and listeners. He also recently earned a Master of Fine Arts in creative writing from Fairfield University.

Alexis Smollok ('85, DB; '89, WW) is deputy assistant director for the Federal Air Marshal Service. She holds a Certified Protection Professional accreditation from the American Society for Industrial Security, is a licensed commercial pilot and an active scuba diver, and is a member of the Senior Executive Service. Smollok visited the Daytona Beach Campus in April and served as guest speaker at the dinner event "Celebrating the Women of Embry-Riddle."

Stephen Blanchette ('86, PC) recently delivered the keynote presentation at the NATO Consultation, Command and Control Agency's service-oriented architecture Technology Watch Day at The Hague in the Netherlands.







Michael Collins ('87, WW) was recently appointed to the board of advisors for CorePLUS, a cloud management platform technology business. Collins resides in Plano,

James T. Hurley ('87, DB) was named in January to the position of vice president of Eastern U.S. and Canadian Sales for Dassault Falcon. Hurley started with Dassault Falcon in 1988 as a sales engineer. Before accepting his current job, he held several regional sales positions at the company.

Bruce Frallic ('89, WW) retired from his position as executive director of the Gulfport-Biloxi International Airport in August. Frallic, who held the post for 26 years, began his aviation career in 1967 as a naval aviator with the U.S. Marine Corps. He later transitioned to civil airports in Pensacola, Fla., and Raleigh-Durham, N.C., moving to Mississippi in 1974. The majority of his 45-year career was spent working in commercial airport management.

Patrick J. Doyle ('90, WW) was honored at Aviation Week's 55th Annual Laureate Awards ceremony March 7. Doyle, a FedEx Express senior manager of power plant and avionics maintenance, led





a collaborative team of FedEx, Boeing and Honeywell engineers to win the 2012 laureate for the Maintenance Repair and Overhaul category and was recognized for his efforts to identify common causes of avionics failures.

Bob Brantner ('91, PC) is a first officer with Delta Air Lines. He is also the author of My Year as an Alaskan Bush Pilot, a collection of stories that documents his first flying job after graduating from Embry-Riddle. It's available in e-book format.

Wayne Brown ('91, WW) was recognized as a "21st Century Trailblazer" in aerospace executive leadership at the National Society of Black Engineers Aerospace Systems Conference in Los Angeles held Feb. 1-4. Two weeks later. Brown was also honored as an industry "driver and doer" at the Black Engineer of the Year STEM (Science, Technology, Engineering and Math) Conference in Philadelphia. He is an operations director for Boeing Commercial Airplanes Manufacturing and Quality in Everett, Wash. Brown has worked at Boeing for 29 years.

Lt. Col. Kelley (Sloan) Marcell ('93, DB) is featured in *Military Fly Moms*, a coffee-table book published in February by Tannenbaum, which showcases 71 female military aviators and mothers. Marcell, a mother of four, is the first female

F-15E weapons systems officer for the U.S. Air Force. She flew the F-15E with the Royal Air Force in Lakenheath, England, and at Seymour Johnson Air Force Base in North Carolina. She is currently a squadron commander at Eglin Air Force Base in Destin, Fla.

Richard J. Greenwood ('94, DB) is a Learjet instructor at FlightSafety International Inc.'s Atlanta Learning Center.

Carlos J. Ruiz-Irizarry ('95, DB) recently published "Pulling Back the Throttle in the Exercise of Personal Jurisdiction Over Air Carriers," in the Issues in Aviation Law and Policy journal of the DePaul University College of Law. Ruiz is a senior associate at Gonzalez and Rodriguez PSC and an adjunct professor teaching aviation law at the University of Puerto Rico School of Law in San Juan, Puerto Rico. He also leads the Embry-Riddle Alumni Spirit Group in Puerto Rico.

Dan "Mili" Milicevic ('95, DB) was selected as the 2011 Training Air Wing SIX Reserve Flight Instructor of the Year. He was also chosen out of 300 naval aviators in 16 squadrons by the chief of naval air training as his nominee for the Reserve Officers Association "Outstanding Navy Reserve Junior Officer" for 2011. He is currently a contract flight simulator instructor for Fidelity Technologies, teaching Navy and Marine Corps student aviators in T-6 Texan II and T-45C Goshawk simulators. He continues to fly as a Navy Selected Reservist with Training Squadron 86 on board NAS Pensacola, Fla., instructing Strike/Fighter WSOs in the T-39 Sabreliner.

