

2-28-1990

Avion 1990-02-28 (B)

Embry-Riddle Aeronautical University

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Space Technology

B

Volume 64, Issue 6

February 26, 1990

Weather halts *Atlantis*' mission

Deployment of secret defense payload being plagued with delays

by **Derrick Seys**
Space Technology Editor

After delays due to the crew health and a slight mechanical problem, the Space Shuttle *Atlantis* still remains on launch pad 39-A due to unsatisfactory weather conditions at the site. At the time of press, the mission may have completed its successful ascent into orbit and be progressing towards the deployment of a secret defense payload.

The mission has been plagued with delays. Launch commentator Lisa Malone uttered the words "we have scrubbed" several times awaiting for the passage of one concern or another.

The latest delay occurred Monday when the surface winds failed to remain below the 24 knot gust limit.

Monday morning's delay has caused for a 48 hour recycle period. The next launch attempt of *Atlantis* and its dedicated Department of Defense mission will be made Wednesday morning between 12:00 and 4:00 a.m.

"We're just waiting, the winds at the Cape do the craziest things," said Captain Tom Strange of the U.S. Air Force regarding the high winds when the window opened at midnight. However, an increasing trend developed.

The effect of the high winds on the current Shuttle configuration was evaluated and a decision was made to up the 24 knot limit to 26 knots.

On a night where a nationally televised movie portraying the *Challenger* accident aired, many struggled at this decision. According to NASA spokesperson George Dillard, "the limit could be raised to 30 knots for this mission." He stated the cross-wind criteria is dependent upon the direction of the winds and the actual Shuttle configura-

tion, including the weight of the loaded orbiter. Earlier, an icicle hanging from the gaseous oxygen vent arm also raised similar concerns, but proved to be of no significance after discussion with Rockwell engineers in Downey, Calif. The temperature was in the 50s reminiscent of that cold day in January 1986.

A Morton-Thiokol representative was asked if this posed any concern and said no problem will be encountered with the O-ring seals now that joint heaters were now installed on the solid rocket boosters. He said the thermostatically controlled heaters are activated approximately eighteen hours before lift off.

Meanwhile, waiting for the evaluation of the winds, a layer of low level clouds moved in and obstructed the view of the Shuttle Landing Facility. Should a return-to-launch-site abort be required, a visibility limit is established to accommodate an emergency landing. The easterly moving clouds at 5000 feet caused this criteria to be beyond the limits. The clock had not started counting when this occurred at 2:32 a.m. EST unlike an earlier attempt.

For the previous day, the clock was halting at T-31 seconds when a loss of computer signal concerned managers. While investigating the mandatory computer's problem Sunday, the Shuttle's auxiliary power units began to show a heating problem because of the extended period of time at T-31 seconds. The unit's liquid oxygen propellants were too cold, 4.5 degrees less than the allowed -297°F.

Launch controller Bob Seick has repeatedly

had to cancel the mission, but the crew is not discouraged. John Creighton, mission commander feels the launch team is doing all they can to create a successful lift off.

The entire five man crew will return to the Johnson Space Center in Houston to continue rehearsal of the flight plan prior to Wednesday's attempt. This includes practicing approaches with trainer aircraft.

The crew consists of John Creighton, David Hilmers, Richard Mullane, John Casper, and Pierre Thuot. Their mission is presumed to deploy a observation satellite to cover the Soviet Union. All information pertaining to the payload is classified.

The weather conditions pose a 60 percent chance of violating launch criteria Wednesday morning. The 48-hour turnaround period is designed to replenish the liquid oxygen and hydrogen fuels used in the Space Shuttle Main Engines, and give the launch team a break from launch activity.

Tuesday afternoon, managers met to make a decision on whether to attempt a launch Wednesday morning. If the decision is made go for launch, the external tank will be loaded with the cold liquid propellants. At the time of press, a decision had not been made, but it looked promising. The astronauts arrived at KSC at 10:30 a.m. Tuesday anticipating a lift off.

These delays total the most for a given mission since the return to flight in 1988. The current count stands at four. The record is eight held by the orbiter *Challenger*.

