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Embry-Riddle Aeronautical University

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Cleared for takeoff...

The Wright Flyer is placed on its base by a hoist. The money for the Wright Flyer was donated from various sources, including the Student Government.

'The Wright Stuff' comes to Embry-Riddle campus

by Jan Osterholm
Campus News Reporter

The three-piece sculpture of the Wright Flyer and its inventors arrived at Embry-Riddle's campus late last Thursday night (July 5).

Throughout Friday morning and afternoon its sculptor, Larry Godwin, and his assistants worked to get the Flyer and the Wright brothers into place. On Saturday, the Wilbur Wright figure was not at the site, but the Flyer was on its streamlined base with Orville at the controls.

Monday afternoon the *Avion* contacted the public relations department and was told that the Wilbur sculpture was temporarily posed inside Spruance Hall until the construction of a base for it is completed.

All day Friday the figure of Wilbur Wright stood waiting nearby as Orville and the airplane were put in place. Curious students, faculty, and staff observed the activity, and studied and touched the Wilbur sculpture in the hot 90-plus heat.

President Tallman was out at the

site several times on Friday, looking very pleased with the eye-catching project.

George Thune, Public Relations Director at Embry-Riddle, talked with the *Avion* at length about the project at the site. "The more you look at the sculpture, the more you appreciate the genius of the Wright brothers, as well as the way it was applied by the sculptor in his creation," Thune commented.

The replica is exact down to an eighth of an inch in every detail, Thune told the *Avion*. He said he expects that the Flyer "will be quite a sight to see." He added that the summertime would be the best time for the community to see the Flyer, since there is plenty of parking space.

According to plans Thune mentioned, the dirt area around the sculpture will be sodded first, then some time in the future walkways will be added to the area.

The scene depicted by the sculpture is from a photograph taken by a witness to the first successful flight on

December 17, 1903. The sculpture is referred to as a "diorama," or a staging of a scene from history, for this reason. The witness, John Daniels, was one of a group of North Carolina coast life guards who were at the Kill Devil Hill camp that day. Daniels took the photograph with Orville Wright's camera.

The first flight of a manned, powered, controlled airplane almost occurred on December 14, 1903. Wilbur Wright, having won the toss of a coin to see who would fly first in the latest of their test machines, failed to get off the ground that day due to engine problems.

On December 17, the next day that was good for flying, it was Orville's turn. The wind, engine, and controls were all agreeable that day. As a result, Orville made history as the first true test pilot, and the first aviator to pilot a controlled, powered airplane.

Seeing that the 4,000-pound replica is so accurate, Thune joked that it could fly, "with the right amount of thrust, of course."

Wright Flyer called a true centerpiece for University

by Jan Osterholm
Campus News Reporter

People on the Embry-Riddle campus have had a chance to see a true centerpiece for the university in front of the library since the end of last week.

A scale recreation of the original Wright Flyer and a sculpture of the first pilot, Orville Wright, was placed in front of the Jack Hunt Memorial Library last Friday. A sculpture in the likeness of Wilbur Wright was standing nearby through Friday, and will soon rest near it permanently.

The sculpture depicts the moment that the Flyer left the ground for its first flight on December 17, 1903, marking the first successful manned, powered, controlled flight.

The creation, originally suggested by two Embry-Riddle graduates, was brought to reality by sculptor Larry Godwin. In an interview late Friday afternoon, Godwin talked with the *Avion* about the project, the Wrights, and himself, in a mellow, easy voice.

Godwin said that the Flyer itself weighs approximately 3,600 pounds, and is made of stainless steel and aluminum, with only the propellers and engine being made of aluminum. Orville and the Flyer together weigh nearly two tons.

The Flyer has moving parts, including the propellers, canard (the front stabilizer), and rudder. They are powered through chains and cables connected to a small electric motor.

Godwin has included every detail in his replica. For instance, he said that the Wrights twisted the chain connected to one of the propellers, reversing the movement of that propeller in relation to the other. This is interesting in that it eliminated the airplane's torque, since the two propellers then turned different directions.

At first glance one might not notice the Flyer's wing composition, but close up one will notice the wing surfaces consist of weaved strands of stainless steel. It makes the sculpture look lighter. Godwin pointed out that it adds to the strength of the sculpture, while being the closest thing to a translucent fabric.

"It allows light to pass through the wings," Godwin stated, and he said it gives "a multitude of reflective surfaces." The artist pointed out that each wing "surface has a different pattern of weaving." The spacing between the lengths of steel also allows wind to pass through the wings.

Though while the Wright brothers lived they were as lean as Godwin is, the figures of Wilbur and Orville each weigh about 400 pounds, and both are solid bronze. Wilbur Wright is the figure running alongside the Flyer as in the famous photograph taken by witness John Daniels on that famous day, December 17, 1903. His brother Orville can be seen at the controls on the Flyer sculpture.

Godwin, who is based in Brundidge, Alabama, thinks the Wrights were geniuses. "They acquired knowledge in the process...they had to build on what they learned, what they discovered," he explained, saying that they had

nowhere to turn for reliable information except for the merits of their own abilities.

While researching, the sculptor found he had questions about the time period. A 93-year-old gentleman from the Smithsonian, Dr. Garber, "was a very good resource," Godwin said, "because he actually saw the Wright brothers fly, and for certain details of dress...for example, their caps."

Godwin discovered interesting facts about the way things were in the early twentieth century. He said he was puzzled that the Wrights "appeared to be in Sunday clothes rather than in work clothes" even while experimenting on the dunes near Kitty Hawk, North Carolina, at an area called Kill Devil Hill.

Dr. Garber explained to Godwin that, "normally, back in those days people had only one or two sets of clothes," the sculptor told the *Avion*. Dr. Garber also told him that each one of a pair of shoes was virtually interchangeable with the other back then.

The process to create the bronze figures was complex. "There was not much work involved, but it was very time-consuming," Godwin pointed out. The sculptor had to make not one but a series of molds. He noted that one hand on Orville required an initial seven-piece mold.

The process of making the bronze figures took many steps. Roughly, the process went like this: first the artist made molds and back-up molds, then he coated them with wax, then he made what is called a ceramic shell mold, which is heated to 1200 degrees Fahrenheit and has 2,000-degree (Fahrenheit) bronze poured into it. All this after he made an initial clay sculpture to create the molds from.

The entire project, the bronze figures and the Wright Flyer, took nine months. Godwin's other works include one at Alabama State University, called "Equinox." It is an abstract creation that "involved two converging sidewalks that met in the middle of the campus," of which "one went upwards in a loop 24 feet high as the other did a twist through the loop."

Godwin was commissioned as the artist-in-residence at ASU for two years during which he created the sculpture. He said he likes to do large or in-scale sculptures partly because it is challenging, and he commented that he'd like to do more of them. Another reason he said he likes them is that they affect the environment that surrounds them.

The *Avion* asked Godwin what he thought of the inventors of the Flyer. "One of the things that impresses me about the Wrights is that they appeared to be just average guys from down the street who had a bicycle shop. But they did something that was a work of genius."

He then explained, "They did it through perseverance...but not just that, they were methodical and had engineering aptitudes. Their necessity to learn required them to build their own prototypes, to experiment...they had to build on what they alone had learned."



Larry Godwin

SSBJ takes off in 1994

by John McDermott
Staff Writer

The world's first supersonic business jet (SSBJ) program has taken a major step forward as a result of meetings held in Savannah, Ga. during June. The SSBJ is an international enterprise between Sukhoi and Lyulka of the Soviet Union, Gulfstream of the United States, and Rolls-Royce of Great Britain.

The latest meetings between these aerospace companies set schedules for marketing, development projects, and discussed certification agreements between the government agencies of the US and USSR. The proposal for the SSBJ began at Gulfstream in 1988. Sukhoi started a program a year earlier but needed a partner from the West.

