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# SPACE TECHNOLOGY

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## NASA suits donated to children

By Greg Rezendes  
Space Technology Editor

Two Florida children who suffer from a rare condition that affects the control of their body temperature will reap the benefits of NASA space technology when they each are presented with a space-derived personal cooling system, or "cooling suits."

The suits were presented in a special ceremony by the H.E.D. Foundation, at 10:00 a.m. last Saturday, at the PoFolks restaurant located in Titusville, Fla.

The two recipients of the "cooling suits" are: Sean Marchant, 5, of Ft. Lauderdale and Jermaine Mitchell, 7, of St. Petersburg.

Both children suffer from Hypohydrotic Ectodermal Dysplasia (HED), a rare congenital disorder that causes children to be born without any sweat glands and therefore have no natural means of controlling their body temperatures.

The suits are valued at \$2,600 each.

Funds to purchase the suits were raised by PoFolks restaurants.

"Cooling suit" technology was first developed by NASA for use by astronauts on the moon.

Life Support Systems, Inc. (LSSI) of Mountainview, CA, began the commercialization of the suits using the NASA derived technology. LSSI manufactured the suits to be donated.

Similar suits are currently being used by firefighters, race car drivers and nuclear power plant workers.

Each suit contains a portable battery powered cooling system, complete with a temperature control dial to regulate body temperature.

The H.E.D. Foundation was founded to assist in the purchase of suits for all children who are born with HED, or related disorders.

## Senate argues about Space Station Freedom

Associated Press

"A ouija board or tarot cards" would be as accurate as arguments the General Accounting Office uses to question the funding needs of Space Station Freedom, says Utah Sen. Jake Garn.

In remarks made on the Senate floor, Garn blasted a GAO report critical of the space station for "setting aside facts and analysis in preference to theory and conjecture."

Garn, R-Utah, said the GAO "now has started crystal ball gazing."

"It's report isn't based on any accounting principles or conclusions of investigations," the long-time NASA supporter said.

"Frankly, a ouija board or tarot cards would be as accurate and wouldn't cost the American taxpayers the \$487 million (budget) GAO wants to stay in the palm-reading business."

Garn, the ranking Republican on the Senate Appropriations Subcommittee, is the only senator to have flown aboard a space shuttle mission.

He charged that the GAO report had its genesis with "a handful of my colleagues opposed to the space station."

Garn flew as a mission specialist aboard the April 1985 flight of the Space Shuttle *Discovery*, nine months before the *Challenger* explosion.

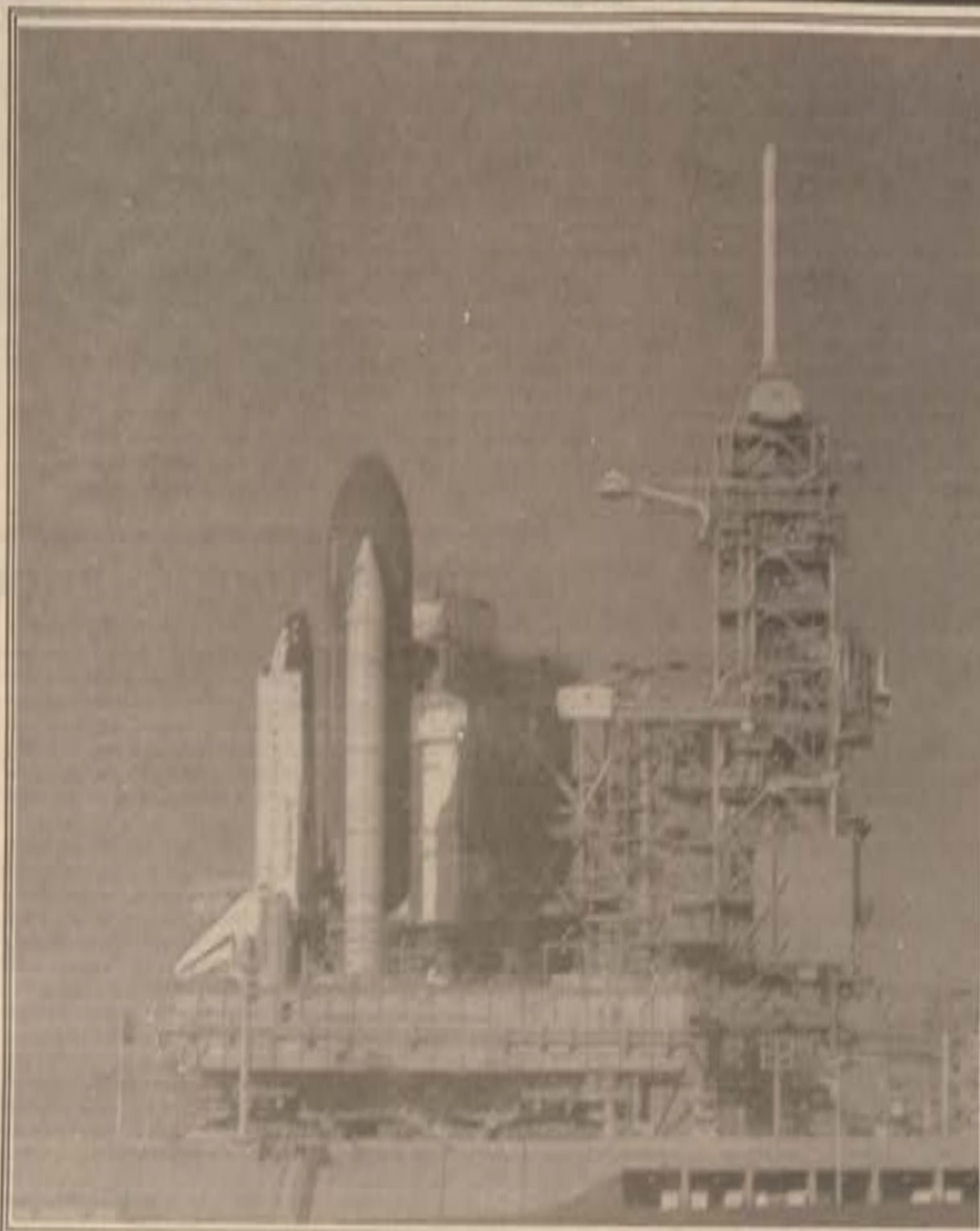
Through NASA's recovery from the disaster, he has proven a staunch supporter of the nation's space program.

## Krikalev comes home after 10 months

Associated Press

A Russian-German crew docked with the Mir space station on Thursday and will relieve a Russian cosmonaut who has been orbiting while his nation went through drastic political changes below.

Cmdr. Alexander Viktorenko and



The Space Shuttle *Atlantis* on launch Pad-39A (above) prepares for an early morning liftoff on Tuesday. The *Atlantis* high over the Florida coast (left) on its way into orbit carrying ATLAS-1as Phase I of NASA's Mission to Planet Earth. *Atlantis* is scheduled to return on Wednesday, April 1, at the Kennedy Space Center.



## Offshore weather buoy returned to service

By Greg Rezendes  
Space Technology Editor

A weather buoy which assists the Shuttle Weather Officer in forecasting for the launch of the space shuttle is being returned to station today and will be in service to support the launch of STS-45. The buoy, which is located approximately 110 nautical miles east northeast of Cape Canaveral, broke loose from its mooring on January 14.

The buoy was retrieved by a U.S. Coast Guard buoy tender on January 18. It was returned to the custody of the NOAA National Data Buoy Center who owns and maintains the buoy under a NASA contract. While in dry dock the buoy was electrically wired so that an optical range gauge can be added later. This is expected to happen in about six months. Also, the 10-meter diameter

steel hull was replaced with a new, smaller 6-meter diameter aluminum hull which requires less maintenance. The buoy is anchored in approximately 2700 feet of water.