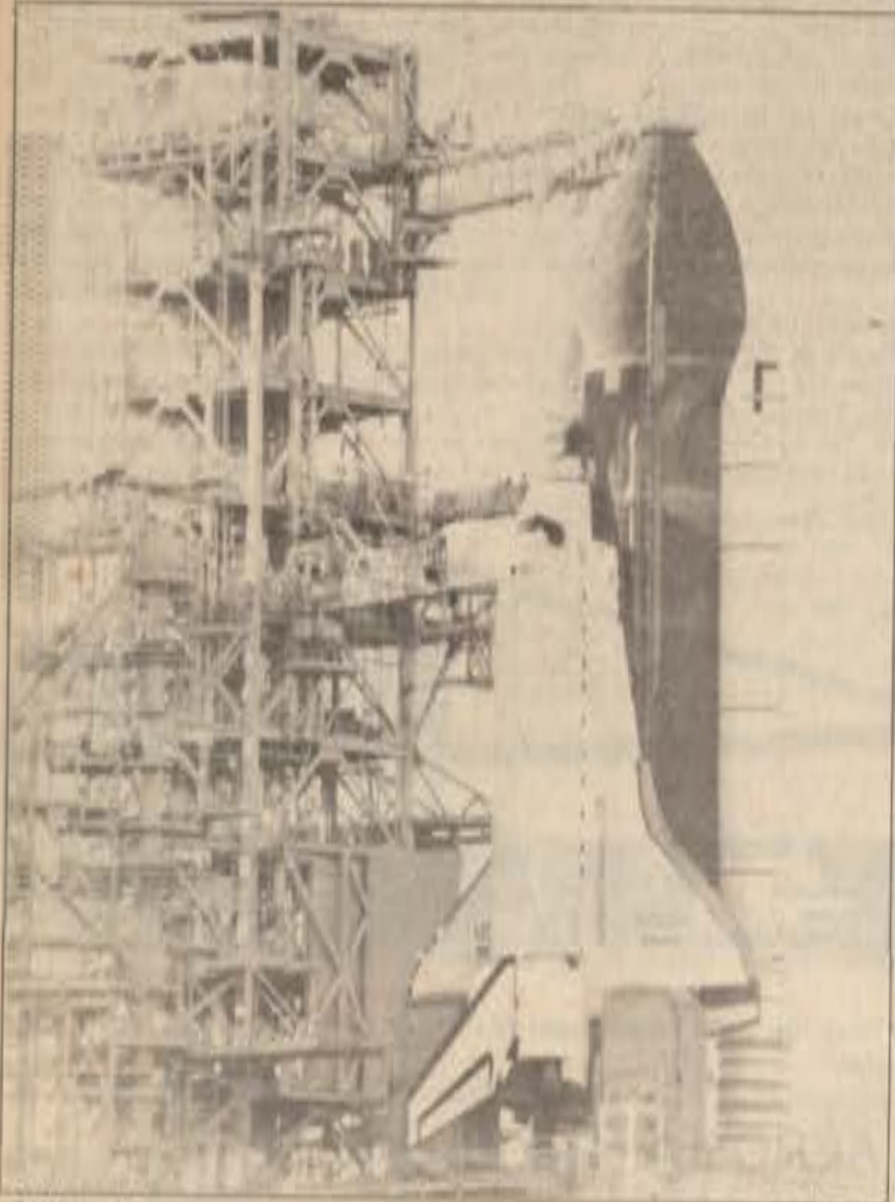


Photo by Chuck Seay

Still waiting...

Atlantis with a secret satellite stowed in its payload bay await lift off. The mission has had to face numerous delays and should lift off soon.

"We're just waiting, the winds at the Cape do the craziest things..."

**Captain Tom Strange,
U.S. Air Force**

Voyager to take out-of-this-world photo

by **Joshua S. Mussaf**
Space Technology Writer

The Voyager deep space probes, launched in 1977 have amazed scientists around the globe with the views of our neighboring planets, Jupiter, Saturn, Uranus, and Neptune throughout the past thirteen years. Now Voyager 1, which is about 3.7 billion miles from Earth, will have one final opportunity to amaze scientists as it has taken an unprecedented family portrait of most of the planets in our solar system.

The collection of images will be from a unique point-of-view -- looking down on the solar system from a position 32 degrees above the ecliptic plane in which the planets orbit the sun. No other spacecraft has ever been in a position to attempt a similar series of photos of most of the planets.

This is not just the first time, but perhaps the only time for decades that we'll be able to take a picture of the planets from outside the solar system," said Voyager project scientist Dr. Edward C. Stone. No future space missions are planned that would fly a spacecraft so high above the ecliptic plane of the solar system, he said.

While the solar system portrait won't have scientific value, its purpose is "really historical," said Bob MacMillin, a spokesman for National Aeronautics and Space Administration.



NASA photo

Smile...

Planet Earth will be one of the bodies featured in Voyager's galactic photo.

The photo opportunity came on February 13 and 14 over a four hour period. Voyager 1 turned on its wide- and narrow-angle cameras at Neptune, Uranus, Saturn, Jupiter, Mars, Earth and Venus. Mercury is too close to the Sun to be photographed

by Voyager's cameras, and Pluto is too far away and too small to show up in images taken by the spacecraft. Voyager 1 shuttered about 64 images of the planets and the space between them. The constellation Eridanus (The River), stretching behind the planets from Voyager 1's perspective, will provide the backdrop for the images.

The complete portrait will be too large to be published, but NASA may assemble the 64 eight-by-ten photos into a mosaic stretching 100 to 150 feet along a wall at the Jet Propulsion Laboratory.

Due to the schedule of several spacecraft being tracked by NASA's Deep Space Network (DSN), the images will be recorded on board Voyager 1 and played back to DSN receivers on Earth in late March. The Voyager imaging team estimates that processing the images reveal as much detail as possible will take several weeks. Most of the planets will appear as relatively small dots against a background of dark space.

Voyager 1 completed flybys of Jupiter in 1979 and Saturn in 1980. Voyager 2 flew past Jupiter in 1979, Saturn in 1981, Uranus in 1986 and Neptune last August. Both are now on missions that will take the spacecraft to the boundary of our solar system and into interstellar space.



Ariane 4

Ariane rocket explodes

by **Joshua S. Mussaf**
Space Technology Writer

The thirty sixth Ariane launch, which was to put two communication satellites into orbit for Japan, ended in a fiery explosion 2 minutes, 30 seconds into its flight. The payloads lifted off at 8:17 p.m. and roared upward over the Atlantic ocean, lifted by an Ariane 44L launch vehicle with four strap-on liquid propulsion boosters.

Twelve to 15 experts will be named to investigate the incident and issue a report within two months. While the investigation is underway, all Ariane launches at the space center in Kourou, French Guiana, will be suspended.

The launch last Thursday was the thirty sixth Ariane mission. The explosion was the first since the 18th Ariane flight blew up May 31, 1986.

Arianespace, a federation of European companies took over commercialization of the Ariane program from the European Space Agency in 1980. It is responsible for building, operating and marketing launch services. Ariane shots have become routine, with successful missions about once per month.