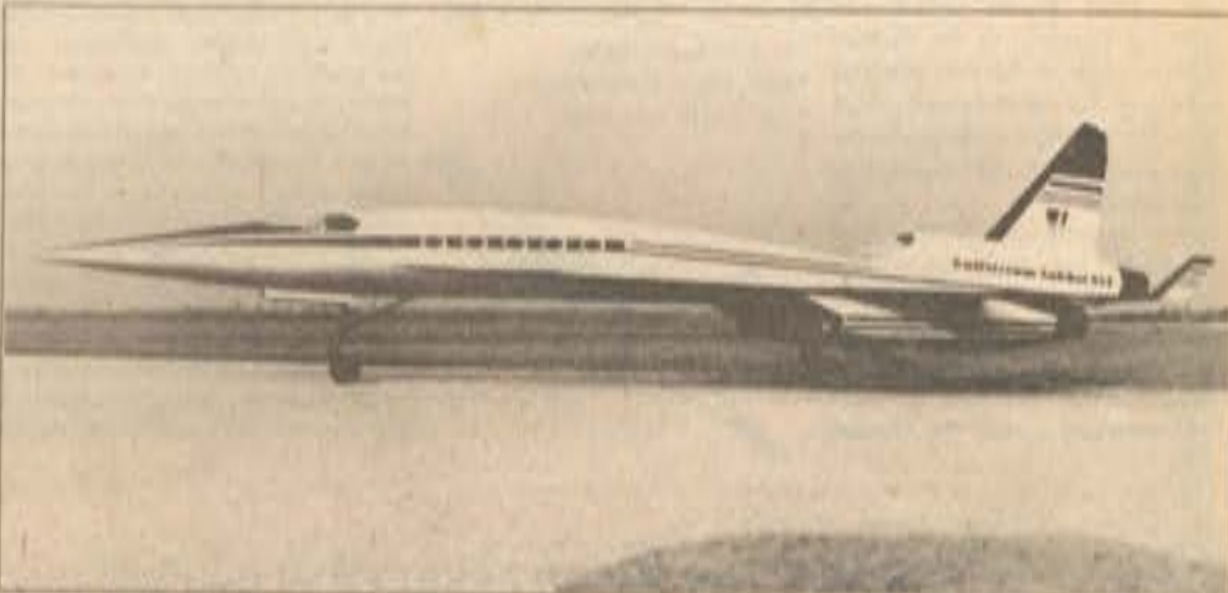
At the 1989 Paris Air Show Gulfstream President Allen Paulson met with Sukhoi Chief Designer Mikhail Simonov. At this meeting a Memorandum of Understanding was issued outlining the feasibility of a joint venture in developing a 21st century SSBJ. According to Allen Paulson the Sukhoi Design Bureau is "years ahead of the rest of the world in the

design and development of supersonic aircraft for business flying". It is planned that Sukhoi will manufacture the airframe, and Gulfstream will be responsible for marketing, and will install avionics and interiors. Rolls-Royce and Lyulka will jointly design, develop, and produce the engines.

The design goals are for an aircraft about the size of a Gulfstream IV that will travel at Mach 2.2 (1,500 mph - 7% faster than Concorde), have a crew of two, seating for eight to 19 passengers, and a range of at least 4,300 NM. The SSBJ will be powered by three engines, and will meet all international noise and environmental requirements. The design may eliminate the problem of sonic booms, but if not it will still be much quieter than Concorde. It is expected to operate into all airports where subsonic

business jets operate, and have a takeoff distance of 5,000 feet. Other specifications are a cruising altitude of 61,000 feet, total length of 118 feet, wing span 63 feet, and a gross weight of 100,000 pounds. A mini-airliner version of the same aircraft is also being studied.

The first prototype is expected to fly in 1994, and five



Soviet bullet...

The supersonic business jet will be the first joint U.S. - Soviet aircraft project. The Sukhoi Design Bureau will manufacture the airframe and Gulfstream will be responsible for marketing, and will install avionics and interiors.

additional prototypes are expected for flight testing. SSBJ production is expected in 1997-1998, with a per aircraft cost of \$50 million. The development program for the SSBJ is expected to cost \$1 billion, in 1990 dollars. The market for the SSBJ is operators of large corporate aircraft that will be involved in the developing markets of the Pacific Rim and Eastern Europe. Also of importance is that Sukhoi has established a new company, Aeroconversion, to assist in manufacturing and to transfer technology from military to civilian products.



Campus News

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Diversions

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Editorials

Do European problems concern U.S.?

Letters to the Editor

CRASH HYPE?

It is not unusual to experience some element of "armchair quarterbacking" by our many "experts" following an unfortunate aircraft mishap. The "revelations" addressed by Mr. Cerni in his June 6th editorial are an example of a reaction to countless rumors and opinions which abound during these difficult circumstances. I feel it appropriate to set the record straight concerning the issues raised by Mr. Cerni based on the facts as we know them to date.

First, it is true that in over 40,000 hours of training in the Crusader, we have experienced two incidents where the fire warning system has activated. In both cases, the reaction of the crew was consistent with the emergency procedure outlined in the Cessna 303 Information Manual i.e., the engine was shutdown and the aircraft landed safely. In both situations, the cause of the false alarm was an electrical malfunction. However, under the circumstances, the procedures followed by the crews were timely, proper, and consistent.

Second, it is also true that our instructors are not standardized to teach students to second guess a fire warning indication. Our "closely guarded information" as Mr. Cerni states is discussed by our instructors and is far from a secret. However, students will be trained to respond to an engine fire warning precisely in the manner demonstrated in the two previous incidents. The time to trouble shoot possible electrical problems is not during an engine fire situation at low altitude.

The infrequency of the false engine fire indications has made it prudent no to emphasize this possibility to our students. We have consistently followed the manufacturers guidance in these situations and secured the effected

engine. Until such time we clearly establish the conditions in which a false alarm can occur, we will continue to follow our present philosophy.

It is wrong to suggest that the issues surrounding this mishap were related to a lack of standardization in our instructors. The standardization of our instructor cadre is an element in our training program in which we are most proud. Experienced, professional aviators from around the world continue to recognize the disciplined approach we take in our training. The skill and competence of our graduates is the result of many years of training experience. All procedures taught by our instructors have been carefully formulated throughout many hours of research, in-flight study, and manufacturer CONSULTATION. All procedures are constantly under review to insure compliance with FAA testing requirements while maintaining the safest possible training environment.

It is unfortunate that throughout this ordeal, no one has recognized and appreciated the fact that a student and flight instructor escaped injury through calm, professional action in a perilous situation. Whether the accident could have been avoided is yet to be determining. In the meantime, let's give credit where credit is due.

Mr. Paul E. McDuffee
Chair, Flight Technology/
Chief Flight Instructor



A unified Germany, The Soviet Red Army is sent to put down civil uprisings. The end of the cold war. Is there any doubt that we're living in an age of tremendous change? All of the traditional political rules we have grown up to understand and not to question, just throw those out the window because somebody burned the rulebook. The Warsaw Pact countries have told the NATO Alliance "you no longer have an enemy". Mikhail Gorbachev is asking for financial support from the Western powers and is pledging to his own people "two years to make a change" in their lives or he will resign. And new words and phrases like "peace dividend", "westernizing", and "the Gorbachev Effect" are influencing our national policies. Are we really awake, is all this really happening?

Friendly discussions over late-night Denny's coffee have been turning into heated arguments on whether or not a reunified Germany will fly like an eagle or crash and burn in a

political Armageddon. On that question the burden of proof lies within the financial responsibility of the world's third biggest economic power merging with the tenth (albeit, a distant tenth) largest economic power. Can the economy of one cope with sticker-shock of "westernizing" their long-suffering brothers next door? Experts are placing figures on the face-lift into the trillions. Can we trust a Germany without its NATO and Warsaw Pact baby-sitters? I don't suppose Poland is real ecstatic about the whole idea, but then again Poland has so many of it's

own problems to worry about.

