6-15-1988

Avion 1988-06-15

Embry-Riddle Aeronautical University

Special feature on the Soviet AN-124 aircraft page 9
New flight safety column starts this week with a series on Awareness page 10

An Award-Winning Student Newspaper

Volume 59, Issue 3 Embry-Riddle Aeronautical University, Daytona Beach, Florida June 15, 1988

AMT department acquires classic PT6 powerplant

by Gregory P. Mullin
Avion Staff Reporter

Embry-Riddle's Aviation Maintenance Technology department recently obtained a 579 shaft horsepower PT6 A-20 series turbo shaft engine. This is the latest addition to what is already internationally acclaimed as one of the world's finest operational turbine engine laboratories. Even though the AMT labs are literally cluttered with a variety of other turbine and turbo-fan engines, this PT6 is the school's first operational turbo-shaft engine.

As with most of the equipment in the AMT labs, this particular engine was acquired through a series of "wheeling and dealing." In fact, more wheeling than dealing. For this engine, the school traded five Pratt & Whitney radial engines (donated by the U.S. Navy), one Cherokee 140 aircraft, two Rolls Royce Viper engines, J-34 turbine parts and a host of other items the department considered either redundant or unusable.

Even though at first analysis it appears that the dealer, Mr. Carl Stoltzfus of Avotech, came out far more ahead in profit than the school, faculty members insist that an equilibrium in trade-value was met. For example, a PT6 engine with cowling, propeller, and engine instruments is valued at approximately $75,000 as compared to the equipment that the school traded which was mostly obtained through donations by various aviation-oriented institutions. Theoretically, Embry-Riddle obtained a very popular and expensive engine for a fraction of its market value.

Efforts to obtain the engine however, comprise only half of what is required to prepare the engine for instructional use, comments Ernie Newcomb, the AMT faculty member primarily responsible for the project. For example, the stand on which the engine rests was conceived through the collective expertise of Ernest Miller, Marvin Martin, Ernie Newcomb and George Allen, all AMT faculty members. The actual construction of the stand, the assembly of the engine and the rigging procedures were accomplished mostly by Charlie Fleming, Mark Donigan and Scott Scherer, all of whom are AMT students.

Once completed, the engine will be capable of safely delivering 100% power, with operation in full Beta-range (reverse propeller pitch) as well. Furthermore, there are considerations to acquire a Queen Air fuselage section that will further enhance the authenticity of the system.

It is unilaterally agreed between faculty members and students alike that this engine, upon its completion, will be one of the more unique demonstration set-ups available at the school today. Even though the delicacy of the engine forbids trouble-shooting exercises, it will provide them with invaluable turbo-shaft operating experience as well as add a bit of zest to what is often a monotonous undertaking.

Avion photo by Larry Simmons

AMT's newest toy...
Charlie Fleming, an AMT lab assistant, proudly shows off the newly acquired PT6 engine.

Avion photo by Mike Rapone

A wrecker removes a car driven by Sameul Weir. Weir was critically injured when the car overturned after leaving Catalina, Thurs., June 9. Witnesses report that Weir was operating his car "in a wreckless manner."

Improve skills while overcoming fear of public speaking

by Phyllis A. Salmons
Associate Professor of Physics

Would you like to improve your ability to speak in public? Do you fear that some day your profession will require you to make important presentations in front of knowledgeable colleagues and you will fall flat on your face? Now is the time to become the master of these fears. A good place to start is Toastmasters.

Toastmasters is an international organization committed to helping its members gain skill and confidence in presenting prepared and impromptu speeches, using visual aids and body language. They learn how to conduct a meeting as the master of ceremonies and how to properly introduce a speaker. Also, if you are the one being introduced, you will learn the proper way to assume control of the meeting. Toastmasters is the world's largest organization devoted to communication excellence. Toastmasters organizations may be found around the world.

Members of Toastmasters say there are many important benefits of belonging to such an organization. First, and most importantly, is the self confidence developed by mastering communication skills. Special help is given to those who are prone to say "ah" and "you know" and other extraneous or annoying phrases. Also members are able to overcome certain mannerisms which take away from the presentation, such as wringing of hands, twirling of hair or smacking of lips.

Another benefit often mentioned by Toastmasters is acquiring the ability to listen more effectively. Since most people remember a mere 15 percent of what they hear, good listeners are a premium.

The Daytona Beach Toastmasters welcome Embry-Riddle students, faculty and staff as members or as guests. The Daytona Beach Toastmasters club meets on Tuesdays at 6 p.m. at the ARC Building, 100 Jimmy Ruger Blvd. For more information concerning the Daytona Beach Toastmasters, contact Mary Ward at 239-6709 or Jim Polito at 788-3800.

Car crash claims life of student

by Martin F. Smith
News Editor

ERAU student Timothy Dunn was killed when the vehicle he was riding in lost control and overturned on Bevelle road at 3:45 am Saturday, June 11.

According to Daytona Beach police, Dunn was riding in the front seat of a late model Dodge Shadow, driven by ERAU student Bryon Cail.

Police said that both occupants were wearing safety belts at the time of the mishap, but that Dunn was partially ejected from the vehical and suffered massive head injuries when the car rolled.

Cail recieved several stitches to his face and was released from Halifax medical center. Police said that he may face criminal charges stemming from the mishap, pending the results of a blood alcohol consent test (BAC). BAC tests are routinely performed on occupants of a vehicle involved in a fatal accident.

Police noted that the mishap occured near the curve in bevelle road which deviates to the south to clear the approach to runway 7 right at Daytona Regional Airport. Police stated that this curve "generally kills one or two per year."

A police official stated that there was a lack of skid marks near the scene, which may indicate that Cail was unaware of the upcoming curve as he travelled eastbound on Bevelle.

Police also noted that several empty beer cans were found in the vehicle at the accident scene.

The accident is th 52nd fatal accident in Volusia county this year.

Master's of Aeronautical Science program undergoes major revisions

by Chris Legvold
Aeronautica Editor

The Master of Aeronautical Science degree program has been revised for the Fall semester. The new MAS program will be based on man/machine/system/solution theme, and will have four specializations applicable to different aviation careers.

The program is aimed at all aviation professionals, such as flight crew members, air traffic controllers, flight operations specialists, industry technical representatives, aviation educators, and potential collegiate faculty. According to MAS coordinator, Dr. Charles Richardson, "There is a need in all these professions to have a master's degree if you want get promoted beyond a certain level."

Core curriculum

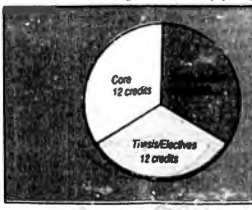
"...So, instead of coming up with four different programs, we decided to come up with one Master's of Aeronautical Science program for the technically oriented or managerial oriented person, and give them some basic knowledges -- which are what's in the core..."

The new MAS program is structured on a three-part basis. The three parts -- the core, the specialization core, and the Thesis and electives -- comprise the 36 credit hours required for the degree.

The core is the theme for the program, in that it develops the man, machine, system, and solution doctrine. The core consists of four new courses: Human Factors in the Aviation/Aerospace Industry, Aircraft and Spacecraft Development, The Air Transportation System, and Research Methods and Statistics.

The man

The Human Factors course explores the human limitations in the light of human engineering, human reliability, stress, medical standards, drug abuse, and human physiology.



Avion photo by Chris Legvold

The course defines the affect of man in aviation and studies the problems and solutions of these factors

The ... hine

The Aircraft and Spacecraft Development course is designed to consider the needs and answers of aircraft design, economic, planning, scheduling, production, supply, and research and development processes.

The system

The Air Transportation System studies the evolution, deregulation, energy shortages, governmental involvement, and international issues of air transportation.

The solution

Research Methods and Statistics develops the problem solving techniques required for a professional in aviation. It includes study in problem identification, hypothesis formulation, design and use of data gathering instruments, and data analysis.

Specialization areas

"...And then, let them specialize in an area that meets their own career goals, and that's why we set up the...specializations ..," explains Dr Richardson

After the 12 core credits, a specialization is chosen in accordance with the student's career goals. The four specialization areas are Aeronautics, Aviation/Aerospace Operations, Aviation/Aerospace Education, and Aviation/ Aerospace Management. Each of these areas offers four courses.

Courses such as Advanced Aircraft/Spacecraft systems, Advanced Aerodynamics, Continuing Education's Role in Aviation, and Research and Development in the Aviation/Aerospace Industry have been revised and now help compose different specialization cores.

see MASTER'S page 3

Trivia: Pioneer 10 left our solar system five years ago Monday. Originally sent 16 years ago to explore Jupiter, Pioneer 10 is still sending radio transmissions which take six hours to reach Earth.