Spacesuits protect man from outer space

by **Jose L. Vazquez-Delgado**
Space Technology Writer

Many people think that space is a dark, cold, empty place full of silence and nothing else, but they are incorrect. Space has a very hostile environment.

Temperature, radiation, celestial noise, and light conditions vary depending upon where a person is located in space. Only one thing is consistent anywhere in space and that is the vacuum of space. Therefore, to explore and work in space astronauts must wear something that can sustain life within it. Here is where spacesuits come in the picture.

Spacesuits and the space program go hand in hand; in order to be out of a spacecraft you need a suit. The first suits used in the Mercury program were a modified version of a U.S. Navy high altitude jet aircraft pressure suit.

Better mobility was taken into consideration when making suits for the Gemini spacecraft. In fact, it was in the Gemini 4 flight that astronaut Edward White first tested a spacesuit in the zero gravity of space while performing the first U.S. spacewalk.

All missions needed a new suit design basically, since the complexities of space exploration ad-

vanced at a fast rate. It was the Apollo mission to the moon that tested the creativity of NASA's spacesuit designers. Not only did the suits have to provide basic life support systems, but also offer protection from jagged rocks, the searing heat of the lunar day, and most important it had to be flexible enough to permit stooping and bending as the astronauts gathered lunar samples.

The Space Shuttle era has again innovated spacesuits. Spacesuits are pressurized at 4.3 pounds per square inch (psi) and the oxygen content is at 100 percent instead of 20 percent as on Earth. This means an astronaut needs to spend several hours breathing pure oxygen before he or she can go out into space. Space suits for the space station era will be pressurized to 8.3 psi.

The suits shield the astronauts from micrometeoroids, insulates them from the extreme temperatures in space, and filters the sun's radiations. The temperature on an astronaut in space can reach 250 degrees Fahrenheit on the side exposed to the sun and -250 degrees Fahrenheit on the side exposed to darkness.

Shuttle astronauts wear different suits depending on the job they are doing. During ascent and entry they

wear a partial pressure suit with a parachute and a helmet for communications. These suits have inflatable bladders that fill with oxygen from the shuttle at reduced cabin pressure to prevent astronauts from blacking out. They will support a crew-member for a 24-hour period in a life raft in case of an egress over water.

Today's spacesuits are made with interchangeable parts so that they can fit different people. Previous suits were tailored to every astronaut. Spacewalk suits have a urine-collection device, a liquid cooling and ventilation garment with water cooling tubes, and a "Snoopy Cap" for communications.

The major components of the suit are the lower torso, the hard-shell fiberglass upper torso, the gloves, and the helmet assembly with an extravehicular visor. The suits are comprised of several layers of polyurethane-coated

nylon pressure bladder, a polyester structural restraint layer with folded and plated joints (for mobility), and a woven Kevlar, Teflon, and Dracon anti-abrasion outer layer. The suit is rated with an 8-year life expectancy and weighs 107 pounds when fully assembled.



NASA photo

Training...

The spacesuit also serves as a wet suit during mission training.



NASA photo

Protected...

Space suits have evolved to become very sophisticated garments. They now protect man from the harsh environment of space to allow for work outside spacecraft.



Up, up, and away...
Boeing's newest twinjet, the 737-500, recently received certification by the FAA after approximately 650 hours of flight testing.

FAA certifies Boeing's new 737-500

SEATTLE - The newest commercial jet offered by Boeing Commercial Airplane Group, the 737-500, was certified for commercial flight by the U.S. Federal Aviation Administration following an extensive flight test program.

The jetliner completed approximately 650 hours of tests, including 375 hours of flight tests.

"Mechanical dispatch reliability during the test program exceeded 99 percent," said Charles Higgins, Boeing's 737 test certification and performance manager.

Higgins attributed the high reliability to the experience gained in developing two other new 737 family members and to the intensive planning and monitoring of the test program by a team of Boeing flight test and engineering personnel.

This newest twinjet provides airline operators with a new-generation replacement for the ubiquitous 737-200 twinjet. It is about the size of the familiar -200 aircraft, but with all of the advanced technologies of the larger 737-300 and 737-400 models.

Engines for the -500 are from the same CPM56-3 series of powerplants offered on the -300 and -400 models.

This engine series is noted for its exceptional fuel efficiency, low noise and high reliability. The -500 will consume up to 20 percent less fuel per seat than a comparably configured -200.

These advanced engines assure that the 737-500 will be a good community neighbor at even the most noise-sensitive airport. In fact, the takeoff, sideline and approach noise levels are below the stringent "Stage 3" limits set by the U.S. government.

A fully integrated flight management system (FMS) for automatic control and guidance is incorporated in the 737-500 as it is in other new-generation 737 family members and the larger 757 and 767 types. The flight decks of all 737 models are available with an electronic flight instrumentation system (EFIS), incorporated cathode ray tube displays for primary flight instrumentation.

The 737-500 with 108 seats in mixed class, is the shortest-fuselage version of the new advanced technology 737s. It complements the 737-300, seating 128 passengers and the 146-seat 737-400.

The three new generation 737s enable airlines to select the sizes that match traffic loads, with full assurance that crews can operate any of the models due to a common type rating. Other advantages of commonality include reduced training costs and the ability to keep maintenance and spare costs to a minimum.

The three new generation 737s enable airlines to select the sizes that match traffic loads, with full assurance that crews can operate any of the models due to a common type rating.

First launched in May 1987, the 737-500 rolled out of the Renton plant on June 3, 1989. First flight occurred on June 30, 1989.

First deliveries to Southwest Airlines (USA) and Braathens SAFE (Norway) will begin in late February and early March, respectively.