All of this talk about the peace dividend in the post-cold-war era has got to be somewhat arousing to those of you contemplating a career in the military or working for companies that build the big ticket items for the Department of Defense. Why would we need a world-wide military presence or big toys like the B-2 if all of our so-called enemies are no more? I think we can expect to see congress hone the sharpness of its budgetary axe and start taking heavier swings at the kinder, gentler military budget. Do we need

to be concerned with the outcome of Gorbachev's programs? I would think so. He has taken the cap off of a very big pressure cooker, that is not only affecting the structure of the USSR, but continues to be a major factor in changing the face of Europe and the world. Some of his ideas and programs may be pie-in-the-sky, but he's going to need more than a Coke and a smile to keep his country out of a civil war. Do we give him the financial support he has asked for while still pointing the nuclear loaded gun at Mother Russia? Can we let bygones be bygones and say "lets all be buddies now"?

Meanwhile, back at the ranch, I'm sure we forgot about all of that stuff last Wednesday, as we toasted our country's own independence by drinking too much beer, running over one another trying to get to Lake Eola, and watching a bunch of Chinese-made fireworks go off. Welcome back to reality, and God bless America!



Hoyt E. Brown
Production Manager

Freedoms of Speech defined by one man?

The Dade County District Attorney Office has recently started a campaign to ban The Two Live Crew from both selling its newest album "As Nasty As They Wanna Be," along with performing cuts from this album live.

This action has set a precedent among district attorneys' offices throughout the state, and has aroused great debate between free speech advocates and proponents of anti-obscenity legislation. Volusia County District Attorney John Tanner has utilized this precedent to spearhead his ongoing efforts to eradicate pornography and other materials deemed obscene by his office.

Proponents of anti-obscenity legislation focus their arguments around a landmark Supreme Court decision, which stated that obscene materials were not protected by the Constitution, and that community standards ought to decide what is and is not obscene. Tanner has used this decision to defend his actions, essentially stating that he is upholding the rulings of the Supreme Court, and that any lawman who does otherwise is breaking the law.

One question that needs to be asked at this point is, "How do you find out what community standards are?" Tanner has apparently decided that his personal tastes in art, music and literature are in concert with those of the community at large.

The Supreme Court, unfortunately, has left interpretation of its own words wide open, and the result

is that some district attorneys do nothing, while others instead choose to seize materials from stores in their jurisdictions.

The larger issue, of course, is freedom of speech, the Supreme Court notwithstanding. Historically, music has been considered obscene material because it has introduced new and foreign ideas. An example of this is Elvis Presley's pelvic gyrations of the mid 1950's, which enraged parents everywhere due to their fear of teenage "mind

poisoning." Today, two of these same poisoned teenagers are my parents. What should be learned from this example is that different eras reflect different values, and that one must be cognizant of the inevitability of change.

It is the opinion of this writer that the First Amendment was not designed to protect speech considered "acceptable" by the community, for such speech, be it in the form of music, art, literature, etc. does not need protection.

Instead, the intent of the First Amendment was to protect speech that might be declared unacceptable by the majority. Where would creativity be allowed to express itself if new ideas were constantly crushed? For every "bad" idea crushed in the name of community standards, another "good" idea is stymied in the process.

While The Two Live Crew's degradation of women can be judged as being in poor taste, the broad concept of free musical expression is a desirable goal which is threatened even by a minor attack on one musical group in one state. The potential for escalation of such censorship is frightening, for it could call into question other forms of expression.

The end result is that each of us must tolerate others' preferences for music, art or literature, in order that we may expect the reciprocal treatment from others - not only now but in the future.



Brian Gerk
Managing Editor

Student Forum

The Avion asks: What goals should the University strive for within the next few years?



James Maiato



Mike Senn



Christoph Kronshage



John McDermott



Erika Anderson



Hosan Dajani

They should get some airlines in here like UND (University of North Dakota).

More parking and outlaw the use of shoulder pads by women.

More Co-op that is more related to the school. There should be a better relationship with companies and the school.

Need to structure Flight program to get students through in shorter time. If they want a professional program, students should fly 5 days a week.

I wish they would have more concerts. Some thing a student can get excited about. Create more college life.

Improve the Engineering Building, and get more or better equipment for the engineering student. Enclose the swimming pool, giving us more privacy and swimming for all seasons. 24 hour study area.

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Career Corner

Job Search Etiquette

One of the primary qualities employers say they are seeking in new hires is integrity. The following are two basic principles to guide you in your job search:

1. Falsifying data (such as GPA, institutions attended, major/minor, previous convictions, or eligibility to work) is not only unethical but is grounds for dismissal.

2. An accepted job offer (verbally or in writing) is a contractual agreement and should be honored regardless of whether more attractive offers are received after acceptance. Continuing to interview after accepting an offer or renegeing on an offer is unethical.

Other courtesies involved in the job search process include: Writing thank you notes to all with whom you interview within 48 hours of the interview; and writing thank you notes to any of your references who may have helped you land the job through their recommendation, being polite to everyone, including secretaries. Don't let frustrations such as delays in an interview's start-up time shake your poise and cause you to become overly aggressive. Know how to handle yourself during a lunch or dinner interview.

Have a polite, professional message on your answering machine. Employers are not impressed by a message that says, "Hey man, we're partying or too hung over to come to the phone right now. Leave your name and number and we'll get back to you when we sober up."

Upcoming Campus Interviews

Hownet Refurbishing Center, out of Wichita Falls, Texas, will be on campus July 25 and 26 to interview individuals for positions in sales or as Technical Representatives. They are interested in individuals with majors in AMM, ABA, AvTech, Aero Studies, or Pro Aero. They seek both experienced and entry level candidates. Visit the Career Center now to sign up.

Av/Bus graduate program more than just business

The oldest graduate program at Embry-Riddle Aeronautical University, the Business Administration in Aviation Master's degree (MBA/A) hasn't changed its goals since classes first started about 17 years ago.

Almost everything else, however, has undergone some major alterations.

"Our focus is the same: We're still trying to upgrade aviation specialties," said Dr. Bruce Chadbourne, program coordinator of the MBA/A program. But, students currently enrolled are finding an added rigorosity," he said.

Chadbourne said students, for example, now have heavier writing requirements and have to prepare an aviation/aerospace-oriented thesis or graduate research project. The number of electives also has been increased.

The program was first offered in 1973 at a site in Miami. Classes were offered in conjunction with Barry College to service the aviation professionals in the area, Chadbourne explained.

About 50 students currently en-

rolled still take basic management core courses, the same ones offered in M.B.A. programs around the country. Then, he said, they take classes in areas related to their aviation/aerospace careers.

Essentially, Chadbourne said, "to some extent, we are doing what industry should be doing." However, he said, companies have found that on-the-job training is too expensive and have turned to universities like Embry-Riddle to provide the instruction.

Students still have difficulty finding jobs much above entry level even with a master's degree, Chadbourne said. But, he said, with an advanced degree, they are "quicker, their learning capability is enhanced and their progress is much faster" up the management ladder.

"A master's degree offers a student a competitive advantage," Chadbourne said. "We take students on one level and move them higher in their field."

That's another thing about the aviation business administration graduate program that also hasn't changed.

Mannix becomes new head of Security and Safety

by Martin Kammerman
News Editor

Kevin Mannix, Embry-Riddle's new director of security, last week joined the ranks of "Riddle 5-0." Mannix replaces former director of security James Tyson.

Tyson, reportedly left Embry-Riddle to go into business selling medical equipment and prosthetic limbs. As one observer quoted, "He went from the long arm of the law to selling the long arm of the law."

Mannix, who holds an A.S. and a B.S. in criminal justice and political science from S.U.N.Y. at Brockport comes to Embry-Riddle from the University of Rochester. There he served for ten years in various positions ranging from security officer to administrative sergeant for patrol services.

Interviewed by the ERAU administration in May, he was hired later that month by Dean Kelly. Mannix calls his new job a "step up from a supervisory position."

While at the University of Rochester, he spent 50 percent of his time in administration, and 50 percent on special projects. Some of the projects included commencement services, a regatta, managing security for the arrival of president Bush and former President Carter to the campus, as well as developing special pro-

cedures and a training program.

Currently, ERAU safety and security has about 16 regular employees and 12-19 student employees. When asked what impressed him most about the University, he referred to his new department. "A definite commitment toward quality in the safety department," Mannix especially noted several changes within the last three years.