A second buoy is located approximately 25 nautical miles offshore. It also will be equipped with an optical rain gauge later this year.

Both buoys transmit data to the Cape Canaveral Forecast Facility via a GOES weather satellite once each hour, and are equipped to transmit information every 30 minutes if desired. The data currently includes wind speed and direction, air temperature, surface sea water temperature, barometric pressure, wave height and wave period.

The two weather buoys are considered to be an important forecasting tool because offshore weather can directly affect onshore conditions.

Germany paid \$24 million to send its astronaut, Klaus-Dietrich Flade, into space. He will spend six days studying the influence of zero gravity on the human body before returning with Krikalev and Volkov. Russia badly needs money to keep the 6-year-old station, and its entire space program, in operation.

October.

## Atlantis blasted into space on Tuesday

By Ronald Hess  
Space Technology Reporter

On Tuesday, March 24, Space Shuttle *Atlantis* returned to space for mission STS-45.

This was *Atlantis*' 11th mission, and NASA's 46th shuttle launch.

At 8:16 a.m. EST *Atlantis*, with its crew of seven, lifted-off from PAD-39A, for an eight day mission.

Lift-off for STS-45 was scheduled for Monday, March 23, at 8:01 a.m. EST.

Unfortunately, NASA experienced difficulties early Monday morning when the shuttle was being fueled for lift-off.

NASA officials decided to delay the launch for 24 hours, when on-board sensors registered liquid hydrogen and oxygen leaks in the shuttle aft compartment.

The launch was rescheduled for Tuesday morning. At the T-9:00 minute mark, the countdown was delayed due to cloud cover over the Space Center emergency runway.

This runway is used in the event of an emergency situation when a shuttle cannot achieve orbit and is too far away from the emergency runway in Spain.

On past missions, the runway has been used as a substitute instead of landing at Edwards Air Force Base.

Landings at the Kennedy Space Center reduce the time required to load a shuttle and send it via piggy-back flights aboard a 747 shuttle transport from Edwards to Cape Canaveral.

The delay lasted approximately five minutes, then the countdown continued without a hitch. At a quarter past eight o'clock *Atlantis* blasted-off from its launch pad.

STS-45 is commanded by Charles Bolden, who is on his third shuttle mission. Brian Duffy will pilot *Atlantis* on his first shuttle flight.

Rounding out the rest of the crew are Mission Specialists Kathy Sullivan and David Leestma, both on their third space flights, Michael Foale, on his first mission, and Dirk Frimout, a Belgian Scientist, who is making his first shuttle flight.

*Atlantis* is carrying the Atmospheric Laboratory for Applications and Science-1 (ATLAS-1) in its payload bay.

ATLAS-1 is to be the first of up to 10 ATLAS missions to be undertaken throughout one solar cycle, which lasts 11 years. During that period, a cycle of solar flares, sunspots and other magnetic activity moves from intense activity to relative calm.

ATLAS missions are part of Phase I of NASA's Mission to

Planet Earth.

Throughout the ATLAS series, scientists will gather new information to gain a better understanding of how the atmosphere reacts to natural and human-induced atmosphere changes.

Co-habiting the cargo bay with ATLAS-1 is the Shuttle Solar Backscatter Ultraviolet Instrument (SSBUV), which provides highly calibrated measurements made by other NASA and NOAA satellites.

Also aboard the shuttle are 12 instruments from the United States, France, Germany, Belgium, Switzerland, the Netherlands and Japan.

These instruments will conduct 13 experiments studying the chemistry of the atmosphere, solar radiation, space plasma physics and ultraviolet astronomy.

In order to accomplish all of the experiments, ATLAS operations will be performed 24 hours a day.

The crew will be split into two teams, a red team and a blue team. Each team will work a 12-hour shift.

The Read Team consists of Leestma, Foale and Lichtenberg, while the Blue Team is Duffy, Sullivan and Frimout. Commander Bolden will set his own hours.

Secondary experiments to be performed aboard *Atlantis* include investigations into polymer membrane processing.

Polymer membranes are used as filters by many industries and in space, cloud logic investigations to quantify the variation in apparent cloud cover as a function of the angle at which clouds of various types are viewed and to develop meteorological observation models for various cloud formations and life sciences research.

This research involves studying cell growth during spaceflight, measuring changes in a number of vision parameters in the vision of humans exposed to microgravity, and continuing investigations of the effects of ionizing radiation upon the crew while within the orbiter cabin.

*Atlantis* astronauts will have an opportunity to converse with ham radio operators in an amateur radio experiment which will demonstrate the feasibility of amateur shortwave radio contacts between the space shuttle and ground sources.

STS-45 will end seven days and 22 hours from the launch time. *Atlantis* will return to Earth from its 160 nautical mile orbit on Wednesday, April 1, landing on the Kennedy Space Center runway.

## High schools all over the United States assist NASA

By Greg Rezendes  
Space Technology Editor

With the launch Space Shuttle Mission STS-45 on Tuesday, amateur radio operators around the world will have the best opportunity ever offered to communicate with astronauts during a space flight.

STS-45 is the fifth mission to carry the capability for transmissions between ground-based and shuttle-based amateur radio operators during flight.

The unique part of this mission is the 57 degrees of inclination of the flight plan.

During STS-45, Orbiter *Atlantis* will be flying over a much larger portion of the world than in previous missions when the Shuttle Amateur Radio Experiment (SAREX) was aboard.

Countries to be covered during this flight include the United States, Canada, Japan, Russia, European nations, South America, Asia, Australia and Africa. The list includes practically the whole world.

Adding to the distinctive international character of STS-45 are crew members who are able to communicate in several languages.

During the mission, SAREX will

be operated by mission specialist David Leestma and pilot Brian Duffy, both licensed operators. Leestma's call sign is N5WQC and Duffy's is N5WQW.

Other crew members who will be communicating alongside Leestma and Duffy are mission commander Charles Bolden; mission specialists C. Michael Foale and Kathy Sullivan, who is fluent in French and Norwegian; and payload specialist Byron Lichtenberg and Dirk Frimout, who speaks French as well as Dutch, and has the call sign ON1AFD.

NASA has approved the use of amateur radio experiments during shuttle flights for two reasons: to encourage public participation in the space program and to support educational opportunities offered by amateur radio.

SAREX has flown previously in various hardware configurations on space shuttle missions STS-9, STS-51F, STS-35 and STS-37.

As in the past, the crew will be communicating with students at various schools worldwide. SAREX crew-tended operating times will be dictated by the time of the launch.

As a secondary payload, SAREX will be operated by Leestma and Duffy whenever their work activities allow them time and when

appropriate geographically for transmission.

Most transmissions will be spontaneous open contacts or QSO's, as the amateur radio operators call them.

The SAREX will communicate with amateur stations in line-of-sight of the orbiter in a 2-meter voice transmission mode.

The primary frequencies intended for use during the mission are as follows: 145.55 MHz for the downlink from the *Atlantis* and 144.91, 144.95 and 144.97 MHz for the uplink.

All on-orbit SAREX operations are conducted in the 2-meter Amateur Satellite Service band utilizing FM with a nominal frequency deviation of 3 kHz.

An elaborate station setup is not required for making a two meter contact.

An effective radiated power of no more than 100 watts will give excellent results if there is not a lot of other ground interference.