Editorial

Embry-Riddle's "temporary" ugliness

The recent Beautification Award received by the University is definitely a positive sign that the appearance of the campus is finally getting the attention it deserves. Students deserve, nay -- they expect, a University they can be proud of both in terms of the education they receive and the campus setting they receive it in.

Physical Plant has been the dominant force in leading this crusade. The full-time and student employees work tirelessly in the scorching heat to make sure the grass is cut, weeds are pulled, bushes are trimmed, and so on. These few and dedicated workers deserve all the recognition in the world for sprucing up an otherwise bland-appearing campus. However, grass and shrubbery can only do so much.

"Temporary" *things* around the University are reversing this positive trend. The most obvious and unsightly example is the new portable building recently put into place between the Academic Complex and the Engineering Building which will eventually be used for offices. Though space on campus may be at a premium and offices in short supply, putting "cheap" buildings in such a highly visible place is a little absurd.

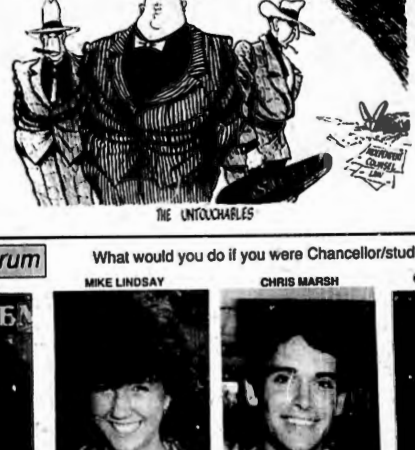
One can hardly wait to see what the portable classrooms near the Catalina Entrance will look like. Perhaps the Association of Portable Classrooms will honor us with their Beautification Award in the near future.

Another item that needs to be addressed is the "temporary" white steel fence located near the Dorm I entrance on Clyde Morris. The fence was put up to decrease the traffic hazard plaguing that area. Though the intention was genuine, having that ugly fence in another highly visible place leads little to be desired. Riddle students have been likened to herds of cattle, but to have a "cattle gate" on the ERAU property just adds to the jest of things.

A small, yet temporary item that is worth mentioning is the benches randomly placed in the grass field next to the University Center. Again, the idea of putting benches underneath these shaded areas was definitely a good idea. However, in such a highly visible place where most students pass and visitors walk by on tours, benches that were not run down or so ancient would definitely make a more positive statement and a more used area.

These temporary fixtures are but a few examples of things that seem to have reversed the beautification measures taken on campus recently. Let us hope that these are truly temporary as the administration claims. After all, the glass offices constructed along the covered walkway at the Academic Complex were also considered "temporary". Though they were supposed to be removed in two or three years after they were built, those glass offices have been there much longer than most of us have!

So much for "temporary" measures.



Student Forum

What would you do if you were Chancellor/student for a day?

LINDSY C. BALL

I want parking improved. I want summer activities for the students that are much here as an incentive for staying here over the summer.

MIKE LINDSAY

There's so much! Parking is atrocious! There's so much! There isn't much time. What can I do in a day.

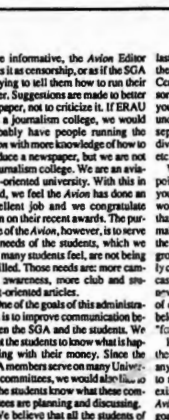
CHRIS MARSH

I'll give him to my flight course. They're dragging me for four weeks now...I might be kicked out of my room. I don't know why!

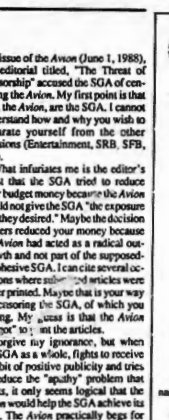
CHERYL LABOMBARD

I'd see what I can do about AH and RS charges. I'd give a raise to the people that work in the Financial Aid Office because they work so hard.

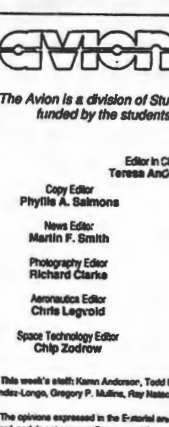
HEATHER LOGAN



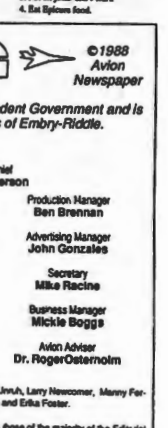
BRIAN BOWIE

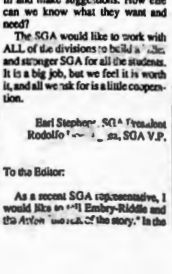


LARRY RICE



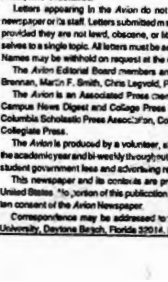
CHANCELLOR DOTEN



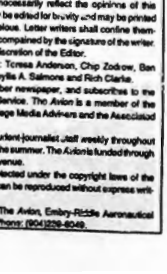


Mom Women's sports. More clubs, and maybe even an aerobics class. Parking is also very frustrating.

I'd probably have him sit down with the students, like a rap session. I'd stop security from giving parking tickets.



I'd like to see all the students and faculty at a classy, black-tie pool party, with imported beer and dill pickles with mustard.



1. I'd love to go flying.
2. I love being a student.
3. Put on jeans and t-shirt.
4. Eat Epicure food.

Letters to the Editor

Kudos from McDuffee

To the Editor:

This letter was sent to Mark Mlsunas from Paul McDuffee.

On Friday, May 20, 1988, while conducting a dual training flight in one of the University's Cessna 172RG aircraft, you experienced a landing gear malfunction. After several futile attempts at attempting to extend the landing gear, preparations were begun for a gear-up landing.

Prior to committing to the potentially hazardous landing, you attempted one more unique maneuver which apparently was successful. As a result, severe aircraft damage and injury to the occupants was avoided.

Not only did your actions avoid catastrophe, the lessons learned may have positive effects on owners of similar aircraft. Cessna is most interested in the technique you used to extend the landing gear.

On behalf of the Flight Technology Department please accept my sincere congratulations on a job well done.

Sincerely,
Paul E. McDuffee
Chairman, Flight Technology

Editor's note: For more details, see last issue's Letters to the Editor (June 1, 1988).

SGA officers reply

To the Editor:

The Student Government Association has six divisions; the *Avion*, the *Phoenix*, Entertainment Committee, the Student Representative Board, the Student Court and the Student Finance Board. Each are separate entities in that they each conduct their own business in their own way. No one in the SGA tries to tell the other divisions what they should or should not do so long as they follow the SGA Constitution and By-laws.

A recent editorial in the *Avion* (June 1, 1988) implied that the SGA was trying to censor the material that is printed in the Avion. This is not true. All the SGA asked for was a small space in the *Avion* in order to inform the students of what the SGA is doing for them. Many times in the past, the SGA has submitted informative articles to the *Avion* that were not printed. The students are constantly asking the SGA to communicate with them. Well, that is what we are trying to do. When we were told they don't always have the space for our articles, we suggested they postpone one of their articles on NASA for a later issue. This is what they referred to as censorship.

The *Avion* stated that the SGA doesn't fund them, but that the students do. That is true. But who is the SGA? We are the students! We were elected by the students to represent them. Of course all funds received by the SGA's divisions go into a general SGA fund, but each division draws up its own budget each semester and is approved by the Student Finance Board. This board is made up of students who are affiliated with any of the other divisions. Last year the SGA acquired a $15,000 loan so that the *Avion* could purchase a laserwriter. The *Avion* began paying back the loan out of their budget until last month. At that time the SGA paid off the balance of $11,628.77 from the sale of Aeronautilus to the University. No one has even suggested that the *Avion* should repay the SGA so that other things could be purchased for the students.

It seems that for years there has been a conflict between the *Avion* and the SGA office. Whenever someone in the SGA makes a suggestion as to how the *Avion* might be better or more informative, the *Avion* Editor takes it as censorship, or as if the SGA is trying to tell them how to run their paper. Suggestions are made to better the paper, not to criticize it. If ERAU was a journalism college, we would probably have people running the *Avion* with more knowledge of how to produce a newspaper, but we are not a journalism college. We are an aviation-oriented university. With this in mind, we feel the *Avion* has done an excellent job and we congratulate them on their recent awards. The purpose of the *Avion*, however, is to serve the needs of the students, which we and many students feel, are not being fulfilled. Those needs are: more campus awareness, more club and student-oriented articles.