Xavier Samuels ('96, DB) was recognized by the city of Houston on March 20 for outstanding community service and accepted a plaque on behalf of the Organization of Black Aerospace Professionals, a

CAMPUS LEGEND

Miami Campus DB Daytona Beach, Fla. PC Prescott, Ariz. WW **Worldwide Campus**

$/\!/$ CLASS NOTES $/\!/$

nonprofit that works to enhance, advance and promote opportunities in aviation. Under Samuels' direction, the organization recently helped sponsor 320 children to attend a special viewing of the George Lucas film Red Tails.

2000s

Brent A. Terwilliger ('00, DB; '05, WW) received a doctorate degree in business administration in aviation from Northcentral University in Prescott, Ariz., after successfully defending his dissertation, "Examining Effects of Visual Interaction Methods on Unmanned Aircraft Operator Situational Awareness." He continues his career as a software engineer for Rockwell Collins.

Retired U.S. Air Force Senior Master Sgt. David Nelson ('00, '08, WW) was selected as the Greater Tampa Chamber of Commerce Military Civilian Employee of the Year at the 2012 Military Appreciation Banquet on Feb. 15 in Tampa, Fla. He was also named the 6th Operations Group Civilian of the Year for 2010 and 2011. Nelson helped create a new Boy Scout troop in Brandon, Fla.; he has also volunteered with Camp Florida, which assists children with disabilities, and the Gulf Ridge Council and Rotary Club 1986. A neighborhood crime watch captain, he has devoted countless hours to his Community Development District, where he supervises the management of a \$1.2 million budget and oversees security and development issues. Nelson is an air operations specialist assigned to the 6th Operations Support Squadron, 6th Operations Group, at MacDill Air Force Base in Tampa.

Kelly M. Austin ('04, DB), vice president of finance and administration at the University of Pittsburgh at Johnstown, was named the new chancellor at Penn State Schuylkill, effective June 1.

Derrick Stanley ('06, '10, '11, WW) was named a 2012 National Society of Black Engineers (NSBE) "21st Century Trailblazer" at the NSBE Aerospace Systems Conference Feb. 1-4 in Los Angeles. Stanley was recognized for his achievements and contributions to the aerospace community, commitment to excellence and overall outstanding performance. He is a systems engineer at Boeing and is continuing his graduate studies.

Martha Spencer ('06, DB) was a meteorologist for four and a half years at CBS affiliate WTVY in Dothan, Ala, While in Dothan, Spencer received two Alabama Associated Press Best Weather Anchor awards, and also obtained her National Weather Association official Broadcasters Seal of Approval. In January 2012 she accepted a job at CBS affiliate WBTW-TV in Myrtle Beach, S.C., as a morning and noon meteorologist.

Capt. Craig McClure ('07, WW) recently began a three-year tour flying the F/A-18D Hornet with VMFA (AW) 225 "The Vikings," based at Marine Corps Air Station Miramar, Calif. After graduation from Embry-Riddle, he completed training in the T-34C TurboMentor at Naval Air Station Whiting Field. He moved on to advanced jet training in the T-45 Goshawk at

Naval Air Station Meridian, Miss. He was awarded his wings Oct. 1, 2010, and received the "Golden Stick Award" for achieving the highest scores of all Marine and Navy pilots in his class. While training with Fleet Replacement Squadron VFA-122 on the F/A-18 A-D Hornet at Lemoore Naval Air Station, Calif., he was awarded "Top Hook" in July 2011, for attaining the highest carrier qualifications score aboard the USS Abraham Lincoln. He resides in San Diego with his wife, Ally.

Matthew Strick ('10, WW) recently reported to pilot training after being accepted as a U.S. Air Force officer. A former Marine Corps service member, Strick submitted his officer package after completing his bachelor's degree in professional aeronautics at the Worldwide Campus (China Lake) in Ridgecrest, Calif.