A fixed vertical antenna mounted above obstructions will eliminate the need for elaborate orbit tracking and pointing. The vertical antenna is very desirable because it has a good radiation pattern at low elevations where the majority of the shuttle passes occur.



# Searchers may have found Earhart

SKYFEST



A P-51 will be at this year's SkyFest. The Mustang, or "Cadillac of the Sky," as called in Steven Spielberg's *Empire of the Sun* was one the most effective fighters of World War Two.

significance, but her disappearance captured the imagination of the world.

Gillespie has submitted what he believes is a piece of metal from the two-engine Lockheed 10-E Electra plane flown by Ms. Earhart to the National Transportation Safety Board for authentication. The NTSB provided a detailed analysis of the material, but did not state whether they were from Ms. Earhart's plane.

Gillespie also is relying heavily on a size 9 shoe heel and sole Ms. Earhart's size and a Cat's Paw brand popular at the time.

He told reporters today that the shoe and other artifacts "form circumstantial evidence in such an overwhelming way as to make them conclusive."

Gillespie's team found the fuselage remnants in a search of the jungle on the remote South Pacific atoll of Nikumaroro during an expedition last October.

Ms. Earhart and Noonan disappeared between New Guinea and Howland Island in the Central Pacific. They planned to use Howland as a way station en route to Honolulu and Oakland, Calif., thus completing the mission.

Her disappearance triggered a massive search and has led to speculation ever since. Among the theories was that she was spying on the Japanese for the United States and was captured and died in captivity.

Gillespie's organization theorized that through a navigational error, the pair missed their target of Howland Island and crash-landed on or near Nikumaroro, 350 miles away.

Tom Willi and Tom Gannon, retired military navigators, developed the theory after studying potential routes and plotting transmissions sent on Earhart's frequency. The Wilmington, Del.-based TIGHAR funded the \$750,000 search project. In an earlier search, the TIGHAR

team discovered an aluminum box that was used as a navigator's map case.

Gillespie said today he was looking for donations to finance additional searches of Nikumaroro.

Gillespie's findings were outlined in the current issue of *Life* magazine. The *New York Times*, in today's editions, quoted an NTSB official as saying the government could not confirm Gillespie's contention that he had found the site of the Earhart crash but on the other hand could not rule out the possibility.

"The best that the safety board can say from its examination is that certainly there is nothing to conclude that these pieces of metal could not have come from her airplane," the paper quoted one official as saying. "We can't rule it in, but we certainly could have ruled it out. We think in general that they have got a pretty strong case."

## ATA reports increase in passenger traffic in 92

ATA Press Release

WASHINGTON, February 17, 1992 — Airline passenger traffic increased 13.5 percent in February compared with the same month last year, the Air Transport Association reported today, but the news is not as good as it sounds.

"The rise in February traffic over last year, particularly international, is more the result of comparison with last year's dismal traffic due to the war than any positive trends we see affecting the industry today," cautioned ATA Assistant Vice President David Swirenga.

In domestic service, traffic increased 1.7 percent in February, while available seat miles were up 5.8 percent. The passenger load factor averaged 55.7 percent, down from 58.0 percent for February, 1991. Passenger enplanements decreased 0.1 percent to 28.7 million.

In international service, traffic in February was up 66.0 percent. Available seat miles increased 31.2 percent. The load factor averaged 62.8 percent, compared

with 49.6 percent for February 1991. 2.9 million passengers were enplaned in February 1992, up 44.2 percent from the same period last year. For the first two months of 1992, domestic traffic decreased 0.8 percent, and available seat miles were up 2.8 percent. The load factor decreased slightly to 54.8 percent.

Passenger enplanements were down 2.1 percent, with 57.8 million passengers. International traffic for the first two months of 1992 was up 35.0 percent. The available seat miles increased 18.4 percent, and the load factor averaged 64.0 percent, up from 56.1 percent last year. The number of passengers increased 23.2 percent to 6.0 million.



This graph shows revenues over last year and this year.

## First contractor assigned to MD-12

McDonnell Douglas Press Release

IRVINE, Calif. — McDonnell Douglas has awarded the first major aircraft subcontract for its planned MD-12 jetliner to a team headed by California-based Parker Bertea Aerospace, Irvine, Calif.

The contract will be for production of the primary flight control actuation systems of the aircraft, which McDonnell Douglas expects will enter service in 1997. Terms of the contract were not announced.

Actuators are the hydraulic-powered devices that operate aircraft surfaces which control the plane in flight, such as flaps, slats, ailerons, elevators and rudders.

Robert H. Rau, president of Parker Bertea, an operating sector of Parker Hannifin Corp., said that the contract would mean the potential for up to 250 jobs at its California facilities during peak production of the MD-12 and another 350 at other U.S. locations. Robert H. Hood, president of Douglas Aircraft Co., the transport aircraft division of

McDonnell Douglas that is developing the MD-12, said the contract award "demonstrates the high quality and cost competitive subcontractor base present in California. We are pleased that we can select a California company for such an important contribution to the MD-12."

The MD-12 is McDonnell Douglas' next generation long-range wide-body jetliner. It is currently in development at the company's Long Beach facility. Hood said he expects launch of the MD-12 program later this year. Robert R. Paul, vice president-supplier management for Douglas Aircraft, said, "If airline orders warrant, the total value of the actuator business for the MD-12 could exceed \$1 billion." Paul said the contract is contingent upon launch of the MD-12 program.

Two other companies are part of the team selected by McDonnell Douglas. They are Sundstrand Aerospace Mechanical Systems, Rockford, Ill., and Teijin Seiki, Gifu, Japan. Rau said, "Parker Bertea is extremely pleased to be

selected as a part of the important MD-12 program. We have been a longtime team member on virtually all McDonnell Douglas commercial and military aircraft, and our new partnership on this exciting program is a logical extension of our work on the DC-10, MD-11 and twin jets. We look forward to working with Douglas on the MD-12 well into the next century." Parker Bertea, which employs about 5,600 people, designs, manufactures and services fluid systems and components and related electronic controls for aerospace and other high technology markets. Parker Bertea will provide actuators for the fly-by-wire primary flight controls for the MD-12, including the upper and lower rudders, inboard ailerons, elevators, and spoilers. Sundstrand will provide actuators for secondary, high-lift systems, including leading edge slats and trailing edge flaps and the stabilizer trim system. Teijin Seiki will work on the primary flight controls with Parker Bertea, including the fly-by-wire outboard aileron and elevator actuators.

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## Two-stroke engines possible by mid-90s

By Jon Eichelberger  
Mechanical Technology Editor

Two-stroke engines have always been used for small applications, where size and weight were of great importance. They have been used in chain-saws, go-carts and motorcycle engines.

Early attempts to utilize these engines in cars ended up failing because of high fuel consumption and emission problems, but the engines have always been attractive because of their small size, high output and simplicity.

But two-strokes may be on the verge of a comeback with automobile manufacturers. Using the latest in computer controlled fuel management and ignition systems, and improving on the scavenging process, their prototype two-strokes have had improving success.

Manufacturers are basically going in two directions with the two-stroke technology.

The first is with what could be called the more conventional two-stroke engine. It is designed with a camshaft and valve setup with scavenging being done usually with a some sort of force induction (usually a supercharger).

Basically, the supercharger provides high pressure in the intake manifold, so that when the valves open after a combustion (exhaust first followed by the intake), the pressurized air forces the exhaust gases into the exhaust manifold.

Toyota's S-2 engine uses this type

of two-stroke; it is a 3 liter in-line six cylinder with 24 valves. It is fitted with a roots-type supercharger and is rated at 240 hp at 3600 rpm and produces 360 ft-lb of torque at 2800 rpm. The engine runs smoothly with consistent power because it produces power on every stroke of the engine.