One of the goals of this administration is to improve communication between the SGA and the students. We want the students to know what is happening with their money. Since the SGA members serve on many University committees, we would also like to let the students know what these committees are planning and discussing.

We believe that all the students of ERAU should have a say in what kinds of articles should be printed. We in SGA, encourage students to come in and make suggestions. How else can we know what they want and need?

The SGA would like to work with ALL of the divisions to build a basic and stronger SGA for all the students. It is a big job, but we feel it is worth it, and all we ask for is a little cooperation.

Earl Stephens, SGA President
Rodolfo [illegible], SGA V.P.

To the Editor:

As a recent SGA representative, I would like to tell Embry-Riddle and the *Avion* "the rest of the story." In the last issue of the *Avion* (June 1, 1988), the editorial titled, "The Threat of Censorship" accused the SGA of censoring the *Avion*. My first point is that you, the *Avion*, are the SGA. I cannot understand how and why you wish to separate yourself from the other divisions (Entertainment, SRB, SFB, etc.).

What infuriates me is the editor's point that the SGA tried to reduce your budget money because the *Avion* would not give the SGA "the exposure that they desired." Maybe the decision makers reduced your money because the *Avion* had acted as a radical outgrowth and not part of the supposedly cohesive SGA. I can cite several occasions where submitted articles were never printed. Maybe that is your way of censoring the SGA, of which you belong. My guess is that the *Avion* "forgot" to print the articles.

Forgive my ignorance, but when the SGA as a whole, fights to receive any bit of positive publicity and tries to reduce the "apathy" problem that exists, it only seems logical that the *Avion* would help the SGA achieve its goal. The *Avion* practically begs for the staff to help write articles and when one is written and handed to them, it's not printed.

I hope the *Avion* breaks out of its jealousy trap and sees that the entire SGA works hard for the students (without pay), not just the *Avion*!

Varus Nikore
Box 7878

avion ©1988 Avion Newspaper

The Avion is a division of Student Government and is funded by the students of Embry-Riddle.

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Mike Racine

Aeronautics Editor
Chris Legvold

Business Manager
Mickie Boggs

Space Technology Editor
Chip Zodrow

Avion Adviser
Dr. RogerOstemoln

This week's staff: Karen Anderson, Todd Unruh, Larry Newcomer, Manny Fernandez-Longo, Gregory P. Mullins, Ray Nates and Erika Foster.

The opinions expressed in the Editorial are those of the majority of the Editorial Board, and do not necessarily represent those of the university, the staff of the *Avion* or the members of the student body. Opinions expressed elsewhere are those of the writer, who is identified.

Letters appearing in the *Avion* do not necessarily reflect the opinions of this newspaper or its staff. Letters submitted may be edited for brevity and may be printed provided they are not lewd, obscene, or libelous. Letter writers shall confine themselves to a single topic. All letters must be accompanied by the signature of the writer. Names may be withheld on request at the discretion of the Editor.

The *Avion* Editorial Board members are: Teresa Anderson, Chip Zodrow, Ben Brennan, Martin F. Smith, Chris Legvold, Phyllis A. Salmons and Rich Clarke.

The *Avion* is an Associated Press member newspaper, and subscribes to the Campus News Digest and Collage Press Service. The *Avion* is a member of the Columbia Scholastic Press Association, College Media Advisers and the Associated Collegiate Press.

The *Avion* is produced by a volunteer, student-journalist staff weekly throughout the academic year and bi-weekly through out the summer. The *Avion* is funded through student government fees and advertising revenue.

Correspondence may be addressed to: The *Avion*, Embry-Riddle Aeronautical University, Daytona Beach, Florida 32014. Phone: (904)258-8049.

Noted poet Diane Ackerman offers *Avion* interview

by Jan Goodrich
Assistant Professor of Humanities

"I haven't got it," you say weakly, covering the graph with one palm. "Use words."

Hey, what is this? Did someone bug your debriefing after your first flight? Well, no: it's actually an early passage in the book *On Extended Wings*, written by a poet named Diane Ackerman, a poet who eventually did get it--and got it well enough to become not only a licensed pilot but also a semifinalist in NASA's Journalist in Space project.

This month Diane Ackerman is one of three Master Artists in Residence at Atlantic Center for the Arts in New Smyrna Beach. As part of ACA's Master Artist Outreach Program, she will visit Embry-Riddle tomorrow night, June 16, to read poems and selections from *On Extended Wings*. Admission is free to both the reception in Ackerman's honor to begin at 7:15 p.m. on the Flight Deck and to the 8 p.m. reading in the U.C.

Intense curliness is the first thing you notice about Diane Ackerman. Visualize Bette Midler with black black hair; smoky eyes; a small tight body: sensual femininity and intellectual intensity promising, at any minute, to run wild in the streets. Only there aren't any streets here in the primal scrub-oak and palmetto woods at the arts center on the edge of Turnbull Bay; New Smyrna Beach Airport lies not quite a nautical mile to the south. It's as good a place as you can find for a conversation focused on art and aviation, one which begins with another passage from *On Extended Wings*.

AVION: *The Cessna 150 responds to every twinge of the wind; even on calm days there is no taking it for granted. . . . You can never stop deciding, never stop correcting, never lose control for long. Loss of control is what you crave, of course; otherwise sex wouldn't boil you out of your flesh with such willingness. Loss of control is part of what appeals to you about flying. . . Tap the original spectacle of life, when waking is adventure, and you are home and free.* This mentions a plane and flying, but it seems also to refer to a poem and creating. How are they the same for you? What made it inevitable that you would become, first, an artist, and eventually, an aviator?

ACKERMAN: I always wanted to fly, from the first moment I walked outside and discovered there were things on this planet that flew. I suppose there are ways in which flying and creating are the same. . . . I think it's a question of your relationship with the Universe, more than anything else. If you are of a creative cast of mind, then you will use flying as an instrument to learn about the world, and it will become a creative enterprise.

Maybe that isn't the best way to train as a pilot; maybe that isn't the best attitude; I don't know. *Attitude* is something my flying book is very much about. One of my flight instructors suggested that an artistic attitude was the wrong attitude for handling an airplane. I'm not sure that's true, but I know that in high-danger enterprises, the more mundane you can make what you're doing, probably the safer you are--so that may be true. . . .

I have a very nomadic curiosity about the world

. . . . The thing about flying is, it's a way to learn about a large realm of human experience. You can learn about our culture, our history, our society; about how the atmosphere works, about engineering; you can learn so many things about nature. You can learn how people settled cities and countries, and what a valley is: all kinds of things that you couldn't possibly learn if you didn't happen to be floating over the world at about 5,000 feet.

AVION: What does your poethood bring to your pilothood, and vice-versa, and what does your womanhood bring to both?

ACKERMAN: The flying book is very much about taking charge of your own life. It's more a book about *not being a passenger* than a book about learning how to fly--although it's also about what flying teaches you about the world that you can't learn unless you fly. There are certain things you can really only discover from certain perspectives; that was one profound lesson I learned from flying . . . as a poet, it's given me a different perspective.

I think that being a poet means you have a more highly-tuned sensitivity to life in general . . . and pilot friends have told me that I've thrown light on things that were somewhat dim for them. I've reminded them of the innocence they first had when they began to fly, reminded them of a lot of the things they now take for granted. It's *safer* that they now take these things for granted--but the minute you do that, you lose a certain level of marvel and wonder. So I suppose my poetry brings to flying a renewed sense of wonder. . . .

I was astounded that pilots said things without realizing what they were saying. "Departure, I am with you." I can't imagine pilots leaving an airport--saying this extraordinary, heartbreaking thing--and just not thinking about it. . . . *What a thing to say.*

I don't know if a woman brings to flying something different than men do. . . . When I hear people on the radio, it's clear that men have a different attitude to flying than women do. . . . Men will try to brave it out, make jokes about the danger they were in, rather than say, "I'm really iced up--GET ME OUT OF HERE!" I say, "Get me out of here" and don't identify my ego with the plane. I'm sure a lot of men don't, too, but I have noticed that's sometimes true.

AVION: Your book describes encounters with four men who were, either formally or informally, your flight instructors; the contrasts in their styles of communicating with you come through very clearly. As only a fledgling pilot but a communication ace, you must have suffered special frustration with at least two of them.