Ian Barrett and

Dawne Nicholson











Jason Day ('09, '11, WW) joined the aviation department in January at Arizona State University, where he teaches aviation logistics, aviation weather and Canadian Regional Jet aircraft systems. Day is also on the project team to rewrite the jet transition course and revamp the university's flight department with new manuals. "The reason I was so fortunate to land that job was because of my experience on the CRJ, but more importantly my Master of Business Administration in Aviation from Embry-Riddle," says Day, a former Mesa Airlines pilot who was furloughed in 2009. "Nothing feels as good as landing your dream job because of the degree you earned."

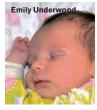
Ariel Talen-Keller ('11, WW) represented the state of Alaska in June at the U.S. All World Beauties National Pageant in Orlando, Fla. Talen-Keller's pageant platform is "GirlsFlyToo"-a project to encourage and educate women of all ages to become involved in aviation. In March, she traveled to Dallas for the Women in Aviation International Conference, where she was a guest speaker for the "Bring Your Daughter to the Conference Day." She also works with the Girl Scouts of Alaska and the Alaska Aviation Museum.

Christopher Thelan ('11, PC) began building a Lockwood AirCam in 2010, while attending Embry-Riddle. The tail-dragger is designed to provide a low-level photography platform with an open cockpit and is powered by two 100-horsepower Rotax engines. After completing construction in April, Thelan and his father, John, a member of the Prescott Campus Board of Visitors, piloted the Lockwood Aircam from Prescott. Ariz., to Memphis, Tenn., where Thelan plans to join air operations at FedEx Express. Thelan, who holds a bachelor's degree in aviation business administration, says he and his father plan to fly to each of the 48 contiguous states and create a photo journal of the experience.

Patrick Mourain ('12, WW) recently accepted a three-year logistics management specialist training program at the Department of the Navy's Space and Naval Warfare Systems Command in New Orleans. Upon completing the program, he will hold a logistics management position at the GS-12 level.











FAMILY NEWS 1980s

Christina (Marsh) Underwood ('89, DB) is an associate manager with the Federal Aviation Administration's Atlanta Aircraft Certification office. She married Benjamin Underwood on April 9, 2011, and they had their first child, Emily Christine Underwood, on Dec. 26, 2011.

1990s

Jered Apgar ('95, PC) and his wife, Colleen, welcomed their son. Colton, on Aug. 7, 2011. He joins his older sister, Marin, 3. Jered is employed by TSM North America.

Jessica (Joles) Slater ('98, '02, PC) and her husband, Heath, welcomed their first child, Connor Alexander, on Jan. 11.

2000s

Amanda O'Brien-Brown ('02, '05, DB) and her husband. Dan Brown. welcomed their first child, Amelia Mary Brown, on Jan. 26. They reside in New York City.

Krista (Kessel) Lander ('08, PC) and her husband, Joffre Lander ('08, PC), welcomed baby Skya Renee Lander, on Sept. 7, 2011. Joffre, a KC-10 pilot in the U.S. Air Force, and his family reside at McGuire Air Force Base in New Jersey.

Adly Espinoza ('11, DB) and Roberto Medina welcomed baby Elian Alexander Medina on March 21 in Vineland, N.J.

MARRIAGES/ENGAGEMENTS 1990s

lan Barrett ('97, DB) and Dawne (Gerard) Nicholson ('98, DB) first met in 1996 at Embry-Riddle. In 2011, Nicholson, an air traffic controller, was living in Fort Worth. Texas, when Barrett, a captain with Pinnacle Airlines in Minneapolis, headed for training at Dallas/Fort Worth International Airport. What started as a dinner date turned into a marriage proposal a year later. They plan to wed in 2012.

2000s

Matthew Kaprocki ('06, DB) and Caitlin Holcomb were married March 10 at the Southern Museum of Flight in Birmingham, Ala. Kaprocki, a pilot at Air Wisconsin, and Holcomb met at the university's Daytona Beach Campus in 2009. Holcomb, a flight instructor and current student, was expected to graduate this summer. Embry-Riddle alumni were among the wedding party.