The other type of two-stroke is more along the line of a go-cart or motorcycle engine with no camshaft or valves being used. Instead intake and exhaust flow through slots on the side of the cylinder wall that are uncovered at the bottom of the stroke. The exhaust port is uncovered first, followed by the intake.

The scavenging process for this is either force induction (external scavenging) or a process where the air intake goes through the crankshaft first, then on the down stroke of the piston the air is forced up into the combustion chamber and forces the exhaust gases out (crankshaft scavenging).

Australian Ralph Sarich worked with this type of two-stroke engine in the late 80s and received several patents for his Orbital Combustion Process (OCP). The Orbital Engine Co. now has a facility in Cass City, Michigan.

What Sarich did was applied existing technology to a two-stroke engine. Instead of adding fuel before the crankshaft, they direct injected fuel into the combustion chamber after the air intake port is closed off.

The injection method uses a blast of air through a small gasoline

reservoir to shoot the gas into the chamber. The air atomizes the gasoline and the fuel system controls the shape and timing of the charge.

This method allows the charge to be stratified, meaning the air-fuel mixture is layered. The richer layer being on top closest to the spark plug, and the leaner layer is near the bottom of the chamber. This allows a completed burn to be achieved before the exhaust port is uncovered.

Orbital has licensed out use of this technology to other manufacturers with plans of their own to produce two-stroke engines.

Other companies are experimenting with direct injection; Chrysler 1.1 liter 3 cylinder two-stroke engine uses an External Breathing Direct Injection (EBDI) which was seen in the Dodge Neon concept car. A 1.5 liter version of this engine is being developed with 140-150 hp in production form.

Problems with lubrication with crankshaft scavenging had to be overcome in the two-stroke engines because of the air pressure in that area.

Many have turned to a dry sump pump lubrication system where the oil is contained in a separate canister instead of an oil pan. The oil is directly injected under pressure in the crankshaft, cylinder wall and connecting rod bearings areas. The oil is then collected in the bottom of the engine and is drawn back into the canister for reuse.

General Motor's CDS2 engine

injects an oil mist into the airstream as it enters the crankshaft area. The oil mist lubricates as the airstream moves through and is burned off when it reaches combustion.

Oil consumption is the same as a convention engine, and as with the Orbital engine a two cartridge change is all that is needed every 5000 miles.

The biggest concern about the two-stroke engines is its emission. With the stratified charge the engines have achieved extremely lean mixtures at idle and at low power.

The Nitrous Oxide levels can be controlled by adding exhaust gas back into the combustion chamber. Manufacturers have achieved this by using shutter-type valves on the exhaust ports. But if the emission laws tighten, then the two-stroke may have a tough time passing. The current limit of 1.0 gpm of Nitrous Oxide is expected to go down to 0.7 gpm, but if it falls below that they expect problems.

Manufactures continue to develop two-stroke engines with plans for production. Chrysler plans to have its EBDI two-stroke out by '95 and General Motors just unveiled its new two-stroke, the COS2/V6.

It is a 3 liter V6 that develops 220 hp at 5600 rpm and 222 ft-lb of torque at 3600 rpm. As GM pointed out, they have an engine that runs like an V8, but with the economy of a four cylinder and room to spare in the engine compartment. Hopes are to have it in production by mid-90s.

## Japanese can not duplicate success of Harley-Davidson

Associated Press

The Harley-Davidson is an American motorcycle that appeals to national pride and boasts a mystique Japanese cycle manufacturers have been trying to nail down for more than a decade.

Today, the Harley is approaching its 90th birthday, with more than a 40 percent share of the U.S. heavy-weight motorcycle market that makes it the envy of the industry.

Japanese copies have similar visual cues, but they aren't Harleys, which have a look, a sound, a riding

position, a style.

Harley does not owe its popularity to being on the cutting edge of technology. While some Japanese motorcycle engines are pushing new frontiers in performance-vehicle powerplant technology as a whole, Harley-Davidson is considered by some technos as a dinosaur with its pushrod overhead valve V2, the evolution of a basic design they've had since the mid-1920s.

But Harley has done what no Japanese bikemaker is able to do, play up the current nostalgia craze by recreating the looks of its 1940s

and '50s machines. Many Americans associate the Harley-Davidson name with the '50s look, massive size, flashy chrome, that distinctive "potato, potato" idle and raucous, straight-through exhaust note.

In the wake of the import motorcycle onslaught that began in the 1960s, Harley devotees dug in with a stubborn anti-import attitude. The more dominant the Japanese became in the marketplace, the stronger the Harley fans' resolve to buy American. Harley-Davidson was founded in 1903 by William S.

Harley and three Davidson brothers, Arthur, Walter Sr. and William. The famous twin cylinder V-engine was introduced in the mid-1920s.

In 1991 Harley produced the industry's first application of electrostatic powder coating of parts and in 1992 began offering O-ring sealed drive chains. The Harley is so well-entrenched in American folklore, that owning one is like owning a personal piece of the American dream. And consorts of overseas buyers scour garages and shops nationwide for Harleys in any condition.

## Goodyear supplies tires for Boeing's 777

Press Release

ATLANTA— In this radial tire age, things are flying high for bias-ply aircraft tires.

Although a limited number of radial aircraft tires will be installed on Boeing's new 777 commercial transport, a subsidiary of The Goodyear Tire & Rubber Company said substantial weight savings will give bias-ply tires the dominant share of the 777's business as standard equipment.

The selection of Goodyear's 49-inch bias-ply tires was announced here today by Joseph M. Gingo, chairman and chief executive officer of Air Treads, Inc. of Atlanta, a wholly-owned unit of Goodyear.

Boeing engineers said the selection of a bias tire for the 777 permits the use of a lighter weight wheel design, increasing the total available weight-savings.

Computer-design technology is

used to optimize tire shape and assure durability while reducing tire weight, Gingo said.

"The future for radial aircraft tires is bright," said Gingo, "but radials have not yet surpassed what bias tires offer in terms of weight-savings, retreadability and operating costs."

A long-term agreement between the two companies calls for development of multiple ply ratings of the tire for use on the basic 777 and on two other models of the aircraft.

The new 32-ply version of the tire, which can save approximately 650 pounds per aircraft over the current production tire, also will become standard equipment on the Boeing 747-400 under a development contract awarded to Goodyear.

Goodyear has been the original equipment supplier on the 747-400 aircraft since 1988.

## Automotive news corner

-Ford unveiled its four valve version of their modular 4.6 liter V8 engine. The twin overhead cam engine is expected to get between 285 hp and 345 hp. The '93 Mark VIII will be the first to get the engine and most likely in an updated Mustang design. The Thunderbird and Cougar are possible candidates for the high performance modular engine.

-Mazda has set prices for some of its new models. The new RX-7 will begin at \$31,300 and the new MX-6 will have a base price of \$15,550. Mazda expects to sell 10,000 to 12,000 of the third generation RX-7. They also confirmed that the RX-7 was designed with the expectation of a convertible version.

-Nissan has released a new convertible to its model line. The 240SX convertible will be on sale nationwide by April starting at \$21,995. All will come with automatic transmission with only air

conditioning and disc player as options.

-Ford has announced that it will begin limited production of two-stroke engines in Europe early next year for the Fiesta. The engines are going to be built at the Dagenham plant in the United Kingdom.

-The top four radar detector makers have announced that they have developed laser detectors and should begin to come to market this summer. Over 200 laser-based speed guns have been delivered to local and state police so far. Makers said that with the growing use of laser guns that it was time for them to counter the new threat.