ACKERMAN: The instructors I had who were very poor were excellent pilots, both very smart, both very good engineers--they just didn't know anything about teaching. . . . Also, they were deeply limited by only having one kind of vocabulary . . . math talk, engineerneak. Somebody whose only tool is "a key" is going to assume that every problem is "a lock." Teaching involves figuring out how your student needs to be taught; it doesn't involve just telling somebody how *you'd* do it if you were there. Figuring out how your student needs to be taught requires a certain suppleness and flexibility that not everybody has. . . .

I just relentlessly kept saying, *"Use words*, give me an image, *show* me with your hands."

If instructors could, ahead of time, try to think through the simplest, most vivid way to explain something, it could save everybody a lot of commotion. . . . I would say the best way to teach flying is to *try everything*. If something doesn't work, try something else.

AVION: Let's say things go so well for NASA that they revive the Journalist in Space project and you win the slot. What "beat" will you assign yourself?

ACKERMAN: To a large extent, I think the twenti-

(see POET, page 6)

Space math returns this Fall

by Phyllis A. Salmons
Associate Professor of Physics

In the Fall of 1988, Space Mathematics (MA 195A) will be offered by the Mathematics and Physical Science Department. The course serves as a technical elective for those in the Flight Programs, Aviation Computer Programming and Aviation Maintenance programs (not however, for students who select the Avionics option). The course may be used as an open elective for all other majors.

The purpose of Space Mathematics is to demonstrate the application of algebra and trigonometry in space science. Students will study the units of measurement used in space technology; launch and re-entry velocities and accelerations; force and acceleration of gravity on the moon and on an asteroid; and g-forces on an astronaut. Students will analyze the behavior of sounding rockets upon launch and return to earth. The reliability of spacecraft systems, multi-stage rocket design, and tracking of model rockets will be discussed.

Space Mathematics is a course which was designed and is being taught by Dr. Shrinivas Dalal. In the fall, the class is scheduled on TR at noon. The text for the course is a NASA publication entitled *Space Mathematics*.

Students may register for MA 195A during the fall term registration periods. If there are questions about course content or registration, contact Dr. Shrinivas Dalal at 239-6658.

MASTER'S

continued from page 1

The Thesis

"...But," continues Dr. Richardson, "one of the shortcomings that we felt that the master's program had, and this was all master's programs -- and this has been corrected, was that there was no major writing requirement or research requirement. And, most good master's programs have a research requirement..."

Another new addition the the MAS degree is the requirement of either a Graduate Research Project or a Thesis. Both are meant to help the student problem solve and explore the writing arena.

The Thesis is a six credit course which requires the student to present and defend a publishable research paper. The student must request help from three faculty members and form a Guidance Committee.

The Graduate Research Project is a similar project; however, it is a three credit course, and therefore, less extensive. It is meant to introduce the student to the same objectives as the Thesis, but it is not defended by the student or assisted by a Guidance Committee. Rather, a single adviser is required.

Electives comprise the last of the credits. Several new electives have been added to the revised courses: Helicopter Operations, Advanced Avionics, and Adult Teaching and Learning Techniques all help to augment the MAS program.

Admission requirements

Admission requirements to the MAS have been increased drastically, opposed to the previous requirements of only a degree from an accredited college or university.

In addition to having a bachelor's degree, a minimum combined GRE score of 1000 on the verbal and quantitative sections, a minimum 2.5 GPA (out of 4.00), and a minimum of two years of aviation experience are required. The aviation experience can be anything from a private pilot's license to undergraduate work at Riddle.

The new MAS program is the result of a year and a half of work by a revision board. The members were Dr. Richardson (who chaired the board), Dr. William March, Dr. Peggy Baty, Professor Leslie Kumpula, and Dr. Ozrow Baker.

Orbital Inclinations

NASA needs to set long range goals in space

Research and development on a manned Mars mission and a Lunar Base should begin soon

by Chip Zodrow
Space Technology Editor

With the United States getting back into the space business, it is time to begin setting some solid goals for long range plans for America in space. Two definite projects that need some serious research and development are the manned Mars mission and establishing a Lunar Base around the turn of the century.

As an Aerospace Engineering student planning on becoming an astronaut after going to school for years upon years, I would like to see definite plans laid out for a joint effort to Mars with the Soviet Union. A joint effort would mutually enrich both country's ongoing programs.

Hopefully the U.S.'s Advanced Launch System (ALS) will be in operational mode by the time the project gets under way. If this is so, the ALS can be used to ferry pieces of the Mars spacecraft up to orbit. From here it will be assembled in space with astronauts and cosmonauts flying together to the red planet. If the ALS is not operational, the Soviet's heavy-lifter launch vehicles could carry the spacecraft up to orbit.

Concerns have been raised over the problems of exchange of equipment resulting in technology transfer. However studies conducted by the National Academy of Sciences have shown that reverse engineering based on equipment but lacking detailed manufacturing knowledge rarely results in technology transfer between two countries.

The launch of *Discovery* in late August should mark the beginning of intense research and development for the long range goals. A steady increase in NASA's budget and an increase in scientific and planetary studies will result in a gain in the U.S.'s technology and position in the space race. The addition of many private and independent space related companies will also lead to the United States gaining a lead in the space race.

Without NASA budget increases and research and development increases, the long range goals will be delayed over and over. The U.S. must act soon and must continue to steadily fund the projects they approve.

Shuttle *Discovery* in countdown to launch

by Chip Zodrow
Space Technology Editor

KENNEDY SPACE CENTER – With the arrival of summer comes the arrival of many space launches. To headline the list of launches, the Space Shuttle *Discovery* is going to be mated to the external tank (ET) and the solid rocket boosters (SRB) in about one week. This is following the mating of the ET to the SRB's last week inside the Vertical Assembly Building.

Discovery will be rolled out to the pad during the very early hours of June 25. From here it will remain at the pad for two months awaiting its cargo and then its final go ahead for launch.

The Kennedy Space Center (KSC) has a target date for a launch on the 22nd of Aug., while Johnson Space Center has a launch date of Aug. 29. NASA officials have stated that the discrepancy is due to the fact that the target date at KSC is set so that it can leave a leeway of one week if any unseen anomalies arrive. It is expected that once the flight readiness firing of the main engines is conducted in mid-July, NASA administrators will set a final date for the launch. The flight readiness firing is when the main engines are fired for 20 seconds on the pad to test the entire performance of the shuttle.

Astronaut and Deputy Director of the National Space Transportation System Operations, Robert Crippen, stated that "we will launch when everything looks okay, but the final 'go' will not come until T-9 minutes."

He also commented on the full scale simulation that was held on the 7th of June. The simulation was the first joint effort of both management and the console people since the *Challenger* accident. The simulation went very well although "some rough edges were found and will be smoothed out."

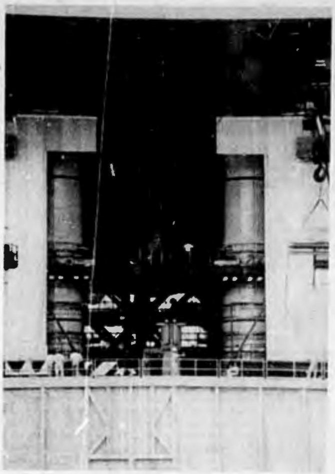
Administrators also stated that they are now in a very structured integrated flow process. They also state that the target date is optimistic, but morale and motivation is very high within the processing teams.

Besides the shuttle launch there will be a Scout launch from the Western Space and Missile Range in Calif. The launch to be held today will place a Navy navigation NOVA II satellite into low-earth orbit. The Scout is a smallest of NASA's expendable launch vehicles.

A Martin Marietta Titan IV is also on the pad at the present time. Titan IV's are the largest classed rockets. It is expected to launch sometime in mid Aug. from Cape Canaveral. It will carry a Department of Defense satellite into orbit.

Foreign spacefarers are also making progress. The Soviet Union is planning a launch of its space shuttle anytime in the near future. The first flight of the "American looking" Soviet shuttle will be unmanned.

Arianespace is also planning a launch in the near future. The first flight of the Ariane 4 was to take place on June 10, but was delayed until sometime later this week. It will lift off from French Guiana, and will carry three satellites into geostationary transfer orbit. The Ariane 4 has been designed to adapt to numerous different payloads and mission scenarios. Arianespace is proposing to build and launch 70 Ariane 4's.



Avion photo by Chip Zodrow

Fill 'er up...
Kennedy Space Center workers are seen in front of the mated external tank and solid rocket boosters inside the Vertical Assembly Building. They were mated last week and are awaiting the arrival of Discovery from the Orbital Processing Facility later this week. The orbiter will then be mated to the boosters and external tank next week with a rollout to the pad expected on June 25.