Boeing fabrication division modernizes to meet increased production rates

Seattle, Feb. 15, 1990 - An unprecedented \$85 billion backlog of airplane orders puts Boeing Commercial Airplane Group in an enviable position, but also raises the challenge of increasing production rates to meet delivery obligations. One major aspect of that challenge involves improvement and modernization of plant facilities.

"We are now moving toward the highest production rates ever," said Bill Selby, vice president/general manager of Boeing Commercial Airplane Group's Fabrication Division. "The simple fact is, we will be unable to support the rates unless we make major improvements."

Selby said, "Our strategy is to optimize our processes wherever practical by improving the flow, upgrading tools and equipment and simplifying operations."

Construction in Auburn, Portland, and Spokane illustrates the effort needed to implement the improvements. At Auburn, a new Sheet Metal Center is under construction with completion slated for mid-1990. The new plant, which will enclose more than 800,000 square feet (74,320m²) of space, will be in full production by 1993. The facility will feature new-generation machines and a factory layout that will make it the most efficient factory of its kind.

Increased production and the opening of the Sheet Metal Center will cause increased volumes of shipping and receiving. To improve traffic patterns and provide better internal and external service, a new Transportation Terminal was constructed in Auburn. The terminal covers 45,000 square feet (4,180m²) and will have computerized networks to track shipping and receiving.

Under construction in Auburn is a new \$26 million, 216,000 square-foot (20,066m²) Emergent Manufacturing Facility (EMF), designed to produce spare parts and schedule-critical parts for Boeing Commercial Airplane Group. The EMF is targeted for completion in September 1990.

At Boeing Portland, a new Super Profiler Facility was recently inaugurated. The 10,800 square foot (1,003m²) building houses an Ingersoll super profiler, a numerically-controlled machine which mills parts. The machine will be used to produce large aircraft parts such as the 747 and 767 flap tracks.

"The new facility is the result of more than twelve years of planning and teamwork between Boeing Portland and of planning and teamwork between Boeing Portland and the Ingersoll Machine Tool Company," said David Bass, the general manager of Boeing Portland.

The Super Profiler building is the first phase of a proposed facility that will eventually house nine super profilers by 1995, Bass said.

In Spokane, Washington, Boeing is building a 230,000 square foot (21,367m²) manufacturing plant which will produce environmental control system ducts and floor panels. Construction of the \$23 million plant will be completed in mid-1990 with full production scheduled for 1991.

Selby said there are more changes on the drawing board, but final decisions are pending on other new projects.

"There are so many variables to consider, with so much at stake, that we must be prudent in the way we manage our resources," he said.



House raising...
Slated for completion by mid-year, the new Sheet Metal Center will enclose more than 800,000 square feet of space.

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<p>THUR</p> <p>11-7 \$1.50 Daiquiris</p> <p>7-12 \$1.00 Imports Whirlwinds</p>	<p>HAPPY HOUR 5-7 MON.-FRI.</p>	
<p>FRI</p> <p>11-7 \$1.50 Goombay Smashes Today's Paycheck Stub = 1 Free Drink</p>		

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Deluxe Paint Three proves to be an excellent graphics program

by Jason Simon
Data-Tech Editor

When one thinks of a shadow on most computers, the image brought to mind is of a black blob cast on the background of the highlighted image. Thanks to the power of the Amiga and Deluxe Paint version three the black blob is gone forever.

Deluxe Paint three is the creation of Electronic Arts, one of the most experienced software producers in the world. There have been two versions of this program before and Three is the most advanced of them all.

Lets get started

After activating the program from the command window with the mouse, the program will load. After the loading is complete, the user will come upon the screen format requester. This screen allows the user to pick the bitmapped size of the working screen.

The user can select low-res, where the apparent size of the screen is 320 pixels high by 200 pixels wide (320x200), or medium-res which is 640x200, interlaced-res at 320x400 or hi-res 640x400. In addition, there is the overscan mode where the user can choose to work on a screen that is up to 1008 pixels high by 1008 pixels wide by scrolling the screen to work on the image.

The screen format requester also asks the user to choose how many colors he wishes to use. The user can choose from a minimum of two up to a maximum of sixty-four, depending on the apparent size of the screen and how much memory is in the system.

Welcome to your new toolbox

After passing the requester screen, the

painting screen comes into view. Across the top of the screen is the pull down menu bar and, along the right side of the screen, the painting "toolbox" is found.

The toolbox contains over 21 separate functions of the program. At the top of the toolbox screen the user will find where the built in paint brushes are stored. Here the user can choose from square and circular brushes of different sizes. Some irregular shaped brushes also exist in this menu.

The next tool is the dotted freehand tool. This device allows the painter to draw lines or shapes that are composed entirely of dots. If the artist hold down the shift key he will restrict the mouse to horizontal and vertical lines.

The continuous freehand tool is the same as the previous tool with two exceptions. The first is that the line drawn is solid and the second is that the shapes can now be filled by toggling a key on the keyboard.

The airbrush gadget is similar to a real airbrush. The user can select how much color will come out of the "paint can" using a requester that can be activated with the right mouse button. This effectively restricts the amount of "flow" through the "nozzle" of the airbrush.

The fill tool is designed to fill in large amounts of space with color. When the user activates this device, which looks like a paint can with paint flowing out of it, with the right mouse button, the user can select whether the filled color will be solid or will be shaded using a unique process known as "dithering."

Getting closer to your work



Animate...

Deluxe Paint Three brings the power of a sophisticated animator home to Amiga users.