-BMW is said to be working on a small model based on the 3-series platform to fight against Volkswagen's new Golf VR6.

The car is going to have a specialized drivetrain that will produce about 175 hp. BMW is testing the hatchback in the Phoenix area, but there is no indication of when the car is going into production.



## Salutes 50 Years of Military Aviation "Pearl Harbour to the Persian Gulf"

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| EA-6   | AV-8B       |
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# Apartheid ends in South Africa after de Klerk wins referendum

Associated Press

JOHANNESBURG, South Africa - Time after time, President F.W. de Klerk has staked his political future on risky reforms, and he has never failed to come up a winner.

Some analysts believed de Klerk took a reckless gamble last month when he announced the apartheid referendum after his party was trounced in a by-election by the right-wing Conservative Party.

There was no requirement to hold the ballot, yet de Klerk promised to resign if he lost. Even a narrow victory would have demonstrated deep dissatisfaction among the nation's 5 million whites.

His sweeping victory Wednesday surpassed even his own party's predictions and strengthened his hand as he works toward his most important reform: negotiating a constitution that would give full political rights to the 30 million black majority.

"Today we have closed the book on apartheid," de Klerk told the

nation in his victory speech.

He can now worry far less about right-wing whites and concentrate on forging a power-sharing political system by 1994, when he is required to call an election.

The ever-confident de Klerk believes his National Party, the organization that codified apartheid, will be a political force even when blacks are allowed to vote.

Such talk is not as far-fetched as it once seemed.

Many blacks, particularly in urban areas, consider him the first white leader to show any concern for their plight.

When he came to power in August 1989, de Klerk was viewed as a National Party stalwart willing to consider gradual reforms, but committed to basic apartheid doctrine.

However, he has moved swiftly and dramatically, consistently outmaneuvering his rivals.

The referendum showed he has neutralized the right-wing as a political force. Black opposition groups, meanwhile, have been caught off-

balance repeatedly, unsure of how to adjust their policies and tactics to de Klerk's whirlwind changes.

De Klerk stunned South Africa and the world on Feb. 2, 1990, by legalizing black opposition groups and announcing he would free African National Congress leader Nelson Mandela from prison.

By June last year, he had scrapped all major apartheid laws, including ones that classified people by race and segregated schools and neighborhoods.

With each major reform there were warnings de Klerk had run too far ahead of a white population uncertain of where he was leading them.

In addition, black political violence, soaring crime and a 3-year-old recession seemed to be alienating many whites.

But the referendum results showed de Klerk has maintained virtually all the support he had in the 1989 general election, and the pro-apartheid Conservative Party was unable to make any significant gains.

# Iraq admits to having larger weapon stores

Associated Press

MANAMA, Bahrain - Thirty-five U.N. inspectors arrived in Baghdad Saturday to verify Iraq's new weapons disclosures and test the government's new willingness to destroy missile-production equipment.

Iraq on Friday avoided a showdown with the West by admitting having far larger weapons stockpiles than it previously disclosed and dropping demands that equipment used to manufacture missiles is converted to civilian use.

But officials have said they will not be satisfied until they can verify the information given by the Iraqis and assess what the Iraqis will permit to be destroyed. U.N. officials did not reveal the new data provided by Iraq.

"The proof of the pudding's in the eating," British team leader Derek Boothby told The Associated Press before the experts left Bahrain, the regional headquarters for the U.N. Special Commission in charge of Iraqi disarmament.

"The United Nations has been saying for a long time that there's more information that the Iraqis were not revealing," he said. "Now here's more information. But whether it's all of it, or whether it's just some of it, remains to be seen."

The team arrived at their Baghdad hotel Saturday afternoon, said Kevin St. Lewis, a U.N. staff member based in Baghdad as part of the inspectors' local back-up team.

St. Lewis, in a telephone interview with The Associated Press in Nicosia, Cyprus, said Boothby would hold a number of meetings with Iraqi officials in the afternoon. He would not comment further.

Earlier, Boothby said his team has instructions to receive Iraqi proposals for destruction of the

see Iraq, page B6

# East-West agree on open skies policy

Associated Press

VIENNA, Austria - An agreement allowing spy flights over three continents has been reached after a last-minute delay, diplomats said Friday.

The Open Skies treaty, which is to be initiated Saturday, is the first arms control agreement that will cover North America, Europe and Asian territories of the former Soviet Union, which were not included in other East-West arms agreements.

The treaty, which takes effect in 1993, marks a radical break with the past Soviet practice of jealously guarding its airspace.

In 1960, the Soviets shot down U2 pilot Gary Powers while he was on a reconnaissance flight. In 1983, the Soviets downed a Korean airliner with 269 people on board as it flew over the Soviet Far East.

In a powerful symbol of the new order, U.S. negotiator John Hawes held a joint news conference Friday with his Russian counterpart, Yevgeny Golovko.

"These negotiations were not, as usual, between Russia and other participants, but a cooperative effort to create an entirely new mechanism," Golovko said.

Hawes said the United States was pleased with the agreement, but he stressed that the Pentagon will continue to use satellites to gather data.

Surveillance from high-flying jets is more flexible, less costly and more accurate than from satellites.

The United States has the right to eight flights over Russia and Belarus

in the first year of operation of the treaty, and one flight shared with Canada over the Ukraine.

While the United States and the former Soviet Union have used satellites to spy on each other for years, that data has not always been accessible to other states.

Golovko said he expected some former Soviet states to sign the new treaty next week, when foreign ministers of the 48 states in the Conference on Security and Cooperation in Europe meet in Helsinki.

Negotiators are to initial the treaty in Vienna on Saturday.

The negotiators also said the new treaty could be expanded to allow states to verify other arms control accords or to monitor the environment.

The 200-page treaty originally was to have been signed Monday. But diplomats, briefing reporters on condition of anonymity, said it was delayed when Turkey rejected any suggestion that Cyprus be allowed to sign the pact.

Turkey does not recognize the right of the divided island to sign such treaties.

A compromise suggested by Germany will allow Cyprus, which has applied to join the CSCE, to sign on to the treaty later, the diplomats said.

Countries of NATO and the former Warsaw Pact began negotiating the treaty in 1989. The negotiations grew out of President Bush's reworking of a proposal first made more than 30 years ago by President Eisenhower.

# Embassy death toll rises to 28

Associated Press

BUENOS AIRES, Argentina - Authorities Friday investigated a report that Germany's Red Army Faction may have been involved in the Israeli Embassy bombing, which killed at least 28 people.

At the demolished embassy, crews continued to search the rubble for bodies.

Police say a car bomb was used, but there was still uncertainty over what terrorist group committed the Tuesday attack.

Callers claiming to be a spokesman for Islamic Jihad, a pro-Iranian Shiite Muslim faction, claimed and then denied responsibility for the bombing.

There was no immediate way to authenticate the claim or denial that were issued in Beirut, Lebanon.

# U.S. Navy says farewell to Subic Bay as last battle group leaves

Associated Press

SUBIC BAY NAVAL BASE, Philippines - Marking the end of an era, sailors aboard the aircraft carrier *Independence* today lined up on deck to spell out "Farewell Subic" as their vessel headed back to sea.

Their departure marked the last time a U.S. battle group will make a call at this base, which will close by the end of the year after 94 years of U.S. stewardship.

A few reporters, photographers and Filipino base workers watched as the 7,000 sailors and Marines aboard the *Independence* and its six support ships left. The group is based in Yokosuka, Japan.

Standing in formation on deck, the sailors spelled out with their

bodies "Farewell Subic," which was visible from the air.