Solid rocket motor is tested in Utah

National Aeronautics and Space Administration

The fourth full-duration test firing of NASA's redesigned Space Shuttle solid rocket motor is scheduled for 1 p.m. MDT, Tuesday, June 14, at Morton Thiokol's Space Operations facility near Brigham City, Utah.

The test is part of the Shuttle solid redesign program. The verification and qualification test program, to certify the solid rocket motor redesign, consists of five full-duration tests prior to the planned resumption of Shuttle flights in August 1988. This test will be the fourth of those five.

The 126-foot-long, 1.2-million-pound motor, designated Qualification Motor-7 (QM-7), will undergo a full-duration horizontal test firing of 2 minutes. The test will be the first to be conducted in a new test stand at Morton Thiokol.

One remaining full-duration test, Production Verification Motor-1 (PVM-1), will be conducted in July, prior to the next Space Shuttle flight.

Morton Thiokol is NASA's prime contractor for the solid rocket motor, and Marshall Space Flight Center, Huntsville, Ala., manages the motor program for NASA.

Maplewood
Trading Places
Be Chancellor For A Day!!

creases, the long range goals will be delayed over and over. The U.S. must act soon and must continue to steadily fund the projects they approve.
Morton Thiokol's Space Operations facility near Brigham City, Utah.
The test is part of the Shuttle solid redesign
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the solid rocket motor, and Marshall Space Flight Center, Huntsville, Ala., manages the motor program for NASA.

Notices

FAA examinations

Embry-Riddle Aeronautical University will administer FAA Pilot and/or Instructor Written Examinations for the Following:

1. (PA) PRIVATE PILOT-Airplane
2. (CA) COMMERCIAL PILOT-Airplane
3. (FIA) FLIGHT INSTRUCTOR-Airplane
4. (FOI) FUNDAMENTALS OF INSTRUCTING-Flt. & Ground Instructor
5. (BGI) FUNDAMENTALS OF INSTRUCTING-Basic
6. (AGI) FUNDAMENTALS OF INSTRUCTING-Advanced
7. (ATP) AIRLINE TRANSPORT PILOT-Airplane (FAR part 121)
8. (ADX) AIRCRAFT DISPATCHER
9. (ATA) AIRLINE TRANSPORT PILOT-ATP Airplane (FAR 135)
10. (IRA) INSTRUMENT RATING-Instrument pilc: airplane
11. (FII) INSTRUMENT RATING-Flight Instructor-Airplane
12. (IGI) INSTRUMENT RATING-Ground Instructor-Instrument
13. (FEB) FLIGHT ENGINEER-Basic
14. (FEJ) FLIGHT ENGINEER-Turbojet
15. (FEX) FLIGHT ENGINEER-Turbojet/Basic

DATETIMEPLACE
June 110830H-113, GRW Complex
June 140830H-120, GRW Complex
June 280830H-113, GRW Complex

Students intending to take an FAA Pilot Written Examination are required to sign up in Office D-209 or call extension 6800 prior to examination day.

At the time of the examination, each student must present a receipt for pilot exam fee, validated by the cashier's office; a written authorization form signed by an appropriate Aeronautical Science Department ground instructor, or the failed results of a previous FAA written examination, and present as personal identification an Airman Certificate, driver's license, or other official document.

Explanation of appropriate forms and procedures will be given at 0830. Immediately thereafter, testing will commence and unless prior arrangements have been made, late examinees will not be permitted to enter the examining area while testing is in progress.

Last summer gradutation - August 20, 1988

Summer graduation application are being accepted in the Registration and Records Office for those students anticipating Summer (June or August) completion. Students completing the application will be given a graduation evaluation in order to have a smooth completion. Please be advised that NO DIPLOMA will be ordered if formal application is not made in the Registration and Records Office by 4:00 p.m. June 17, 1988. Check with the graduation evaluators, ext. 6345, or 6343, if you have any questions.

Please note: All Summer degrees will be conferred and Diplomas will be dated August 20, 1988. Diplomas will be released in the Registration and Records Office after the Commencement ceremony. However, if a student needs verification of degree completion atthe end of Summer A term, a request may be made through the Registration and Records Office.

December graduation:

December 1988 prospective graduates may now apply for December 1988 graduation in the Registration and Records Office. When formal application is made, a Preliminary Graduation Evaluation will be processed to help provide a smooth completion. If you have any questions regarding graduation, please contact the graduation evaluators on extensions 6345 or 6343.

Softball Playoffs

The ERAU Intermural softball playoffs will be held in a single elimination format on Thursday, June 16th and Friday, June 17th. There was also a game on Monday, June 13th.

Octoberwest

Embry-Riddle Aeronautical University's OCTOBERWEST '88 Alumni Reunion, October 8-9, 1988, held in conjunction with the Northern Arizona Air Festival (air show), Prescott, Ariz. For information contact Embry-Riddle Aeronautical University, Alumni Relations, Daytona Beach, Fla. 32014 or call 800-447-6818 (in state) 800-643-0799 (out of state).

Aviation Homecoming

Embry-Riddle Aeronautical University's AVIATION HOMECOMING FESTIVAL Alumni Reunion, November 10-12, 1988, Daytona Beach, Fla. Class reception for reunion classes ending in three and eight. Veterans Day Celebration. For more information contact Embry-Riddle Aeronautical University, Alumni Relations, Daytona Beach, Fla. 32014 or call 800-447-6818 (in state) 800-643-0799 (out of state).

Senior meeting

The first meeting for all August Graduates will be held on Wed., June 15, 1988 at 8 p.m. in the University Center. Elections for Senior Class President and Vice President will take place. Important Graduation information will be reviewed. There will be no rehearsals for Graduation, so it is important that you attend. If your schedule does not permit your attendance, please see the Student Activities Office. Thank you.

Library summer hours

From June 28-29, the library will be open from 8:00 a.m. to 5:00 p.m. Regular hours will resume June 30. The library will be closed July 2, 3 and 4.

SGA positions

The Student Government Association needs representatives for the student representative board, student finance board, and student court. Applications and further information are available in the SGA office.

Cap and gown rentals

The orders for cap & gown rentals for August's graduation will be taken at the University bookstore from June 13, 1988 through June 27, 1988. All faculty and staff members wishing to rent a cap & gown for the graduation ceremony must place their order within this time frame.

Fire alarm testing

Please be advised the Physical Plant will conduct a test of all fire alarms campus wide. This test will begin at 8 a.m. on Monday, June 27, and continue through 5 p.m. on Friday, July 1, 1988.

Special exhibition at the museum

The museum of Arts and Sciences will present a special exhibition and reception to honor Reid Hughes, a local businessman who has served on many R.S.V.P.'s Board of Visitors for many years.

The reception and exhibit of Art from the Reid Hughes Collection will be held on Saturday, June 18 from 7-9 p.m. in Gallery 3 at the Museum of Arts and Sciences, 1040 Museum Blvd., Daytona Beach.

Anyone interested in attending should R.S.V.P. by June 15 by calling 255-0285. A donation of $15 per person will benefit the Museum Center at Spruce Creek. This exhibition and reception is for one night only.

WINDSURFING CLUB

by Mike Miller

The Halifax Sailing Assoc. results: 1st, Randy Wilhelm; 2nd, Dan Bilodeau (102ER); 3rd, Paul Fremont; 4th, Mark Donigan (111ER).

Sandy Point results: Open unlimited class-Chris Walker, Mark Graham, Mark Rich, Paul Fremont, and fifth to Joe Collins (119ER). In the limited class, ERAU students dominated the competition. 1st, Al Wade (114ER), Dan Bilodeau (102ER), Sally Wolfarth (131ER), Georgia Gambrel, and in the 5th place slot, Bill Dolan (110ER).

Upcoming Races: June 12, Central Florida Boardsailing fifth points regatta-Orlando; June 18, Playland Windsurfing Regatta-Titusville; June 25, Panama City Fun Cup-Panama City; July 4, Independence Race-Jupiter.

The next club meeting is scheduled this Sunday-location TBA. All active members should attend because there is a good possibility that our club will be recieving a MAJOR sponsor to race. One last note, we have a new short board thanx to SGA! Also, congratulations to Bill Dolan who is the Boardhead of the month-PFW.

AAAE

The summer membership in AAAE can be what you make of it. This is a good time to plan and organize for a terriffic Fall recruitment, lots of speakers, several airport tours, and various social events. Besides the planning activites, the "sky's the limit" on the functions we can hold during the hot summer months!