The magnify tool is one of the most important tools in the program. Using this tool, the user can zoom in on a part of the picture and work on individual screen pixels. The amount of detail work that can be done is incredible.

There are other gadgets that can activate such things as straight and curved lines, filled circles, squares, polygons and ellipses, but the most important tool in this program is the create brush gadget.

Anything can be a paintbrush

With the brush gadget, any drawing or picture instantly becomes a brush. The user can create multiple images or smear the brush over the screen. In addition, Deluxe Paint Three allows the user to shear a brush, which is best described as a calculated curve, in the X and

Y axis. Other gadgets allow the user to rotate the brush in the X, Y and Z axis. This can be used to create simulated three dimensional objects.

Light cycles

An inherent function of this program is the "cycle colors" mode. What the user does is simple, he selects the colors menu from the title bar and selects the palette with the mouse button. Next he selects a range of colors, from two to sixty-four, that he wants to cycle. After the painter selects the colors the cycle can be activated with the tab button. The effect is that the chosen colors will cycle when placed on the screen. This is ideal for simple animations from simulating running water on a screen to activating the flashing light at the top of a drawn TARDIS, a time machine used by Doctor Who, a British science fiction hero.

True to life shadows

Extra halfbrite, a form of shading, has been added to this new revision. Halfbrite can be best described as taking up to 32 colors on the color palette and decreasing the "light" value by fifty percent. This creates an additional 32 colors to form a 64 color palette. These halfbrite colors are excellent for creating real shadows instead of the black blob shadows found in other computers. It is very impressive to be able to see background colors in a computer generated shadow, which looks very close to a real life shadow.

One example on one of my disks is Halfbrite Hill. This features a multicolored background with animated cells of Fred Astaire in Halfbrite. After the cells load, Astaire "dances" in a shadow mode where the user can

see the hill right through him. It is a marvel of Amiga computing power.

Animate your pictures

The biggest change in Deluxe Paint Three is the built in animator. The basic idea of the animator is simple, instead of having only one screen to work on the user can access many screens at once. Then the animator will flip through the frames in rapid succession, creating the illusion of movement. The manual does not state a maximum number of cells that can be used, so it is assumed that the number of cells is only limited by the amount of usable memory resident in the system.

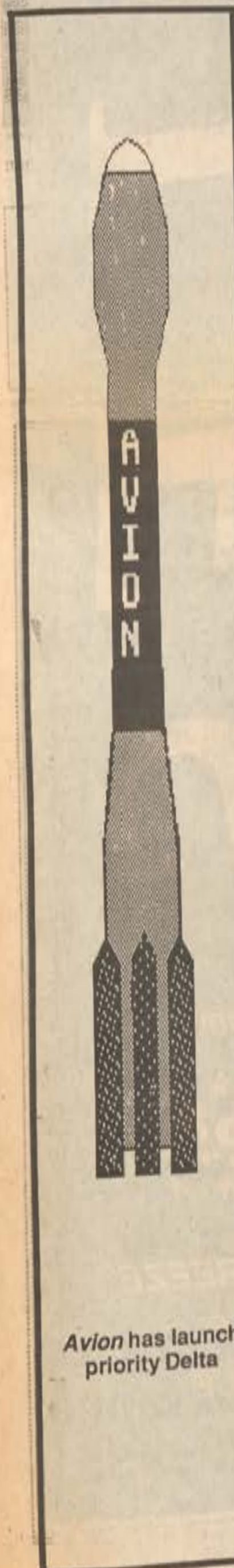
Unfortunate limitations

Deluxe paint three is an excellent program, but it lacks many good features. This program lets the user control up to 64 colors from an internal palette of 4096. While this may seem like a lot for other computer users, it scratches only the surface for Amiga users. More advanced programs such as Digi-Paint Three allow the user to manipulate up to 4096 colors from an internal palette of, they claim, over one billion colors.