Last September, the Philippine Senate rejected a new 10-year lease for the 62,000-acre base, 50 miles west of Manila.

President Corazon Aquino ordered Americans to leave Subic, the largest U.S. naval base in Asia, by the end of the year.

The government has drafted plans to convert Subic into a commercial port and ship repair facility once the Americans leave.

Anti-nuclear activists in Manila have protested the visit of the *Independence*, saying it "intimidates our country's true independence" and violates a ban on nuclear weapons.

The U.S. government refuses to confirm or deny whether any of its

ships carry nuclear weapons, but activists maintain that they do.

In the city of Olongapo, however, the visit of the group was warmly welcomed. Most people in the city neighboring the base rely directly or indirectly on the Navy for their livelihood.

After the Navy established the base here early in this century, Olongapo developed from a squalid barrio into a thriving city.

In recent years, up to 7,000 troops have been stationed permanently at Subic. But business was especially good when carrier groups and other warships called at the port for repairs, supplies and relaxation.

"We are hoping the next president will negotiate for a stay of the base," said Susan Nazario, 23, a shop clerk. "Otherwise, we will have no jobs."

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## Attention April graduates

The final meeting for April graduates will be held in the Student Center at 8:00 p.m. on Monday, April 6, 1992. Since there is no rehearsal for graduation, it is very important that you attend. Important graduation information will be reviewed. Voting for Faculty and Staff Appreciation Awards will be conducted. The graduation announcer will be present to rehearse names that are difficult to pronounce.

If you are unable to attend, please stop by the Student Activities office in the Student Center. Thank you.

## Study help sessions

- STUDY SKILLS
- NEED HELP?
- TIME MANAGEMENT-
- TEXT READING-
- LECTURE NOTE TAKING-
- TEST TAKING-

Sessions available by reservation. Contact the Counseling Center, located in the Student Center: 226-6035. Deadline for reservations is 3/27, 1992.

## Mandatory FA meeting for seniors

If you were awarded a Perkins/NDSL or Repayable Educational Assistance Loan (REAL), and a Stafford/GSL as part of your financial aid package while a student at Embry-Riddle Aeronautical University, you are required to complete an Exit Interview before leaving the University.

If you have not yet scheduled an appointment for your Exit Interview with the University Collections Office, please do so immediately.

Please call 226-6040 to make your appointment. Be advised that there will be a hold placed on release of your cap and gown for graduation until you have fulfilled your Exit Interview requirements.

## New degree program

The University is now offering a new bachelor of science degree in Aerospace Studies. There will be an informational meeting about the new degree program on April 16, at 1:30 p.m. in room A-109.

Students interested in finding out about the new program, how to transfer into it from another program, which minors are available and what courses they require, and how to register for next fall semester should attend the meeting.

Program chairman, advisors and liaisons with the other minors will be present to explain the program and answer questions.

## Avion looking for members

The Avion newspaper is always looking for new writers, copy editors, photographers, production and layout people. If there's ever been anything in this paper that you have wanted to change, come on up a make a difference.

No experience is necessary, and we will give you as much help and information as you need.

## Attention student leaders

The Student Leadership Development Program recruits for fall semester.

Applications due: Wednesday, April 8, 1992

The Department of Student Activities is now accepting applications for the Fall Student Leadership Development Program (SLDP). The SLDP is a semester-long program that introduces students to the many facets of leadership through interactive seminars and training sessions. The program is designed to adapt to the current needs of the student participants while also exposing them to standard topics such as leadership ethics, leader styles and multiculturalism.

The goal of the program is to teach effective leadership skills to future student leaders, as well as improving current student leaders' performance and effectiveness while working on a degree at Embry-Riddle. SLDP students are encouraged to interact with the guest speakers drawn from many facets of the University as well as the community. The interaction between faculty, students and community leaders has a networking effect again enhancing the effectiveness of Embry-Riddle students as they work within the University milieu.

Up to twenty-five students will be selected for the Fall Semester program. Please note when registering for classes that the Leadership Program meets on Tuesdays and Thursdays from 4-5:30 p.m. beginning in September and continuing through December. We will begin the semester with a two-day leadership retreat! Minimum requirements for selection include:

- Must have a minimum 12 credit hours completed (at least a second semester freshman).
- Cumulative GPA of 2.0
- Will be attending Embry-Riddle at least one semester after completing the program.

Students making application and minimum requirements will be contacted for interviews scheduled for Monday - Wednesday, April 13-15.

Applications may be picked up from the Student Activities Office. If you have any questions, stop by the Student Activities Office and introduce yourself to Paul Bell, Assistant Director of Student Activities.

The Department of Student Activities strives to meet the needs of Embry-Riddle students. The Student Leadership Development Program is just one of the many opportunities offered to you, the Embry-Riddle students, to get involved.

## Home for Summer Break?

Visit your high school when you go home for the summer. One of the advantages of our semester ending early, is that most high schools are still in session. The admissions office has a program that will help you visit your high school on behalf of the University. This is your chance to share the knowledge and enthusiasm that comes with being an Embry-Riddle student.

By volunteering only a few hours of your time, you can make a tremendous difference in a young person's future. All you need to do is take the time to share your knowledge of the University with students from your high school that share an interest in aviation.

The Admissions Department will work to set-up a high school visit in a date that is convenient for you. Our staff will also give you a short training session that will allow you to represent the University thoroughly and professionally.

If you are interested in participating in this program, please call extension 6020 for further details.

## Pre-Law Association meeting

The Embry-Riddle Pre-Law Association of Aviation Students will hold its next meeting on Monday, March 30, 1992 at 7:00 p.m. in room A-115.

All members and interested students should make plans to attend this meeting. Topics to be discussed include the election of new officers and questions and information concerning law schools.

Any members, students or staff that have questions concerning the meeting or the Pre-Law Association should contact club president Jon Jackson at 756-5678.

## SkyFest tickets on sale

Tickets are now sale for this year's SkyFest airshow and static displays. Tickets can be purchased to this great airshow at the cashiers office in Spruance Hall.

Tickets are \$7 for students, faculty and staff purchased in advance (limit two per student). Tickets for all other attendees are \$9 purchased in advance. Tickets can be purchased at the gate for \$12.

This year's SkyFest Daytona will feature the classic static displays, such as F-15s, -16s and A-10s. Classic air demonstrations will also be performed by Gene Soucy, Sean Tucker and Jan Collmer. New displays include the F-117 Stealth Fighter and Tora, Tora, Tora, a re-creation of Pearl Harbor. The B-1 Bomber will also be making a fly-by on Sunday only.

Make sure you don't miss this great airshow by purchasing your tickets now.

## Miss Teen All American Pageant

Miss Teen All American Pageant seeks Florida Representatives.

A limited number of Delegates-at-Large will be accepted for the Fourteenth Annual Miss Teen All American Pageant. This is the premiere National Pageant for teenagers in America! The 1992 Miss Teen All American Pageant will be staged Thursday, August 6 through Sunday, August 9, 1992 at the magnificent Miami Airport Hilton & Marina in sunny Miami, Florida.

No performing talent is required. All judging at the Pageant is on the basis of poise, personal interview and beauty of face and figure. To qualify as a Delegate-at-Large, a young woman must be age 13 through 19 as of July 1, 1992; never married and a U.S. resident. To apply, send a recent photo along with your name, address, telephone number and date of birth by fax or mail to:

National Headquarters - Dept. 3A  
Miss Teen All American Pageant  
603 Schrader Avenue  
Wheeling, WV 26003-9619  
Phone: 1-304-242-4900 --- Fax: 1-304-242-8341

Miss Teen All American 1992 will receive a fabulous Prize Package that includes a Personal Appearance Contract, cash, jewelry, luggage, a fur coat and more! The judging panel in Florida will include representatives from the TV/Film Industry and Modeling Agency Personnel.