The second meeting is scheduled as follows:

Date: Thursday, June 16, 1988
Time: To be announced.
Location: Common Purpose Room (CPR) located in the U.C., next to the Information Desk.

Sabrina Petchel and I are eager to divulge our experiences and information gained from the 60th Annual AAAE Conference and Exposition we attended, May 21-25 in Las Vegas, Nevada. Please plan to attend! I will also have AAAE student membership applications available. This will help set up an accurate directory for everyone to have. The dues are $5.00 for the summer term...please bring it with you to the meeting.

Another idea I have is a Car Wash to raise funds for an airport tour or for a super social event. So far, it is planned for:

Date: Sunday, June 19, 1988
Time: Noon until about 5 p.m.(latest)
Location: Ice Cold Auto Air - SE corner of Volusia and Ridgewood Ave.

Come to the meeting and we will discuss this activity and open the floor for everyone's input.

POET

(continued from page 3)

eth century will be remembered as the time when we first began to understand who our address is. And we began to think in terms of leaving our House, walking across the street, looking back and saying "that's where I live," strolling around the neighborhood. Just trying to understand what our real Address is.

I would love to go into space and see everyone I've ever known, every experience I've ever had, all in one place. See the complete organism of the planet; the weather systems over the Amazon affecting the grain yield in Asia; the planet with no political boundaries.

I think we desperately need those kinds of images. We don't need people coming back and saying "gee whiz," and that's pretty much what we've had. We need artists in space: people who are going to go up and *feel*. . . . That's what my beat is.

Icarus fell from the sky, but never from the thermal of his desire. . . . There is no other cure for it, this fidgeting of the will, no cure but rushing up into the blue basin of the sky, where time and cloud maneuver, and one has a view of Creation wide, bright, and flowing . . . it's only when the red, white, and blue airport lights mix like a scrambled flag beneath you, and you climb away, that real astonishment menthe gins.

Oh yes, Diane Ackerman's got it. You hear it when she *uses words*.

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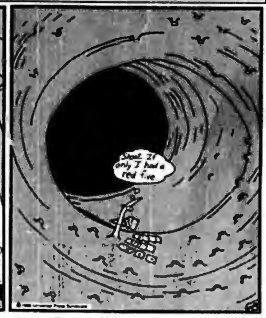
Garfield© — Jim Davis

The Far Side — Gary Larson

Becoming a rogue in his later years, Dumbo terrorized the world's flyways.



The last cilium on a smoker's lung

"Yeah, yeah, buddy, I've heard it all before: You've just metamorphosed and you've got 24 hours to find a mate and breed before you die. . . . Well, buzz off!"

"First of all, this is going straight back — and I'll just have a little chat ..ith whoever placed the order."

breed before you die. . . . Well, buzz off!"

"Crimony! ... Seems like I just cleaned out that fixture last week."

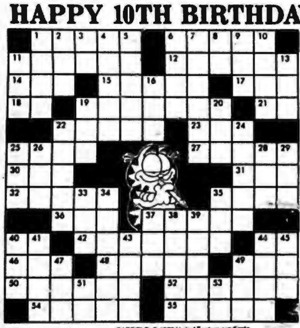
Mountain families

Bloom County — Berke Breathed

Shoe — Jeff MacNelly

The Puzzle

HAPPY 10TH BIRTHDAY, GARFIELD!



GARFIELD: © 1978 United Feature syndicate

ACROSS

1 What GARFIELD'S adventures might become
6 He has seven — of toes
11 World's cutest kitten
12 What he likes to do to the mailman
14 Gold: Sp.
15 Bridle parts
17 Mr. Whitney
18 Norse god of war
19 Pictured here, he's the "Caped —"
21 "The Wizard of —"
22 Odie, at his best
23 What he does to Jon's trousers
25 His pet ...
27 What he might call Arlene
30 Answer to "Lasagna, GARFIELD?" were he French
31 Lubricate
32 What he does to Jon's furniture
35 Response to "Let's abuse Odie"
36 Female deer
37 Lyle, compared to GARFIELD
40 "I hate Mondays. I need something to cheer me —"
42 This is his favorite dish
44 Prosecutor: abbr.
46 A frequent "attack"
48 Strays (off course)
49 ...
50 ... creature frightens him
52 His might read: "Here lies Amoeba Man"
54 "When you diet, you ... —"
56 If they had them for eating, GARFIELD would be an "A" student

DOWN

1 Weird: var.
2 At eating, he is one
3 "— a party animal"
4 Chisel
5 Six a.m. is his favorite time for this
6 Hunger —: what he gets at the sight of food
7 Affirm
8 "Eating — ..."
9 Sail yard Scot.
10 He'd probably love to have one full of lasagna
11 Lips that touch mice do — touch his
13 His vet
16 International: abbr.
19 Chemical ending
20 — Grande
22 Poem ascribed to Homer
24 His teddy bear
25 Spanish article
26 Mr. Brynner
28 Evelyn, to a Spaniard
29 Cunning
33 Musical note
34 It's where he thinks lasagna comes from
35 Fuegan Indian
37 To: Scot.
38 Heron's cousin
39 Follow
40 Us: Ger.
41 Daddy
43 Withered
44 He loves to hate them
45 "It doesn't get — better than this"
47 Hair: comb. form
49 Small amount
51 Perform
53 Licentiate in Surgery: abbr.

Autos

1985 VOLKSWAGON GOLF--white, 2 door, 5 speed, air. Pirelli P-77 tires. Asking $3500. Contact Rex at 253-4475

1979 HONDA PRELUDE--excellent condition, no rust, red color, power sunroof, stereo, equalizer. Condensing, must sell for only $1600. Contact Ben at 253-6138

1976 TOYOTA CORONA--$600 or best offer. Please contact Mustafa at 441-0843

1976 BMW 2002--Only $800 or best offer. Please contact Mustafa at 441-0843 for more information

1972 LINCOLN MARK IV--electric everything, some rust. Cruise in luxury for just $800 or best offer. Contact Ray at 788-6494 or hm 4101

Cycles

1978 YAMAHA 750 SPECIAL--3 pistons, shaft drive. Needs final hose and battery. $150 or best offer. Contact Todd at 252-9878.

Roommates

CHEAP CHEAP CHEAP--I'm not a bird, I'm a townhouse!! WHY RENT when you can buy? You pay for the house you occupy. 2 bedroom, 2 bath from $54,900. Contact Lorraine from Town Homes West at 904-756-4930

ROOMMATE NEEDED--summer B only, 1 story townhouse, $165 per month + 1/2 utilities. Contact Karin at 760-3444.

HOUSE TO SHARE--3 bedroom 2 bath. Rent $280 utilities paid. Available June 30, 1988 located in Trails, Ormond Beach. Contact Mitch at 677-7020.

HOUSE FOR SALE--2 bedroom, 2 bath close to beach, open living area large garage and living area. This house can be bought for less than $500 a month including mortgage, water, taxes, and insurance!! You can own a home for less than it would cost you to rent it, and you can rent it when you graduate and make money. Only 54,900. Contact Jeff at 252-2702

SUMMER SPECIAL--furnished room for rent only 1/2 mile from school. Rent includes electric, water, heat, central air, washer & dryer. Private room with no lease required for only $180 per month. Many extras included. Contact John at 257-6982.

ROOMIE NEEDED--for Summer. B. Townhouse in Port Orange. 1/2 rent, 1/2 utilities, 2 bedroom, 1 1/2 bath. Contact Chip at 760-3397 or Box 7062.

ROOM FOR RENT--3 blocks from ERAU in a nice area. Fully Furnished. Contact Rocco at 760-2564 for more information.

ERAU PARENTS LIKE US--hm. They buy our homes to invest. Three miles from the school. We have a pool. See the models at TOWNHOMES WEST, 3640 S. Clyde Morris Blvd., Port Orange, FL 32019

Personals

Stell --

Forgive the late nights, but you did very well and I'll see you continue to excel.

-T

Karen,

Happy Birthday! Thanks for everything.

Sis

You may still register to vote in 1988

by Phyllis A. Salmone
Associate Professor of Physics

If you are a United States citizen who is 18 or older and you have not registered to vote, you may still do so, according to Ms Jane Ripper of the Volusia County Board of Elections.

If you consider Volusia County to be your legal residence, you may register by going to the Volusia County Administrative Building at 250 N. Beach Street.

Keep in mind if you are receiving financial aid from your home state, you should register to vote in that state so as not to endanger your aid. If you choose to declare your legal residence in another state and you are not currently registered, you should contact the Department of Elections in that local for registration information and the procedures for voting "in absentia".