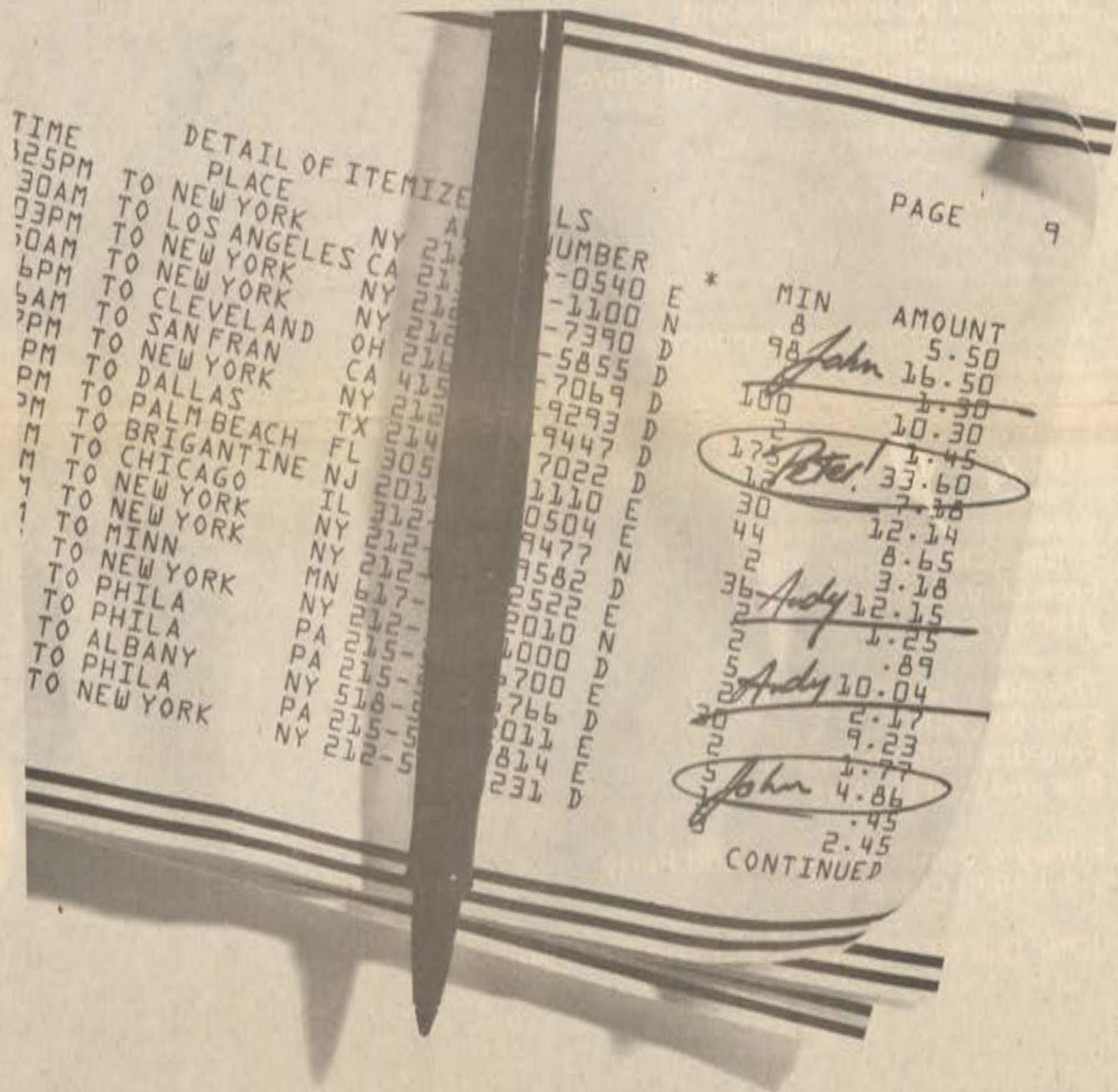
In addition Deluxe Paint Three limits the amount of colors that are available to the user in hi-res mode. The user can only access sixteen colors in this mode. While its competitors allow 4096 color manipulation in the same resolution.

Even with these limitations Deluxe Paint Three is an excellent graphics package for computer artists who are interested in a program that can animate at the same time.

Deluxe Paint Three is available for the Amiga and is produced by Electronic Arts.



Avion has launch priority Delta



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Wednesday-Legs contest
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Free champagne from 8-11
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THE OYSTER PUB

Calvin and Hobbes

by Bill Waterson



Mister Boffo

by Joe Martin



Far Side

by Gary Larson



"OK, Frank, that's enough. I'm sure the Jeffersons are quite amazed at your car headlight device."



Competition in nature



"Coast, Dad, coast!"



Dog restaurants

Mother Goose and Grimm

by Mike Peters



Notices

Counseling Center Programs Spring 1990

Experience+Plus!

We are looking for "non-traditional" students who are interested in getting with other such students to join our group called "Experience +". Here at ERAU, a "non-traditional" student is defined as someone who initially entered college after a break of four years or more from academic studies. The purpose of this group is to form a supportive social network as well as to discuss issues that affect the non-traditional student. The group will meet for monthly luncheons.

If you are interested, please contact Lynne Norris or Patty Ruddy in the Counseling Center, 239-6035 for further information.

Free Information

The Center has books and cassette tapes that can be checked out plus many free handouts and brochures. The materials deal with numerous subjects such as stress reduction and relaxation, study skills, depression, grief, sexuality and relationships. The Counseling Center also has a biofeedback machine for stress reduction and video tapes that can be viewed in their Resource Room. The Counseling Center, located on the first floor of the Student Center is open from 8:00 am to 5:00 pm, Monday through Friday.

Campus Interview Schedule

Naval Aviation Depot, San Diego, CA Mar. 5,6

University Bookstore

The University Bookstore cashiers are accepting orders for faculty/staff academic apparel for April's Graduation.

Sexual Harassment Awareness Week comes to ERAU

Wednesday, February 28 at 7:30 p.m. in G-109/112. Dr. Dan Kelly and Nancy Parker sensitize female students to Embry-Riddle's Sexual Harassment Policy and Procedures.

Thursday, March 1 from 1:30 to 2:30 p.m. in A-109. The Sexual Harassment Awareness Panel consisting of faculty, staff and student members of the Sexual Harassment Committee will be available to address questions pertaining to Embry-Riddle's Sexual Harassment Policy and Procedures. All are welcome.

FAA Pilot Written Examination Schedules

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

	Max. No. of Questions/Times(hrs.) Allowed
1. (PA) Private Pilot-Airplane	50/6
2. (CA) Commercial Pilot-Airplane	100/5
3. (PIA) Flight Instructor-Airplane	100/6
4. (FOI) Fundamentals of Instruction	50/4
5. (BGI) Ground Instructor-Basic	100/6
6. (AGI) Ground Instructor-Advanced	100/6
7. (ATP 121) Airline Trans. Pilot-Airplane	100/6
8. (AD) Aircraft Dispatcher	100/6
9. (ATA 135) Airline Trans. Pilot-Airplane	100/6
10. (IRA) Instrument Rating-Airplane	60/6
11. (FIJ) Flight Instructor-Instr. Airplane	50/6
12. (IGI) Ground Instructor-Instrument	50/6
13. (FEB) Flight Engineer-Basic	50/6
14. (FEJ) Flight Engineer-Turbojet - 727	50/6

Date	Time	Place
Feb. 28	1300	G-109,GRW Complex

Income Tax Preparation

Volunteer Income Tax Assistance will be available every Tuesday from 5:00 pm to 8:00 pm in the Conference Room in Room A-117. This is run in conjunction with the Taxation Class taught by Ms. Wilson.