The new director has some special projects on the horizon. He plans to get involved in some "educational programs" as well as "training for our own

safety department officers". In addition Mannix plans to follow in the footsteps of his predecessor by promoting several programs for crime prevention. He wants to distribute pamphlets with good ideas for preventing crimes before they happen. Mannix specifically notes the lease a lock program and engraving already provided by safety and security. "We want to encourage people to engrave valuables," says Mannix.

The dorms should be expecting a visit from the new director, as he plans to have his department give presentations to the residents. He also wants to have security and safety work with student activities and the Entertainment Committee to provide service during campus events.

"This is a beautiful campus," says Mannix. When he compares the students of ERAU and University of Rochester he particularly notes the similarities to the medical students, and calls both, "a serious body of students" alluding to the amount of dedication and specialization.

As a final note, Mannix concluded by saying, "We look forward to myself and the entire department working actively with the students in providing a safe campus environment and in supporting extracurricular student activities. I'd like to encourage people to stop in, say hello. We'd like to get to know them personally."



Breaking In...
Kevin Mannix is ERAU's new Director of Security. He replaces Jim Tyson who left to sell medical equipment.

The Flize to play at Finky's

by Martin Kammerman
News Editor

Embry-Riddle has produced more than its fair share of aviation oriented people. It also produces musicians, such as Scott Diezman of the band The Flize (pronounced flies).

The Flize is composed of Rex Christensen who plays the "monster guitar", Kimberly Cree who does the vocals, and Scott Diezman who is the bassist.

The Flize will be competing in an unsigned bands competition at Finky's on Mon July 16. There will be a large variety of bands, from heavy metal to progressive. The bands, from all over the country, are mainly unknowns which have decided to go for record contracts.

There are expected to be many large recording companies such as Columbia, Warner Bros., Atlantic, and more which will add some electricity to the competition.

The competition starts at 8:00 p.m. and The Flize is the fifth band scheduled to play.

"We like to pride ourselves in being a new concept in rock n' roll" says Diezman. Their music is a blend of classic rock from the 60 and 70's with "the raw edged power of new wave" to form a high energy dance oriented sound.

A total of nine songs will be played by The Flize at the competition. Seven are original and two are cover songs. The covers will be "Bad Boy" by The Beatles and "For Your Love" by The Yardbirds.

The Flize have been around for seven years. They are "basically a bar band" says Diezman. "This is our first shot at a record contract."

During the competition each band will play a set which will be about 1/2 hour to 45 minutes long. The bands will be judged on the basis of crowd enthusiasm. The official prizes are free recording time in a studio and air time at a local radio station. Unofficially, there may be record contracts offered by the major record labels. A total of approximately ten bands will play on July 16 and ten more on July 23. The bands were selected by Draft House Productions.

Diezman, who is an aeronautical engineering senior played at the Homecoming basketball game in November at the Ocean Center with the group Leading Edge. He also played with them during other activities on and around campus.

Diezman concludes, "If you're not quite ready to end the weekend yet, come on over to Finky's and give our band some support. I think that we won't disappoint anyone."



The Flize

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Micro Channel™ architecture	No	Yes	Yes	Yes	Yes
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Mouse	Yes	Yes	Yes	Yes	Yes
Software	DOS 4.0 Microsoft® Windows and Word for Windows™™ NDC Windows Express™ Manager™ and Color™	DOS 4.0 Microsoft Windows, Word for Windows™™ and Excel™™ NDC Windows Express™ Manager™ and Color™	DOS 4.0 Microsoft Windows, Word for Windows™™ and Excel™™ NDC Windows Express™ Manager™ and Color™	DOS 4.0 Microsoft Windows, Word for Windows™™ and Excel™™ NDC Windows Express™ Manager™ and Color™	DOS 4.0 Microsoft Windows, Word for Windows™™ and Excel™™ NDC Windows Express™ Manager™ and Color™
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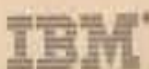
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Don't call them Bangles... Despite their lighthearted name and attitude these ladies from Austin have built a solid reputation for their live shows and decidedly unserious approach to music. Some critics have been stunned by their unabashed lyrics and incredible musical prowess.

Two Nice Girls take off on campy hits by seventies rockers

by Brian Gork
Managing Editor

Like A Version is filled with covers, most of them being vintage seventies rock. What makes this effort by one of Austin's hottest bands, Two Nice Girls, so unique is the fact that it is so obviously a joke from the start. Despite the fact that this EP isn't a wholly original effort, the incredible quality of the musical and production values shines a light on the talent that these young ladies are brimming with. By the way, Two Nice Girls is actually composed of four girls that are, well... maybe not quite so nice, but not all that bad either. Any all-girl band that would name a song "I Spent My Last \$10 On Birth Control and Beer" needs to be addressed properly. Although this is the only original selection off of Two Nice Girls' latest EP *Like A Version*, it shows the truly endearing qualities that these hard-country/soft-punk/militant feminist/reluctant heterosexual cronies from Texas can exhibit. The lyrics for "Birth Control and Beer" may be construed as a deliberate dig to the feminists of the

world but its ultimate message comes off as a tribute to the duality of woman. The lead off song on *Like A Version* is "Feel Like Makin' Love," a cover song that the band says is a combination of "Donna Summer meets Bad Company at a Blues Arts Festival in the seventies." This is a roundabout way to say that they have some of the most delicious harmonies that have been seen this side of the Mississippi since Simon met Garfunkel. Remember that slightly Asian cartoon called Speed Racer that we all grew up with? Try to imagine the theme song to that show sung by four women at about half speed accompanied by gently blended acoustic guitars. Granted, the sort of musical frontiers that take you back to a two-bit cartoon score can grow wearisome quickly (you can only take "cute" so far before it falls over that precipice of nausea). Luckily, the cheesiness embodied by "Speed Racer" wears off quickly as Two Nice Girls move off in a surprising musical direction. The cutting edge of the New York

rock scene is their next stop as they dreamily knock off a cover of Sonic Youth's "Cotton Crown." Although the feminine touch isn't new to this song, it is a refreshing change of pace to hear four beautifully harmonized voices languidly reeling off the lyrics. The ladies in Two Nice Girls are no strangers to the music business. Most of them grew up with family members steeped in the trade, and had early callings to the song-writing art, even as children. Drummer Pam Rarger declares some of her favorite drummers as Karen Carpenter, as well as Maureen Tucker of the Velvet Underground. These diverse influences scream for attention as the girls wend their way through the cuts off of *Like A Version*. It may be hard to find this album in Daytona (but does that really surprise you?) so you may have to special order it off of the Rough Trade label. Stick with it, you won't be sorry, and if you see any other material by these very in-material girls, pick it up and spin it for a good while, and try not to grow too infatuated with these sweet Texas cronies.

Electronic Arts unleashes two spectacular new games for July

by Joe Cambron
Staff Writer

Electronic Arts recently made available two innovative new games to the computer game buying public. *LHX Attack Helicopter* and *Populous* are both very different, but each provides computer users with something new.

LHX is a helicopter combat mission simulator. Although it seems that there would be countless helicopter simulators, owing to the success of their flight simulator cousins, in actuality there are relatively few—and this may be the finest one.

The *LHX* game allows a pilot to choose a theater of action, either Vietnam, East Germany, or Libya, and select between two dozen types of missions available at each skill level. From there, specific missions are chosen by the computer to conform to the parameters chosen.

At this point, it might seem wishful thinking to even conceive of the government ever building another military helicopter, like the *LHX*. For my money, however, this is simply all the more reason to purchase this simulator.

Another aircraft in a fiscal netherworld, but included in the game is the V-22 Osprey, and confidentially, the test pilots were right—it is hard to fly.

LHX is very similar to Microprose's *Stealth Fighter* product, both in look and feel.

The graphics are slightly less stimulating, however. *LHX* suffers, like several other Electronic Arts games, from the placing of patterned screens of black dots in places that simulate movement. For instance, the helicopter blades are not seen to spin, instead a sea of black dots is substituted to decrease the size of the program. This short-cut visually damages the exterior views of the craft, but is little more than annoying.