Many of our winners have signed with major agencies and enjoy careers as TV & film stars, international models and spokespersons.

Application deadline is April 10, 1992.

## Mock Trial cancelled

The Mock Trial planned by the Pre-Law Association of Aviation Students against the University of Florida on March 28 at 12:00 has been cancelled due to lack of participation by the University of Florida. Anyone with any questions should contact Jon Jackson at 756-5678.

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1985 Ninja 600R with helmet \$1600 OBO. 760-5926.

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87 Mercedes \$200  
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1979 Kawasaki KZ 1000, only 14000 miles. Garage, excellent condition, \$1300. Call 760-2543 (Marco).

Highest cash price for your used car, truck, boat or motorcycle. Any year, model, make or condition. Out of state title OK. Call Dean at 248-2473.

1986 Camaro Z28. Low miles, V8, auto, T-tops, power windows, locks and seats, AM/FM digital stereo cassette, new tires, factory mags, mint condition. \$4000 OBO. 239-0913.

1986 Firebird. Auto, V6, T-tops, power windows and locks, nice stereo, 52,000 miles, \$2700 OBO. 248-2473 - must sell.

1987 Honda CRX, good miles, excellent condition. Must sell. Best reasonable offer. Call 239-0913.

1985 XV700 Yamaha Virago. Clean, good shape, new battery, needs front tire. Call John 254-2918 or box 8125.

1988 Ford Ranger XL T loaded, low miles, new tires, great shape in and out. \$3750/OBO. 239-0913

Roomates & Rental

HILLPI Desperately seeking a roommate! Room available immediately in 3 bed, 2 bath apt! Nice area! ONLY \$211.00 a month, 1/3 elect., 1/3 cable! PLEASE - give us a call: 274-2380 after 3:00 p.m.

Roommates needed for summer, fall. 2 bedrooms available in 4 bedroom, 1.5 bath house in South Daytona. \$240/mo. All utilities included. Call Kim at 756-8560.

Roommate needed to rent a room in a 4 bedroom house in Port Orange. Only 5 miles from campus. Move in May 1. Rent only \$162.50/month + 1/4 utilities call 322-0082. Ask for Mike.

Roommate wanted to share private 3 bedroom, 2 bath house, 2.5 miles from school, washer/dryer, central AC, garage. \$200/month plus 1/4 utilities. Call Rich or Mike at 255-5029.

Female roommate needed. Rent 237.50, dep \$75 + phone and electric. Just 2 miles from school. Call Beth 756-7681.

Female roommate to share house with 3 others. Master bedroom with private bath \$225. Newly remodeled, new appliances, new carpet, 1/4 utilities, close to school on mainland. 2 car garage, huge and beautiful, won't last. Call 248-1184.

Roommates needed in 4 bed/2 bath newly remodeled big house. 2 car garage, new appliances. Master bedroom with bath \$220—large bedroom \$200. Cable ready. Call Lou 248-1184.

Room for Rent. \$150/month plus 1/4 utilities. 255-2782.

Roommate Needed! Clean, quiet, 2 bedroom apartment 2 miles from campus. \$200 per month plus 1/2 utilities. Call 904-248-2194.

Room for rent Summer A and B. \$232.50 per month covers cable, water, pool and rent. You pay phone and half electricity. No deposits and no lease. 767-6275.

Roommate needed in 3 bedroom, 2 bath house in Pelican Bay. \$375 per month includes utilities. 756-1916.

Misc. for sale

ALIENS For Sale! Due to limited space, \$180 worth of Alien comic books must be sold. Willing to negotiate price. If interested, call Bill at 756-1541 and leave a message, or write to Box 6273.

Sofa bed \$100 and matching love seat \$150. Call Michele at 756-8843.

David Clark H10-20. Like new, still in box. \$190. Call 760-1520.

Heavy construction weight bench, with leg machine, preacher bench, sit-up bench bar and partial set of steel weights. Paid \$350, sell for \$200. Call Tim at 322-0132 after 6:00 or contact box 8350.

Waterbed - king size, bookcase, headboard, wild drawers. Need to sell - 677-1637.

For Sale: 50 gal. fish tank, \$50. Mach 1 slalom wetsuit, 65 in. single high wrap rear tire. With bag, like new. \$200. Call 760-4805.

Ladies 10 speed Schwinn, excellent condition. \$75. 226-6407.

Software (including manuals and original disks) - Wing Commander II with speech icons, \$40. Earl Weaver Baseball 1.5, \$15. Quicken 3.0, \$10. Andy - 226-6047 days.

Super single waterbed \$50. Heavy duty car ramps, \$10. Call Rob - 257-2472.

Late model Mustang 5.0, parts, high performance engine, Drivetrain and body including interior parts. 3 row HP rad, grant 6T steering wheel, etc. Call John - 756-4320.

One way airline ticket from Orlando Fla to Washington National. Scott Gesela - 255-4767.

Symphonic VCR remote control, cable compatible, 10 key random access, only \$120. Also FX 7500 graphing scientific calculator - an advanced programmable computer, just \$50. Call or stop by John, Dorn I, room #364. 252-9401.

Furniture for sale. King-size, full wave waterbed, excellent condition, with heater and massage unit - \$250. Small desk with shelves and file drawer, perfect for dorm or small room, \$50. Modular dresser/shelf set, unfinished, sturdy, ready to paint, \$40. JP Walsh at flight department, extension 6800 or 761-7337.

The Duchess is back!! Multi-time \$90 per hour, includes fuel, instruction, etc. No hidden costs! 5 hour block deposit required. Aircraft based at DAB, low time, IFR equipped Beechcraft Duchess. High time CFI, CFI, MIB, Instructor with 600+ hours in Duchess aircraft. Call John 253-9607.

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Looking for a ride at end of Spring to NJ. Will help pay expenses. Contact Matt, Box 6390, or Donn II Rm.164.

Flight instruction. New Smyrna. Free ground instruction for written test, private and commercial students. Ray 9:00-5:00, 322-2310, 6:00-11:00, 274-2070, or box 5440.

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- Non-commercial classified advertising and personals are free to the student body, faculty and staff of Embry-Riddle with 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, at 226-6051.
- 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.
- Only paid 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)226-6049.

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1 pair SoftComm headset. Brand new in box. Used only a few times. \$125 OBO. Call John 756-4320.

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Ride wanted to Maine or New Hampshire at end of semester. Will share 1/2 gas and driving. Call Brian at 760-6872 or box 5985.

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Personals

The key to happiness is truth  
The key to truth is love  
These are...  
...the keys of the Kingdom.

CORICA  
The waiting is easy, knowing what rewards lie ahead...  
"HOPE"

KAREN SAYLER  
In reference to your student forum reply on the new gymnasium, There is No Old Gymnasium!

J  
She's on a bridge of silence. You gotta make a sound. Give a little love, she'll come around.

R  
Q & ERIC  
Yeah, yeah, yeah, yeah.  
DANIELLE

MIKE L  
Is that peanut butter I see?  
DOO DOO FAN

Let's beat them up and feed them chocolate.