When you go to register, you must take an oath of legal residence. If in the past you were convicted of a felony or judged incompetent, you must show legal documentation restoring your civil rights. If you were previously registered at another location, you should turn in your old voter registration card, if it is available.

The Volusia County Department of Elections is open Mon.-FRI. from 8:30 a.m. to 4:30 p.m. Beginning July 5, the office will also open on Saturdays from 9 a.m. to 5 p.m.

The deadline for registration for the Sept.6 and Oct. 4 primaries is Aug. 6. The deadline for registration for the general election on Nov. 8 is Oct. 8. If one should turn 18 after the deadline but before the election, he may register "pre-age" and still be eligible to vote.

If there are further questions about voter registration, contact Ms Jane Ripper, the Supervisor of the Daytona Branch Office of the Volusia County Board of Elections at 254-4690.

Aircraft being tested with hydrogen fuel

A four-place airplane is currently being readied to fly using hydrogen as the fuel. The hydrogen fuel system has been installed in the aircraft and tie-down tests have been run with the engine operated on liquid hydrogen. These static tests have demonstrated smooth combustion and power levels more that ten percent in excess of that feasible with conventional aviation gasoline.

The aircraft being used to perform this historic first flight is a Grumman American "Cheeta," powered by a 150 horsepower Lycoming E2G engine.

The project is the work of Mr. William H. "Bill" Conrad, president of Airline Training Inc., Fort Lauderdale, FL, and an enthousiastic proponent of the use of hydrogen as the fuel of the future. Conrad is a retired FAA-certified air transport rating examiner and a current aviation consultant. He has numerous historic achievements to his credit, including membership in the prestigious OX-5 Aviation Pioneers Hall of Fame, the Wright Brothers Memorial, and other awards. At age 80, he currently is focused on advancing public and professional interest in the use of hydrogen as a fuel for aircraft. He agrees with those geologists and petroleum engineers who predict an increasingly short supply of crude oil beginning in only 10-15 years due to its inevitable depletion. He argues that development should be underway now on a replacement which will not only be replenishable, but also non-polluting, more efficient, and safer. Hydrogen is the candidate that fills all of those requirements.

Asked about the advantages which are expected to be realized as a result of using hydrogen as fuel in aircraft, Conrad emphasized that the following are among the more significant:

* Because hydrogen can be derived from water upon application of energy, the fuel can be manufactured almost anywhere in the world. It therefore can be universally available, not dependant on availability of finite resources like crude oil and natural gas. Its cost will depend on the process used in its manufacture and the local cost of energy.

* Because hydrogen is the most energetic of any fuel, only about one-third as many pounds are required to fly a typical mission, compared to gasoline or Jet A (the grade of kerosine currently used in commercial aircraft).

* Because hydrogen mixes rapidly and more uniformly with air in the engine fuel injection process, it burns more evenly and completely; and, because it contains no carbon or sulfur, the exhaust is almost pure water vapor and therefore non-polluting. The only noxious product is NOX, formed by reaction at high temperature of nitrogen in the air with any oxygen molecules which are not otherwise consumed during combustion. There will be no CO, CO2, unburned hydrocarbons, or oxides of sulfur such as are produced with use of conventional hydrocarbon fuels.

* Because of its propensity to vaporize rapidly and become lighter than air almost immediately when spilled, liquid hydrogen is safer in event of a survivable crash than gasoline or Jet A.

SAFETY—

(continued from page 10)

use in-flight weather services. If he had obtained a briefing he could have made the appropriate no-go decision that would have saved his life. Even once he had decided to make the flight and entered the clouds, he should have realized that the quickest way out of the clouds would be to execute a 180 degree turn. Unfortunately for him he did none of the above.

There are many factors that contribute to irrational decisions, many of which have to do with the desire of the pilot to get home, compounded by overconfidence in himself, flight service, ATC, or his equipment.

Some pilots have a tendency to think that all of the stories they have heard about VFR in to IFR, have no relation to them. They think that they are somehow better pilots therefore it could never happen to them. When a strong desire to get home hits, they think that they can make a flight that they would normally not consider trying. They may support their decision by thinking that they can use the autopilot to guide them though IMC conditions that they would otherwise not be able to handle. A simple barometric change could put you into a steady descent into the ground.

One crash occurred in Louisiana. A 16,000 hour pilot with a commercial certificate but not instrument rated (?) crashed a Cessna 206C with the autopilot altitude hold engaged. The shift in barometric pressure had caused the aircraft to descend into the ground.

Another case would be the pilot who places too much confidence in the flight service reports and forecasts. Weather is constantly changing, there is no way that a briefing can be totally correct. The weather can worsen without warning and it is your responsibility to realize it has before you are in to deep.

Also don't forget that it is also your responsibility to report changes in the forecast weather in the form of PIREP's so that others don't get caught by surprise.

Too many times non-instrument rated pilot get overconfident and try to fly, unauthorized, into IFR conditions. Sometimes they go so far as to file an IFR flight plan without being IFR rated. One 170 hour, non-instrument rated pilot filed an IFR flight plan out of Valkaria, Florida to North Carolina. Over Jacksonville the plane broke up in flight, leaving widely scattered aluminum in the trees. This is only one of the many examples of pilot over-confidence that led to in flight disaster.

Another thing that you must be aware of when you continue VFR into IFR is that you are endangering the IFR traffic that is in the same vicinity as you are.The fact that it is no longer see-and-avoid, puts you all into danger of collision. They don't know where you will be unless you are properly working with the system that is controling them.

No pilot is beyond making a wrong decision, but we can all try to be aware of some of the factors that might influence our decisions. We need to think about the reasoning when we choose to fly into marginal weather conditions. Is there some reason that we want to get to where we are going in a hurry? If so, is it worth your life? Are you over-estimating your ability and that of your equipment, to rationalize your decision? These questions must be asked when you try to make a marginal go no-go decision. When answered correctly they could mean the difference between life and death.

Soviet aircraft visits U.S.

by Peter W. Merlk.. Special to the Avion

SAN DIEGO, CALIF. -- At first glance, it looks very much like the C-5. Similar in size and shape, the Antonov AN-124 is the largest aircraft in the Soviet inventory. A wide-body cargo aircraft, the AN-124 can carry heavy payloads in support of industrial and military airlift operations.

The AN-124 was displayed for the first time in the West at the 1985 Paris airshow. It also appeared at Farnborough, England in 1986. Recently, the aerial leviathan made its first visit to the United States. The aircraft was a prominent feature of AirSpace America '88 at San Diego, Calif.

At a length of 228 feet, the AN-124 is only 20 feet shorter than Lockheed's C-5. The AN-124 has a wingspan of 240.5 feet (20 feet wider than the C-5), and both aircraft have a tail height of 65 feet. Unlike the T-tail arrangement of the C-5, the AN-124 has a conventional empennage.

The Soviets boast that their aircraft can carry a maximum payload of 330,000 pounds a distance of 2,795 miles. This is significantly greater than the C-5's maximum payload of 220,960 pounds.

Unlike the C-5, the AN-124 has no in-flight refueling system because its un-refueled range is sufficient for all operations within the Soviet Union. The AN-124 has a ferry range of 10,251 miles.

A six man crew consisting of pilot, co-pilot, navigator, radio operator and two flight engineers operate the plane. There are also accommodations for a relief crew and 85 passengers. The

Left side view of the AN-124 at Air/Space America '88 at Brown Field in San Diego, California.

AN-124 can carry 315 combat troops or 270 paratroopers.

The aircraft's hinged upward-opening nose raises up to allow access to the cargo bay. Clam-shell doors at the aft of the cargo bay allow for straight-through loading and unloading of cargo and vehicles. Two nose gear struts with integral jacks fold forward, allowing the aircraft to "kneel" for easier cargo loading.

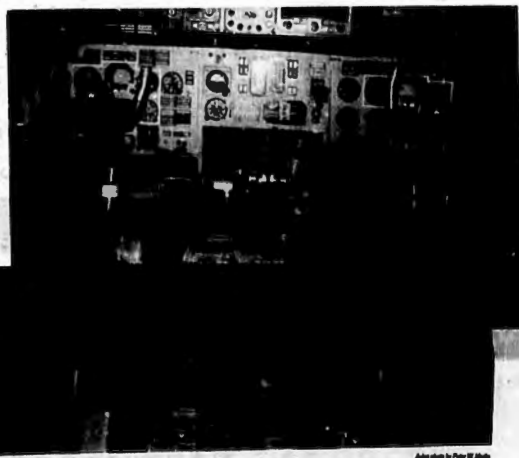
The cargo bay is 119.8 feet long, 21 feet wide, and 14.5 feet high Cargo loading is assisted by four 5-ton cranes mounted on rails that run the length of the cargo bay.