This compares positively to *Indy 500*, another Electronic Arts game, which featured black patterned spheres to simulate everything from an impact with the wall to a fire on another car.

The controllability of *Black Hawk*, *LHX*, and *Apache* was satisfactory even using a mouse which is somewhat surprising. The Osprey, however, is another story, particularly when in airplane mode.

The complex thrust mechanism of most helicopters which combines a throttle and a device which manipulates collective pitch has been truncated into a simple series of thrust positions along the top of the keyboard. This innovation is a positive one for all those who are not helicopter pilots.

Overall, *LHX* is a very difficult combat simulator that will require a great deal of practice to master. A variety of missions will also keep almost all players of the game interested.

Graphics for the game are excellent inside the aircraft and during the opening briefing, but ground detail is low as are the many exterior views.

The game is definitely a must for all IBM computer players who suffer from *Black Hawk* envy, but for the flight simulator crowd the game might be an unnecessary expenditure.

LHX is very similar to Microprose's Stealth Fighter product, both in look and feel. The graphics are slightly less stimulating, however...

Populous is the second recent release from Electronic Arts. It does not suffer from the graphic inabilities of its flying cousin, in fact the only suffering endured while playing *Populous* is among your minions. *Populous* is a game of gods, and the player is the deity.

As a god, the player must inevitably destroy all the other gods, or himself be destroyed. This is accomplished by manipulating your priest and the people that follow him.

As the game begins, the book of worlds opens to page one. On that page is a geographical area mostly consisting of water, but also including two small camps—one red, the other blue. The player is always blue, or good. Good is a very difficult word in this game, though.

As a god, the player is ultimately jealous and often vengeful. A deity commands earthquakes, floods, and volcanoes, while protecting his own people by smoothing their land so they may build larger and larger structures.

In the tradition of the holy wars, your priest may also be transformed into a nearly invulnerable knight while your people can be commanded to obliterate and seize everything in sight.

In moving to more advanced worlds, the balance of power moves more and more out of your favor until the battlefield is even and finally slanted against the player and toward the computer.

In a welcome technological innovation, two potential deities may fight each other over the phone relatively easily.

The resulting bloodbath would probably be too heinous to describe, however.

Populous is a devilishly fun experience for everyone with a sense of humor about life. The game has its roots in *Sim City* type fun, but it introduces its own peculiar twists that will allow it to entertain even the jaded former *Sim City* addict.

Populous is available for a reasonable price of less than thirty dollars in most places, and additional scenery disks are already available.

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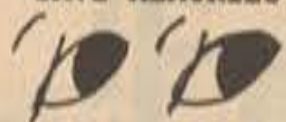
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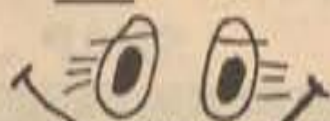
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Space News...

Atlas-Centaur rocket set to launch on Tuesday... An Atlas-Centaur rocket is scheduled to liftoff Tuesday July 17 at 3:41 p.m. The satellite will be carrying the Combined Radiation Released Affect Satellite (CRAF). According to George Diller, a NASA spokesperson, the satellite is a joint NASA and Air Force project and will use the Atlas-Centaur commercial launch vehicle to place the satellite into space. The launch window for this mission is 13 minutes.

Astronaut grounded after airplane accident... Astronaut Robert L. "Hoot" Gibson escaped injury and landed safely while the pilot of the other plane, Henry W. Jones Jr., died after two planes collided during an air race. It happened on Saturday at the Aerofest 90 air show held at the New Braunfels Municipal Airport. Gibson was piloting his Cassutt airplane while Jones was piloting his Mingus Special. Gibson has been grounded one year.

Space Mirror to honor fallen astronauts... Just outside of Spaceport USA, construction of The Astronauts Memorial has all ready begun to honor American astronauts who have died on their voyage to space. The memorial is a rectangular plane of highly polished granite slabs, 42.5 feet high by 50 feet wide. It will have the names of 14 fallen astronauts carved into the structure. The mirror will use a computer-driven solar tracking system which tracks the Sun each day. It will provide a constant reflection of the sky. Light from a separate set of mirrors will be diffused within each letter so that the names would appear glowing at all times. On cloudy days and at night, the names would appear glowing at all times. The 14 names of the fallen astronauts that will appear on the mirror are the Challenger crew members, the Apollo 1 crew members and four men who were killed in T-38 jet training accidents. The expected completion of the memorial is set for December 1990.

Space shuttle fleet grounded due to leak



Where's the fuel leak?...
A difficult task may be ahead for technicians in order to locate the fuel leak.

by Marianne Michaels
Space Technology Editor

The space shuttle fleet was grounded due to fuel leak problems found with both the Space Shuttle Columbia and the Space Shuttle Atlantis. The leak was discovered on May 29 and since then the problem has not been found.

There are fuel lines that run between the external tank and the orbiter that provides the orbiter with fuel during launch.

The problem seems to be in the area where the orbiter disconnects from the external tank. There are two sets of disconnects called the 17-inch disconnects, one set for the orbiter side and one for the external tank side. Each set consists of two valves and when propellant is allowed to flow from the external tank side to the orbiter, these valves are opened.

When its time for Main Engine Cutoff (MECO), these valves and the umbilical doors close in preparation for jettison of the external tank. If the doors closed inadvertently during the launch phase of the mission, the result would be catastrophic.

The fuel leak seems to be in this general area. Engineers are still trying to locate the leak by running tanking tests.

The Space Shuttle Columbia was rolled back to the Vehicle Assembly Building (VAB) and was unstacked for further evaluation of the problem. Columbia was moved from the VAB to the Orbiter Processing Facility (OPF) for further analysis.

Meanwhile, the Space Shuttle Atlantis is still waiting on launch pad 39A. It is undergoing the same tests as the Space Shuttle Columbia.

The fuel leak must be found soon so as not to delay the Ulysses spacecraft mission set for October. This spacecraft will be placed perpendicular to the Sun's equatorial plane.

Ulysses must be launched on October 5, aboard the Space Shuttle Discovery or else it will have to be delayed thirteen months. Ulysses' launch window lasts until October 23. The reason that it would have to be delayed 13 months is has to do with the alignment of the planets.

NASA has suspended the entire space shuttle fleet from flying until the problem of the hydrogen leak can be solved.

Hubble Space Telescope suffers major setback

by Marianne Michaels
Space Technology Editor

The Hubble Space Telescope suffered a major set back last week. Scientists detected a problem with either the primary or secondary mirror. According to Rande Exler, a spokesperson for the Goddard Space Flight Center, the problem is a spherical aberration on either the primary or secondary mirror.

This is caused when light from the outer edge of the mirror focuses at one point while light from the inside of the mirror focuses at another point. Light from a mirror is not focusing at a precise point.

The problem can be compared with the similar problem associated with a condition called myopia which occurs in the eye. This is a condition in which the visual images come to focus in front of the retina of the eye resulting in defective vision of distant objects. The resolution of the pictures will be the same.

The problem occurred during construction of the mirror and it was not caused during launch. Hughes-Danbury Optical Systems, Inc. a subsidiary of General Motors Hughes Electronics, designed and manufactured the Optical Telescope Assembly. It consists of the optical system, structural supports for the system and the fine

guidance and optical control sensors. The telescope reflects radiation from a celestial object to the primary mirror and is then reflected to the secondary mirror. It is then focused back through a hole in the primary mirror's center to form an image field. The scientific instruments measure the incoming radiation and relay the data to Earth via the NASA Tracking and Data Relay Satellite System (TDRSS). The result is an image of great astronomical significance.

Even with the problem, the Hubble pictures are still better than ground based telescopes' pictures on Earth.

The mission's great importance was in the hands of the accuracy of the mirrors. NASA had specified a smoothness for the primary mirror in which the deviations of the surface could not exceed a half-a-millionth of an inch. The polishing technique should have resulted in the smoothest mirror in the world.