TONY NOBLE  
So when's my drink??  
DL

HO  
Where's my poem??  
TIGGERS FRIEND

TO ALL FENCERS  
Pain is temporary! Join the ERAU school of hard knocks.  
PC

REMEMBER  
It's always darkest just before it gets pitch black.  
PC

TO THE ERAU POPULATION  
We, the Lynch mob, are normally a non-violent group except when the student body integrity or school property is compromised. Nothing goes down without us knowing. We know all the thieves on campus, so come clean or just stop. The choice is yours.  
THE LYNCH MOB

SCOOBEAR  
Nice game to you and all the guys! Thanks for telling Dad why you pitched a no-hitter!  
SCREWBEAR

SIC  
I'm glad I did what I did. It's nice to have someone to stand in front of the temples of Greece with, who understands.  
COMFORTABLY NUMB

D. L.  
Call me for the drink.  
T. N.

SECRET ADMIRER  
I would like to know whom I am to thank for the roses on my car.

JIMMY  
You've been doing a little too many walks with that dog behind the shackman's house!  
THU WITNESS

ANDY  
How is the eleven-year-old?

THUMPER  
Welcome Back, Missed You  
LOVE!  
GOOOH!

If you can't send a woman to do a man's job, then who's going to do it RIGHT?

HOBBES  
Wake up you slacker!  
Hub??  
Did I tell you I get deaf when I get tired?  
Hub?

TIGGER  
TEAM  
The coach came back to town. Let's hope we showed him that the team is still alive.

WIS  
Scratch your B---, play golf, get laid, scratch your ---, play golf, get laid, scratch ---  
Life's great! Lov'ya.  
SEAN

Beam me up Scotty! I don't have a life down here.  
P.S. Mom, please send me some more Mad Magazines and Fruit Roll-ups.

NATHAN  
Glad your back in school and that your back is better. We should party sometime this summer.  
MALISSA

COMFORTABLY NUMB  
You're not the only one who's glad! How many more things can go right all at once?  
Can't wait for ATL next weekend!  
SIC  
PS- My turn next - just wait!

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Iraq (continued from B4)

missile production and repair facilities. He said his experts may do some destruction work during the current trip, which ends March 29.

Iraq has refused for months to fully cooperate with terms of the U.N. cease-fire ending the Persian Gulf War, under which it must destroy its ballistic missiles and chemical, biological and nuclear weapons potential mandated under the year-old Gulf War truce.

President Bush and British Prime Minister John Major have warned that surgical military strikes against undeclared weapons installations were possible if Iraq did not comply.

Shortly before Friday's disclosure by Iraq, Gen. Colin Powell, chairman of the U.S. Joint Chiefs of Staff, said in Washington that the United States will do all it can to force Iraq to destroy its remaining weapons of mass destruction.

On Friday, Iraq told the United Nations that it had destroyed long-range Scud missiles and their modified al-Hussein versions, missile launchers, chemical bombs including nerve gas warheads, and ammunition and spare parts, according to Boothby.

He said Iraq reported that it had destroyed the weapons last June.

The quantities they specified, which the U.N. agreed with the Iraqis not to announce until verified, were "quite significant," he added.

U.N. ballistics experts have destroyed 62 Scud missiles and related versions, but U.N. experts and senior U.S. officials had repeatedly said they believed the Iraqis were hiding hundreds more.



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Calvin and Hobbes

by Bill Waterson

PEOPLE DON'T REALIZE WHAT A BURDEN IT IS BEING A GENIUS LIKE ME.

IT'S NOT EASY HAVING A MIND THAT OPERATES ON A HIGHER PLANE THAN EVERYONE ELSE'S. PEOPLE JUST REFUSE TO SEE THAT I'M THE CRUX OF ALL HISTORY, A BOY OF DESTINY.

I SUPPOSE ONE COULD RECOGNIZE A BOY OF DESTINY BY HIS PLANET AND STAR UNDERPANTS.

ANOTHER TRENCHANT COMMENT BY A JEALOUS LESSEER INTELLECT.

MOM, FROM NOW ON, I DON'T WANT TO BE INTRODUCED TO PEOPLE AS PLAIN "CALVIN."

I WANT TO BE INTRODUCED AS "CALVIN, BOY OF DESTINY."

BOY OF DESTINY?

BUT YOU HAVE TO SAY IT RIGHT, PRONOUNCE A LITTLE AFTER "BOY," AND SAY "DESTINY" A BIT SLOWER AND DEEPER FOR EMPHASIS. SAY IT, "BOY... OF DESTINY," LIKE THAT!

I THINK I'M GOING TO STOP INTRODUCING YOU ALTOGETHER.

I WISH YOU HAD SOME CYMBALS TO CRASH AFTER YOU SAID IT.

HERE IS YOUR PAPER, SUSIE. VERY GOOD. HERE IS YOURS, CALVIN.

BY THE WAY, YOU CAN STOP SIGNING YOUR WORK "CALVIN, BOY OF DESTINY," AND I THINK YOUR TIME WOULD BE BETTER SPENT STUDYING THAN DRAWING "OFFICIAL NOTARY SEALS" AT THE BOTTOM.

BOY OF DESTINY?

THAT'S RIGHT, BOY OF DESTINY!

EVERYONE I KNOW THINKS YOUR DESTINY IS A PRIVATE CAGE IN THE PRIMATE HOUSE.

YOUR DESTINY IS TO HAVE A SMILE THAT'S ALL GUMS.

SMASH  
PING PING  
KRITCH KRITCH

HE'S A TRICKY DEVIL, BUT I'LL GET HIM SOONER OR LATER!

APPARENTLY I RATE JUST BELOW BUGS WITH HER!

AND SHE COMPLAINS YOU DON'T HELP OUT AROUND THE HOUSE.

Wimp!

OH... OH YEAH??

WHAT REALLY BUGS ME IS KNOWING I'LL PROBABLY COME UP WITH A MUCH SHARPER RETORT SOMETIME TONIGHT.

CALVIN, CAN YOU TELL US WHAT LEWIS AND CLARK DID?

NO, BUT I CAN RECITE THE SECRET SUPERHERO ORIGIN OF EACH MEMBER OF CAPTAIN NAVY'S THERMO NUCLEAR LEAGUE OF LIBERTY.

SEE ME AFTER CLASS, CALVIN.

I'M NOT DUMB. I JUST HAVE A COMMAND OF THOROUGHLY USELESS INFORMATION.

Far Side

by Gary Larson

"Well, I'm not sure if we can afford stomach insurance — right now we're trying to put the kids through the small intestine."

"Well, I'll be darned. Says here 70 percent of all accidents happen in the hole."

See, am I the only one here who's laughing on the outside and the inside?

"Lord, we thank thee."

Basic lives

God as a kid tries to make a chicken in his room.

Mister Boffo

by Joe Martin

THE FURTHER ADVENTURES OF SHERLOCK HOLMES' IDIOT SON EARL

I FOUND THE SECRET COMPARTMENT BEHIND THE MIRROR WHERE YOU KEEP YOUR TOILETRIES!

MY FRIENDS CALL ME "SIXTY."

ONE OF THE BIGGEST MISTAKES YOU CAN MAKE ON A TAX AUDIT

INTERNAL REVENUE SERVICE

I WAS JUST TRYING TO MAKE HIM FLINCH!

Mother Goose and Grim

by Mike Peters

GRIMM, TELL ME YOU'RE NOT EATING OUT OF THE KITTYS BOWL AGAIN...

OKAY, I'M NOT.

GOOD BOY.

IS SHE BEAUTIFUL OR WHAT?

HAVE FUN ON YOUR DATE, KIDS. BUT REMEMBER, DON'T LET ME SEE THAT CAR COME BACK IN ONE PIECE!

CRASH-TEST DUMMIES

OH... IS IT TOO WARM?





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