The AN-124 is powered by four Lotarev D-18T turbofans. Equipped with thrust reversers and rated at 51,480 pounds of thrust each, the D-18T has reputedly benefited from Western engine technology.

High-flotation landing gear, suitable for unimproved runways, enables the AN-124 to operate at remote survey sites on Siberia's frozen tundra, as well as at potential theaters of military operations. Five main gear struts on each side, and two nose gear struts, are equipped with a total of 24 wheels. The rear-most main wheels are steerable for ground maneuvering.

A well-organized, modern cockpit features a four-channel fly-by-wire control system with a mechanical back-up. Two radars provide weather and terrain-mapping/navigation data. The cockpit is similar to those of modern western transport aircraft.

Civil applications for the AN-124 include transportation of outsize cargo and supplies to remote oil exploration and geological survey sites. It can also support heavy military airlift operations.



Avion photo by Peter W Merlin

Cockpit of AN-124 is similiar to those of modern Western transports. The panel in the top center of photo is the automatic flight control panel. Vertical tape engine instruments can be seen in the center of the photo, just above the weather radar (square screen). Pilot and co-pilot stations have duplicate sets of standard instruments.

Faculty profile: Aboalfazl Salimi

by Phyllis A. Belmonte
Associate Professor of Physics

Aboalfazl Salimi is an Assistant Professor in the Computer Science Department who has worked at Embry-Riddle since 1981. He has taught a wide variety of courses including Computer Organization, Data Structures, Pascal, FORTRAN, BASIC, and introduction to Computers. He supervised the development of application and system programs and the computer hardware design by computer science students.

Salimi was born in Mahallat, Tehran, Iran and he earned a Bachelor of Science in Banking Science at the Institute of Banking Science in Tehran. His major course work included Accounting, Economics, Management and Banking. His interest in technical areas led him to come to the United States to pursue studies in computer science. He studied at the University of Iowa in Iowa City, Iowa, where he earned a Master of Science in Computer Science. His projects as a graduate student included developing a compiler for a pascal-like language and a text editor. His areas of study in graduate school included Digital Systems and Computers, Advanced Computer Organization and Architecture, Compiler Construction and Programming Language Design and Foundations.

At Embry-Riddle, Salimi has served as Program Chairman for Computer Science and as acting chairman of his department. He has been involved in the recruitment of faculty, budget planning and management and the acquisition of departmental equipment. He has attended university sponsored professional development classes and has served as an academic advisor for computer science majors.

Salimi is a referee for the Association for Computing Machinery's Special Interest Group for Computer Science Education. He has served on Embry-Riddle's Faculty Council, has been involved in curriculum decisions and was a representative on the Faculty Governance Committee.

Salimi wrote a paper *Framework for Evaluating Learning from Computer Programming Courses* and co-wrote, with Dr. Jagdish Agrawal, *An Evaluation Model for Distributed Systems*. Both of these were presented at the Fourth Symposium of Empirical Foundation of Information and Software Science.

In the Daytona Beach community, Salimi has acted as a computer consultant for various businesses in the area. He has been involved in the analysis and development of computer hardware and software systems for the Daytona International Speedway, NASCAR, the Motor Racing Network, and several local medical facilities. He also served on the Person-to-Person Committee for the United Way.

Avion photo by Manny Fernandez-Lange

Aboalfazl Salimi

Professor Salimi has worked extensively with the VAX 11/780 (UNIX operating system), Prime minicomputers (PRIMOS operating system), ONYX microcomputer (OASIS multi-user operating system), IBM-PC (DOS and OASIS-16 operating systems) and various software packages.

He is teaching three computer classes during A term, however he has been attending the University of Central Florida (UCF) on a full-time basis since August of 1987 in pursuit of his Ph.D in Computer Science. He is currently studying in preparation for the Ph.D qualifying examination which will be given at the end of this summer. He plans a dissertation in the areas of Artificial Intelligence and Database Design, under the guidance of Dr. Orooji and Dr. Gomez of UCF.

When asked to comment on Embry-Riddle, Salimi said he is "proud to be teaching" and that he "enjoys very much the emphasis on teaching at Embry-Riddle". He would like to see his department become more involved in research projects but not at the expense of teaching quality. He especially enjoys working with colleagues and students from all departments on campus. Also, the Embry-Riddle environment has caused him to develop an interest in aviation. He has his Private Pilot License and hopes to get more licenses and ratings after completing his Ph.D.

Mr. Salimi is now a permanent resident of the United States. He met and married his wife, Melody, eight years ago while in graduate school in Iowa. Melody is currently a teacher at La Petite Academy in Orlando. The couple has two daughters, ages 5 and 7. He and his family enjoy sailing, swimming, racquetball and family picnics. They also enjoy travelling throughout the United States Midwest and to other Florida beaches whenever the opportunity arises.

The Chairman of the Computer Science Department, Dr. Jagdish Agrawal, said "Salimi has shown extraordinary dedication to the Computer Science Department's needs and he has performed above and beyond the call of duty". His chairman also mentions that Salimi is a super-classroom teacher and is extremely well liked by his students. This is evidenced by the fact that he has been voted Outstanding Faculty Member of the Computer Science Department by three graduating classes.

Mr. Salimi exemplifies the ideals of the teaching profession through his dedication to teaching excellence, his educational background and pursuits, his experience, devotion, community involvement and professional activities. He is considered by all to be a great asset to his Department and the University.

Flight safety by awareness

by Erika Foster
PFDT, Safety Officer
Number one in a series

A sample of recent accidents involving continued VFR flight into instrument meteorological conditions showed that about 83% of these accidents were fatal. Although this type accident only accounted for 4.9% of general aviation accidents during the sample period, the message is a clear one - this accident scenario holds little hope for human survival.

It would be easy to dismiss these accidents as VFR pilots exceeding their limitations, but in this sample, 31.4 % held instrument ratings. The average time was over 2000 hours, so the low-time-pilot scenario doesn't hold water here. The type of plane flown didn't make much difference either, the aircraft involved ranged from Cessna 150s to Piper Navajos.

In general these pilots had obtained a preflight briefing, but chose to ignore it.

An example would be the pilot who had a private certificate and over 300 hours of flight time, that crashed a Piper 601P Acrostar in Arizona. The pilot had planned to fly from Torrance, California to Florida with an overnight stop in Texas.

When he called the flight service briefer on the morning of the flight, he was told of possible thunderstorm activity along his route. The briefer advised him to get an update before departure and to use in-flight weather services to keep up on any developing weather during the flight. This advice was not taken.

At 10:45 that night, the pilot called Phoenix approach informing them that he had entered IMC at 17,500 feet and would like to land at Phoenix. It was just four minutes later that he disappeared from the radar screen. The wreckage was found about 28 miles from Luke AFB with the wings ripped off.

What could this pilot have done to prevent this type of outcome? For some reason he thought he would have no trouble, even though he was warned of possible severe weather. For one thing, he should have at least rechecked the weather before departure. The accident occurred over 12 hours after he obtained his briefing, which he never updated. Even if he hadn't been warned of bad weather he should have rechecked the weather, the added possibility of severe weather should have further encouraged him to

see SAFETY, page 9

Car crash update

by Martin F. Smith
News Editor

Daytona campus student Dwayne Bryan's condition has been upgraded to satisfactory from critical, following an automobile accident that occurred at 1:30 a.m. April 16.

The crash, which occurred in the 300 block of North Riverside Drive, claimed the lives of Daytona campus students Guillermo "Bill" Jimenez and Wayne Nisbeth.

According to Holly Hill police, Bryan was driving a late model Nissan 300ZX southbound on Riverside Drive at a speed in excess of 100 mph when he lost control of the car. Skid marks near the accident scene indicated that the car left the road on the right side before crossing all four lanes to the left and striking a concrete house on the east side of Riverside Drive.

Bryan, Jimenez and Nisbeth lived together in a rented house in Ormond Beach. Another resident of the house who asked not to be identified stated that it was not uncommon for the three to drive at high speeds.

Avion photo by Larry Newcomer

Fine feathered friends...

This mother Killdeer quietly incubates her clutch of eggs amidst the bustle of flight line activities. The father is often close at hand distracting intruders from this nest of future aviators.