The primary and secondary mirrors were tested separately on Earth and not together, however, there is still the mystery of why the problem was not detected early. The main reason the mirror's were tested separately is because of funding. There simply were not enough funds to test both mirror's together. Another reason is because testing of the two mirror's is very complicated.

The space shuttle was scheduled for regular maintenance checks, repairs and replacement of scientific instruments on the space telescope, beginning in 1993. The Hubble Space Telescope was placed in an orbit accessible to the space shuttle in case there were any problems.

In 1993, the Space Shuttle Discovery will visit the telescope and the astronauts will replace some of the outdated instruments with new and more advanced instruments. There is all ready under way the construction of a second generation Wide Field Planetary Camera which will replace the one all ready in the telescope.

They will also solve the spherical aberration problem by placing a small lens in front of the aberration in order for the mirror to focus properly. Its similar to placing eyeglasses in front of the mirror.

The problem with the mirror will not affect the performance of the other instruments on board the telescope. The telescope will still be able to obtain valuable pictures in the ultraviolet and infrared range. Scientists will be obtaining test pictures in order to locate and narrow the problem down.

Since the problem with the Hubble Telescope, Congress has raised many questions about the space program and some people at NASA fear of funding cutbacks. NASA is trying to pass a \$15.1 billion budget but it does not look like they will get the whole amount.

The Hubble Space Telescope produces pictures that are still 10 times better than ordinary ground based telescopes. Even with the problem, the Hubble pictures are still better than ground based telescopes' pictures on



Scratched?...
Technicians are seen here inspecting the polished 94-inch primary mirror prior to application of the reflective coating.

Earth.

The Hubble Space Telescope will be giving the world an eye to the universe come 1993 when Discovery's astronauts fix the mirror. The telescope will continue to give great pictures of the universe for its expected operating life time of 15 years.



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Pilot crashes in his dream plane at airshow

OTTAWA (AP)— Good guesses made Harry Tope a multi-millionaire oil producer. It also gave him the money to pursue his dream of flying a Second World War fighter plane.

When he saw a P-51 Mustang in a military museum in Kalamazoo, Mich., he bought it from its Florida owner. Tope knew this wasn't a toy. There was no guesswork after he made his purchase.

He rebuilt it and paid a fighter pilot \$1,000 an hour to teach him to fly it.

"He was extremely well-instructed," said Charles J. Moskowitz, 66, his partner and friend in an oil business in Mount Pleasant, Mich. Moskowitz flew Mustangs during the Second World War.

"It takes a second to lose it. It's a combat plane, it's not a pleasure aircraft."

About 119,000 people at the National Capital Air Show saw Tope's single-engine plane slam into a golf course, southeast of the Ottawa International Airport. Tope, 48, of Rosebush,

Mich., died instantly.

He had just completed a loop when the engine of the aircraft, nicknamed Death Rattler, began sputtering.

The Canadian Transportation Accident Investigation and Safety Board is investigating but it will likely be months before they know what caused Sunday's tragedy. Investigators will examine the wreckage and video footage of the crash.

The team will focus on the plane's mechanical condition. An autopsy by coroner Gordon Watt showed Tope didn't suffer any medical problem that may have contributed to the crash.

Air show organizers said the tragedy wasn't giving them second thoughts about staging the show next year. The shows began in 1969.

"They are entertaining, enlightening and lots of fun," said John Isseman, president and chairman of the air show association.

"A major tragedy happened but Harry knew the risks when he got into it."

In the United States, air show authorities said six stunt pilots were killed in the past month. They said they planned to take a closer look at how air shows operate.

"If there is something that's common denominator, we've got to find it," said Rick Nadeau, executive director of International Council of Air Shows, based in Michigan.

A Vietnam veteran flying loops in a Second World War training plane slammed Lake Erie near Buffalo, N.Y., on Sunday.

And on Saturday, a man died when his biplane crashed during a stunt takeoff.

Three more stunt pilots died at air shows in crashes in Oklahoma City, Atsile, Texas and Zeeland, Mich.

Stunt flier Tom Poberezny, president of the Experimental Aircraft Association, said accidents seemed unconnected, adding that it's important the crashes are thoroughly studied to make sure there's no underlying causes.



Deadly force... P-51 Mustang pilot, Harry Tope, crashed his WWII vintage aircraft at an airshow in Ottawa, Canada.

Learjet sold to Bombardier

by Hoyt E. Brown
Aeronautics Editor

Bombardier Incorporated of Montreal announced on June 22, 1990 that the negotiations for the acquisition of the Learjet Corporation had been completed to the satisfaction of all concerned parties.

The formal announcement of the agreement took place on June 29, 1990, when the formal purchase document was witnessed by Learjet's 2000 Wichita employees and government officials.

The document was officially signed by Laurent Beaudoin, Bombardier Chairman, Chief Executive Officer, and Brian Barents, Learjet Chairman, President and Chief Executive Officer.

Participants in the ceremony included Consul General Carl E. Raffels, Sr. Canadian diplomat in the southwestern U.S.; Kansas Governor Mike Hayden; Wichita Mayor Robert Knight; and Mrs. Moya Lear, widow of Learjet founder William P. Lear.

Senator Robert Dole said he was "especially pleased that Learjet is joining a company of Bombardier's experience and reputation" and the

sale means that one of the proudest names in civil aviation will continue to grow and prosper.

Also absent was Senator Nancy Kassebaum who commented, "Learjet has always produced excellent business jets, and the purchase by Bombardier should give it the stability and resources the company needs to expand and improve its family of aircraft."

Congressman Dan Glickman stated, "I share in Wichita's pride in its long association with Learjet and join my community in looking forward to extending the association to Bombardier."

Governor Hayden said, "on behalf of the citizens of the state of Kansas, I welcome Bombardier to our state. We have long appreciated the contribution Learjet has made to our state and look forward to having the combined strengths of these two outstanding companies at work in Kansas."

Mayor Knight commented "Learjet is a solid member of Wichita's

business community. The partnership of Learjet and Bombardier will combine the talents of two strong companies and guarantee and even brighter future for the Bombardier/Learjet and Wichita. We are pleased to welcome Bombardier our newest corporate citizen."

Barents said he expected the company to reclaim "its leadership in the light and medium business jet market -- a category of our own invention. With two new models now competing for increased market share and an established world wide following of loyal owners and operators we believe Learjet is in an excellent position to take advantage of new opportunities."

Beaudoin said, "completion of the sale will enable Bombardier and Learjet to chart a new and promising future together. Not only is Learjet a very good fit with the rest of Bombardier's aerospace activities, but the product combination Canadianair and Learjet will result in the most comprehensive and unique range of executive jets to be offered on the market today, from the Learjet 31 to the wide-body Challenger."

The partnership of Learjet and Bombardier will combine the talents of two strong companies.

"The company needs to expand and improve its family of aircraft."



Upside down... The McDonnell Douglas MD-530N NOTAR helicopter flies inverted during an FAA certification flight over Mesa, Arizona.

by Hoyt E. Brown
Aeronautics Editor

Certification of McDonnell Douglas' new MD 520N/530N helicopters -- both featuring the NOTAR (no tail rotor) system -- is moving closer to reality.

Both helicopters, next generation versions of McDonnell Douglas Helicopter Co.'s proven MD 500 series are in flight tests and performing as promised, according to Jim Van Horn, NOTAR program manager for the company.

The NOTAR systems-equipped MD 500s are the first conventional, single main rotor helicopters without a tail rotor. The MD530N first flew on December 29, 1989. The

MD Notars to be certified in 1991

MD 520N's maiden flight was May 1, 1990. Both aircraft have reached 135 knots in forward flight, and 40 knots in rearward and sideward flight.

Federal Aviation Administration certification is expected by year-end, said Van Horn. The eight-month program will be conducted in Mesa and other sites in California and Arizona.

Work on the NOTAR system is pushing McDonnell Douglas to the forefront of the rotorcraft industries efforts to weave lightweight, durable composite materials into primary structures applications. MD 520N/530N helicopters using all-composite tailboom empennage that weigh approximately 90 pounds, a nearly 20% savings over the equivalent conventional aluminum tail assembly.