February is Heart Month

If we can generate interest in Halifax Medical Center's coronary risk appraisal, Heart Chac. It will be offered on-campus in the near future. The low cost (\$16) program offers blood tests for total and HDL cholesterol, blood fats and blood sugar, height-weight analysis, blood pressure check and a health-lifestyle history for risk analysis. Test data are entered into a computer that develops a personal coronary risk profile, calculates the probability of developing heart disease and makes recommendations for risk reduction. A personal, confidential evaluation of the test results is mailed to each participant.

Interested students should contact Kyra Olson, Health Services secretary, at ext. 6306. Be your own best Valentine and take a proactive approach to protecting your heart's health!

Parking

(continued from page A4)

the information and neglect it.

All eyes have a narrow field of vision where objects are actually focused and classified. We can perceive objects through peripheral vision, but cannot identify what is happening. Mr. Jenkins had the audience hold a quarter at arm's length to demonstrate the 15 degree arc of acute vision their eyes possessed.

Mr. Jenkins said the most effective way to avoid midairs is to develop an

effective scan pattern. Each pilot's scan is unique, but kept proper by knowing where to concentrate, clearing himself before each turn, on descents and climbs making gently S-turns to check for traffic, and making clearing turns before attempting maneuvers.

During normal flight, scanning 60 degrees horizontally left and right from the center visual area and 10 degrees vertically up and down will help spot aircraft in the pilot's flight path or those too close. Occasionally the pilot should check above, below, and behind the aircraft.

An aspect of an efficient scan is to fixate the scan every 10 to 15 degrees for up to two seconds for accommodation and detection. The pilot must also scan the instruments which will increase his flying efficiency.

Every pilot can follow a collision avoidance checklist consisting of: 1. Check your own condition; 2. Plan your flight ahead of time; 3. Clean windows and clear of obstructions; 4. Adhere to standard operating procedures; 5. Avoid crowded airspace; 6. Compensate for your aircraft's design limitations; 7. Equip for safety; 8. Talk and listen; and 9. Scan!

In addition to the scholarships, Ms. Geary disclosed that the \$25,000 for the new computerized parking system will come from the parking fine monies.

"The money for the computerized parking ticket system will be paid over the next two years" she said.

The computerized ticketing system has come under criticism by some students. "I feel as if big brother is watching me" said one student. "It's a waste of money" added the student.

"The university can actually do what ever they want with the funds" said Ms. Gary.

AOPA

(continued from page A4)

Assistance Grant. Approximately \$11,000 has been earmarked for this program, but has not been awarded at this time.

According to Ms. Gary, the funds are invested at the discretion of the university and are not in a simple savings account. "The funds are invested in a portfolio" said Ms. Geary. "The university can actually do what ever they want with the funds" she added.

Letter

(continued from page A2)

Flexing Muzzels

To the Editor:

There's a lot of issues which students need to improve at this University. Parking, food service, scholarships, athletics and SGA to name a few. Unless students take the time to identify what the problems are and how and why to correct problems or expand opportunities, we are going to continually fail to effectively deal with the university.

The fact is that students are not owning up to their responsibility to take part in the important process of evaluating problems and taking necessary action. It doesn't matter if you're a senior with only a semester to go, a freshman who just arrived, someone who thinks they don't need to be involved or just too disgusted to even want to try, these are the causes of our problems. People must make correct choices and carry out their preferred plan of action if we are to ever accomplish anything meaningful. We can't expect others to simply guess or assume that they have our support for solutions to problems, students need to actively support what needs to be accomplished.

What does this entail? Create a student-id. Like the identity of an in-

dividual, the identity of the Embry-Riddle student body needs to be cultivated through better communication and cooperation between all students and student groups. Until we start standing together and formulating pointed and organized goals, we will never succeed. Simply passing the buck, saying that complaints are meaningless or that it's someone else's job to get something accomplished; assuming that because some students are put in places to do these functions, is wrong. Better communication and teamwork among students is critical.

Why do we criticize and argue with ourselves when we should be formulating plans and ideas to deal with the problems at hand? It dismays me to read or hear that there's no voice or communication method between the students and administration. I have spent a year in SGA and I've done my best to communicate needs effectively.

I went directly to the University Controller during Summer B of 1989 to contest the late fee assessment on the first day of classes. Through negotiating with him, he agreed to assess the fee two weeks after the start of classes to reduce the chance of overcharging a student's account accidentally. More tasks could be solved if we would communicate amongst ourselves instead of using whatever authority we gain to use

against each other.

The university is "flexing muzzels" when it comes to student body identity. Although not overt, it cleverly distributes student organizations apart from each other so that factions of the student body will argue amongst themselves without knowing all relevant information. I believe that if students could spend an extra few hours a week staying on top of campus issues and making their opinions and reasoning known, more would be done.

Tina Matilla calls the SGA ineffective in voicing student concern, but how many students attend Student Representative Board meetings, Tuesdays at 4:00 pm. in the U.C. Conference room, to voice their concerns. If SGA members are not exposed to the problems and more importantly the effective method in dealing with it then failure is certain to result.

In any case, whatever side you may take to the preceding argument, it is a perfect example of the important issues which are occurring right around students and our inability to respond. We need to spend a little time to reconsider our method of working together and truly work together to make the outcomes the students need a success.

Until we do so, we will continue to fail to solve the most important student issues.