OTHER

A group of Embry-Riddle alumni and several of their spouses competed in the 2012 Capital Alumni Network (CAN) recreational volleyball league last winter. The team finished with a 3-4 record and came in sixth place in regular season play. The inaugural Embry-Riddle D.C.-area CAN volleyball team consisted of the following alumni: coaches Matt Miglin ('96, '00, PC) and Roberta Zimmerman ('02, DB; '11, WW); and teammates Chad Brewer ('03, DB), Becky Hunter ('04, PC), **Dallas Keller** ('94, DB; '06 WW), Tina Keller ('95, DB), James "Jamie" Kirk ('10, WW), Steve Radican ('03, DB), Kristen Seaman ('09, DB), and Maxwell Sissman ('08, DB).

Mary H. McLemore (Professor Emerita)

JAN. 27. 2012

On the day she passed away, Embry-Riddle Professor Emerita Mary H. McLemore wrapped up an afternoon doing the same thing she's done for a lifetime: giving back to her community.

An avid supporter of the Volusia County Public Library and other local organizations, McLemore passed just



a few hours after finishing her weekly volunteer shift at the Friends of the Library bookstore in Daytona Beach, Fla. Despite McLemore's health issues. Embry-Riddle professor Sarah Fogle says her friend of nearly 40 years continued to live with an "independent and positive spirit," evident by the rich life she had filled with travel, volunteerism, the cultural arts, and teaching in Embry-Riddle's Humanities and Social Sciences Department.

McLemore often said that she was able to live many different lives and enjoyed every one of them. She was also known for saying, "I don't regret anything I've done. I only regret things I didn't do."

In 1952, McLemore (whose maiden name was Heg) married nationally syndicated columnist Henry McLemore, whose work took the couple on assignment all over the world-from Hollywood to Europe. They settled in Daytona Beach in 1962, and soon after, McLemore graduated from Stetson University with a bachelor's degree and later a master's degree in English literature. After completing a doctorate in communication from the University of Central Florida in 1969, she went on to teach at Embry-Riddle for 29 years. She retired in 1998.

Fogle says McLemore was not only a mentor to her students, with whom she kept in touch over the years, but also to fellow faculty members.

"Mary was a wonderful colleague and teacher," Fogle says. "She really cared about her students' success; she just loved Embry-Riddle students."

1960s

Allan B. Ashbury ('62, MC) May 30, 2011

Dennis Zemko ('69, DB) Feb. 17, 2010

1980s

Eddie M. Holton ('81, WW) April 20, 2012

1990s

Edward J. King Jr. (HonDoc '90, DB) Trustee Emeriti, June 3, 2012

Capt. Christopher F. McLeod ('93, PC) 2001

2000s

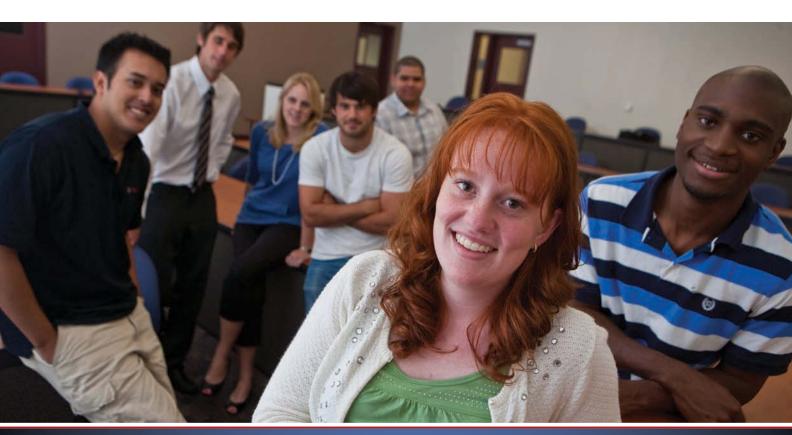
Jesse C. King Jr. ('03, DB) March 22, 2012

David A. Carter ('04, WW) April 17, 2011

Johan R. Royer ('10, DB) April 11, 2011

Others

Ron Frola (former professor) May 28, 2012



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