Composite materials are beneficial to helicopter operators because the lighter composite parts increase payload and reduce operating costs by extending the service life of components. The company is designing its composite parts to have operating lives of at least 5000 hours while others will be replaced as needed.

In the NOTAR system, low pressure air is circulated through the tailboom to provide anti-torque and directional control. Air vented through slots on one side of the boom captures the downwash of the main rotor, resulting in lateral lift and producing 60% of the anti-torque force required in a hover. The remaining air is vented through a movable thruster at the end of the boom for directional control.

Flight tests show the NOTAR system significantly reduces pilot workload and perceived helicopter noise while improving flight characteristics and the safety of passengers, crew and ground personnel. The MD 520N is powered by the Allison 250-C20R-2 turbine engine while the MD 530N features the Allison 250-C30.

Autos for sale

1982 TOYOTA COROLLA - Engine in great condition, super ride. Must sell \$2700.00. O.B.O. Contact John Lake Box 7089.

1978 TOYOTA COROLLA Station Wagon. Automatic 108K runs very strong. New battery, good tires. \$750.00. O.B.O. Call Bill 255-2024.

1985 DODGE SHELBY CHARGER Turbo 2.2, Mustang/Silver, 60K Louvers, New Front Tires, Water Pump, AC and Alternator. All Revisited. \$3500.00 O.B.O. Call Bill 255-2024.

FOR SALE: 1985 Ford Tempo. 11,450/10,000/air cond. 80,000 miles. \$3500.00 firm. Call 238-1008.

Cycles for sale

MEN'S 27" TECHNIUM RALEIGH 10 speed racing bike w/new rim, tire and lock. \$200.00. Call 253-6265.

Misc. for sale

GUNS - Federally licensed firearms dealer. I have firearms for all your needs. I also carry optical systems rifle scopes, etc. Reloads available. PMJ only - 10% over wholesale and tax. Dave 756-0203.

SHIRTS FOR SALE - AMT backup - 380 cal stainless steel, 5 shots, \$225.00. (New Never Fired) AK-47 Hungarian (1 of 7000 in country) complete with bayonet and 3 mags, \$7500.00 Remington 870 police riot 12 gauge, \$200.00. Dave 756-0203.

FUR - BURBORD - Good condition, \$100.00. Call Luis at 238-7748.

FOR SALE: Double bed like new \$55.00. Desk & chair \$25.00. Chest & draws \$10.00. Sofa (black & white) \$50.00. Call Lisa 252-4044 or afternoon/evening at 255-7497.

SH GARAND FOR SALE: Parkized finish, Springfield armory, 30-06. \$400. Call 156-9476.

GERMAN CAR REPAIR - Professional service on VW Audi, Beetle, Rabbit, Golf, Scirocco, Jetta, GTI, 4000. Factory trained. 10 years exp. Suspension, brakes, struts, C.U. joints, horn injection, routine maint. & engine overhaul. SCCA competition mode. Only \$14/hr labor for ERAU students/staff. Labor warranty. Contact Robert Watlick 238-0386 or ERAU Box 2193.

BOOKS FOR SALE: MA41 ADVANCED ENGINEERING MATH \$35.00, in very good condition. US305 THERMODYNAMICS \$55.00, almost brand new. Write to Box 6637 for more information.

COUCH FOR SALE, 3 person couch, black naugahyde, good shape, only \$250.00! Also 12 VOLT POWER SUPPLY for sale, good for car stereo work or bench use. Good for aviation people or automotive mechanics. Only \$10.00. Call Robert Watlick 238-0386.

STEREO CABINET: looks great only \$25.00. VCR: 144 channel, table ready, remote, HQ circuitry, programmable, only \$185.00. Call 760-3219 leave message.

CAR COVER: from Beverly Hills motor accessories, light blue. Fits Charger, Mustang, etc. 1 year old. Clean. \$85.00 O.B.O. 255-2024 Bill.

FOR SALE: Mobile Home, 12 x 60, 2 Bedrooms, utility shed, central A/C, swimming pool, good condition. In family park 3 miles from ERAU in Pon Orange. Park amenities include community pool, tennis courts, children's playground. Lot rent only \$147.00 per month. Some furnishings negotiable. Washer look-up. *Only \$9750.00. Call Laurie at extension 6039(day) or 767-9834(evenings).

2 MISSION 100 WATT Speakers, 1 Sanyo Stereo Tuntable with linear tracking, full Auto operation, etc., 1 Marantz stereo amplifier. Asking \$375.00 O.B.O. For All. Call Kevin 760-6152.

FOR SALE: weight set w/bench, curl bar, dumb bell bars. Approx. weight 180lbs. Call C.B. at 238-1490 \$60.00.

HUNTER BEACH CRUISER - excellent shape. Bought new from Ormond Schwinn for \$250.00. Red, 6-speed, wide tires, alloy wheels with stainless spokes. Hardly ever ridden. Comes with water bottle, manual and original receipt. Only \$185.00! Also multimeter good for AMT student \$5.00. 12 Volt power supply good for bench use \$10.00. Contact Robert Watlick 238-0386.

FOR SALE: 2 living room chairs, can be sold separately, \$10.00 each. Call C.B. at 238-1490.

FOR SALE: General Electric washer and dryer \$450.00 for the set. White, Under 2 years old. 13" Color TV w/channel presets and times \$60.00. J.C. Franny medium sized microwave \$200.00. Call 761-4001, leave message.

Miscellaneous

WANTED: Tubular locks (single cam) type. Call 258-5974 if you have any you would be willing to sell.

RESUME SERVICE - cheap, fast and professional. \$5.00 for original, you may keep disk for future updates. Call John 6041255-8627 or contact box 7089.

GUITAR LESSONS: instruction given at Daytona residence. Start learning now! 238-1008.

GLIDER RIDES and instruction: Bob Lee Airport. Off 15A in Deland. Open Thursday thru Sunday, 11am on. (904)736-6588 or (904)383-5014 even.

ROOMMATE NEEDED for fall semester only. Call 788-2989 To Discuss Details or Write ERAU/Box 4037.

ROOMMATE NEEDED: M or F, share 2 bedroom apt. \$205/mo. & 1/2 electric & phone. 1 mo. security deposit. Move in Aug. 1st. Call Andre at 253-0808. Apt. complex has pools, tennis courts, laundry, and security guard, A/C, dishwasher, 2 miles from school, 2 miles from beach, shopping 3 blocks away.

Personals

TO SOL, Good luck on your quest. I hope you find her. N.

Strip a man of his beliefs and you strip him of his identity. N.

CLASSIFIED AD POLICY

- Non-commercial classified advertising and personals are free to the student body, faculty and staff of Embry-Riddle with a 35 word limit.
- All other non-commercial advertising is \$10 with a 35 word limit. Each additional word is 10 cents.
- Commercial advertising is available through the Avion advertising department.
- Classified advertising is carried out by filling out a classified ad card in the Avion office.
- Only one classified ad per card. Name and address of advertiser must be included for the ad to run.
- Ads will run for two issues and may be renewed by filling out another classified ad card.
- No classified ads will be accepted over the phone.
- For more information, stop by or call the Avion office at (904) 239-6049.

I WILL be flying up to Wisconsin between Term B & Fall Semester, leaving around August 18 and returning around August 27. I have a couple of seats available. Cost - About \$200.00 round trip. Call Andy @ 760-0241 or leave msg. in Box 3112.

ARE YOU planning a trip on TWA in the future? I can save you money on your ticket. Call Eric at 258-6854.

NEED HELP in Math, Physics or Chemistry? I can help I am a SENIOR All student. Call Kenny at 760-0241.

Roommates

ROOMMATE WANTED: Male or Female to share 2 bedroom apt. Furnished. Washed, dressed & desk included in room. 1/2 utilities & phone. \$200.00 Mo. Rent, Nice apt. in 3rd floor. Must see. Call Janey at 252-6247 leave message.