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1981 Honda Accord—Must Sell. \$850. Call Mark Ross at 258-7673 or Box 8672.

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Roommates

TOWNHOME FOR RENT—2 bedroom, 2 bath, brand new, Deerwood (behind the Mall), \$525. Call Nancy Sheldon 760-6000.

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For Sale—Set of Boston Acoustics 6X9's never installed \$150 obo. JVC portable CD player, very nice \$150 obo. Set of Pioneer Acoustic suspension 50 RMS speakers, \$100 obo. Contact Chris at Box 7237 or 756-8374.

For Sale—Cobra 40 channel base station with 80 usage sideband and Silver Eagle Mike. Will sell or Trade for \$200 obo. Call Greg at 257-1239 or box 8265.

For Sale—Color Monitor and adapter for an IBM PC convertible. \$249 obo. Call 760-4685, leave message.

For Sale—IBM PC convertible. Make an offer. Box G-225.

For Sale—Peavy Backstage Plus 35 Watt, distortion, reverb, bright and thickness effects. Separate Flanger Pedal. Both in great condition. \$150 for both. Call Glenn before 9 p.m. at 258-7379.

For Sale—4 Mustang Alloy Rims. \$600 value will sacrifice at \$50. Call 274-4010 anytime or 3 to 9 p.m., Call Shana at 258-3311.

For Sale—Over staffed love seat with handmade slip cover, \$50. 12 speed Perenza bike, only one year old, \$100. Contact Matt at 255-3057 or Box 6767.

For Sale—IBM PC/XT, Dual disk drive, 5 1/4 in. floppy, enhanced keyboard and IBM Preprinter. Muck software including Word Perfect, Lotus, Printmaster, etc. Also includes oak work station. All for \$1600. Call Paula at 239-6241, 8 to 5 weekdays.

IBM PC CONVERTIBLE 512K memory enhanced resolution screen with DOS 3.3. Call Brian at 760-3697, \$500 or best offer.

Miscellaneous

MULTIENGINE FLIGHT TIME Around \$35/hour for Piper Seneca trips to the Bahamas, March 10-11, 17-18; April 13-14; Spring Break, other dates also. Contact Cria Nicholson box# 6151. ph. 788-7552.

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Need a paper typed? I can do it for you. Typed, spelling and grammar corrected for \$1 per page. Contact Matt at 255-3057.

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- ➔ Non-commercial classified advertising and personals are **free** to the student body, faculty and staff of Embry-Riddle with a 35 word limit.
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Wanted—Designer to develop electronic schematic for invention. Call Greg or Ray at 257-1239 or box 8265.

Personals

BILL F., The puddle at my feet is getting a little large. I'm still waiting. Its up to you now.

RUI-SHARK Don't forget to put the landing gear down before landing in your C-132.

BILL AND TED, Thanks for the Valentine's wish. I had a great adventure. BOX 2623

DAVE, So you think chickens still fly. DOOM

COBY AND TIM, Stop running around in your underwear in the Dorm Halls. DOOM

ALISON, Cool picture dude, you gonna keep me company this summer? Come on, its fun. BRIAN

BUDDAH, Valentine's Day has come and gone - It was just a Wednesday! Soon you have a "true" Valentine's Day on me! QUEEN OF SHEBA

GREG AND HOBIT, I've heard you have been putting squirrels in your car. DOOM

JRD EAST, Yes we wanted a cook out. This did not mean to have one in the hall way. DOOM

TO TIII CHUCK AT LARGE! Don't pull on her ears, she knows what she's doing. FRIENDS OF CHUCK

BUDDAH Who loves ya, baby?!!...All of you! THE QUEEN OF SHEBA

COOPER, Hey big boy! Come up and see us sometime. THE GIRLS

OUR FLOWER CHILDREN, We miss you and the land of sanity. KRESS & BRIAN

PREPPY DAVE, I'm going to collect payment for your debts soon! Money or no money...

CHARLES, Looks like you and "tall cool woman in a black head" forever. TEAM PLAYER

ANTHONY, How does it feel to be an old man now? Do you want a cane for Christmas? I.C.

EVELYN, Hope you feel better soon and Happy late Valentine's Day! J.

OLAF, Are you ready to go island hopping? LOVE YA NANCY

Who exactly is the owner of that stimulating pink scooter? DINO

Where are you, Coran really wants that Drakkar! JEN

TO THOSE TWO MEN OF ROMANCE (BILL AND TED) Who exactly are you? THE EXCELLENT FEMALES ON CAMPUS

RICH AND MONICA, Congratulations on a new beginning! let's do it Right this time! SHANA

CHRIS, DON, DANNY, HAL, AND OLAF "A" for Efton. YOUR ADMIRING FANS

HEY DRILL TEAM, Remember what Brice says... Remember Rhonda's sign... Remember to "Kill the Wabbit," and Gwenhilda! DOORKNOB...VINCIL...OH OH

JENNY, We should have said something to him. He had such a great accent and smile. We'll always regret not saying anything to him. Maybe if we're in S.F. we can look him up. BINO

STAFF, Who's butt was that near my hand in the photo? CONCERNED SPACEMAN

BINO, We have to go back to S.F. We forget something - the doorman! JEN

ANDY, Where are you moving to and why are trying to run from me? THE BRAST

MIKE, Last.... TINA

KRESS, I love you... BRIAN

CHRISTINA, How 'bout that date? THE JOURNALIST

ANNA, I haven't forgotten. DERRICK

TO THE AUTHOR OF AARGH! DINO

MIKE F., What has happened to the grouse club on campus? CONCERNED MEMBER

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