Notices

FAA Pilot Written Exam Schedules

ERAU will administer FAA Pilot and/or Instructor Written

Examinations for the following:

Examination	Number of Questions	Time given
(PA) Private Pilot-Airplane	50	6hrs.
(CA) Commercial Pilot-Airplane	100	5hrs.
(FA) Flight Instructor-Airplane	100	6hrs.
(FO) Fundamentals of Instruction	50	4hrs.
(BG) Ground Instructor-Basic	100	6hrs.
(AG) Ground Instructor-Advanced	100	6hrs.
(ATP-121) ATP-Airplane	100	6hrs.
(AD) Aircraft Dispatcher	100	6hrs.
(ATA-135) ATP-Airplane	100	6hrs.
(IRA) Instrument Rating-Airplane	60	6hrs.
(FI) Flight Instr.-Instrument	50	6hrs.
(IG) Ground Instr.-Instrument	50	6hrs.
(FEB) Flight Engineer-Basic	50	6hrs.
(FEJ) Flight Engineer-Turbojet-727	50	6hrs.

DATE TIME PLACE
July 11 & 18 Wed., 0900 H-117, GRW Complex
July 28 Saturday, 0900 G-109, GRW Complex

Students intending to take an FAA Pilot Written Examination are required to sign up in Office G-104 or call extension 6830 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 and Airman Certificate, driver's license, or other official document.

Explanation of appropriate forms and procedures will be given. 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.

Advance Registration

Advance registration is now being conducted in the office of registration and records, located on the 2nd floor of the student center extension. The office hours are 8:30am to 4:30pm daily.

Advance registration for Fall 1990 will be available through August 3, 1990. In order to register, please obtain cashier's clearance (Spruance Hall), and have your registration form signed by your advisor or program chair.

Continuous Add/Drop for Fall 1990 is also being conducted from the office of registration and records. Deadlines for this process are August 15, 1990 for Fall. Please obtain the appropriate signatures as stated on the "Registration Procedures" page of the schedule book of courses.

JUAN, The left wing has to be unrolled also. BOB

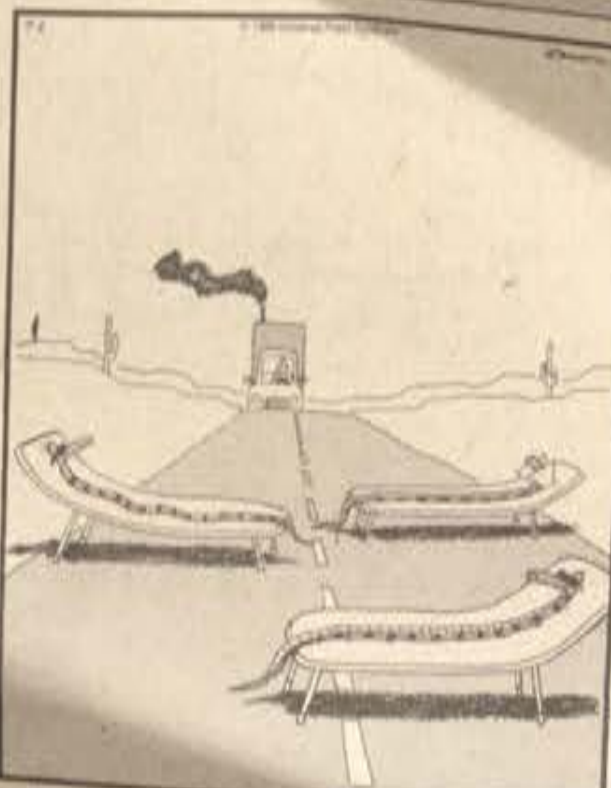
Calvin and Hobbes

by Bill Waterson



Far Side

by Gary Larson



Gus saw them when he created the hill: snakes. Three of them, basking on the road. Probably diamondbacks.



Suddenly, two bystanders stuck their heads inside the frame and ruined one of the funniest cartoons ever.



"Well, we could go back to my place, but you have to understand — I'm serious when I say it's just a hole in the wall."



"Take another memo, Miss Wilkens... I want to see all reptile personnel in my office first thing tomorrow morning!"

Mister Boffo

by Joe Martin



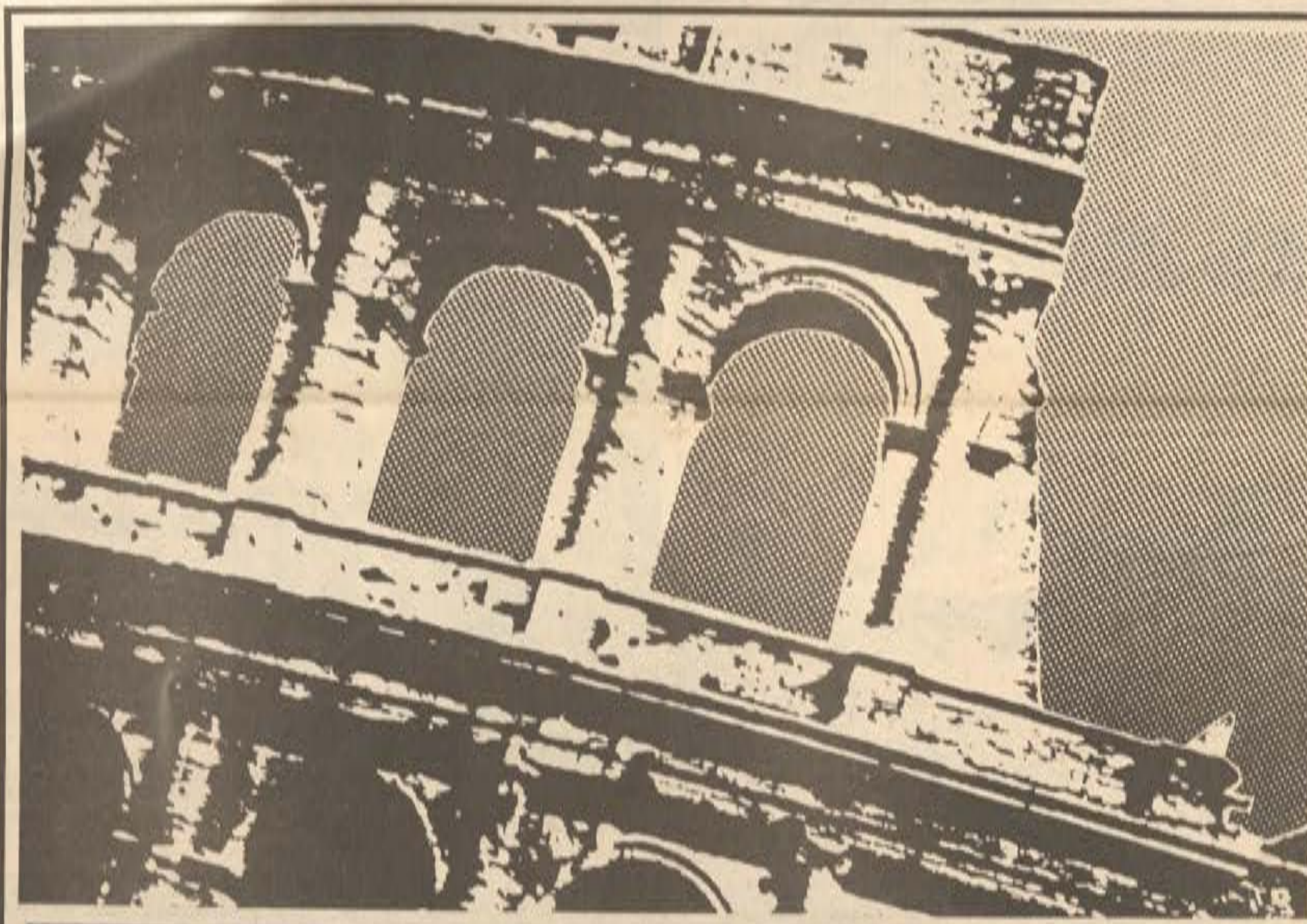
Mother Goose and Grimm

by Mike Peters



**Perfection results
from a true eye for detail.**

**Ours is a sight
you do not want to miss.**



COLISEUM

DANCE CLUB

176 N. BEACH STREET DAYTONA BEACH, FLORIDA
(904) 257-9982