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SPACE TECHNOLOGY

Ariane launches its 50th rocket

By Roland Houle Distrimus Mariague

The 50th launch of an Ariane launch vehicle is scheduled for this evening between 7:12 p.m. and 7:57 p.m. RST.

The milestone mission will place the Telecom 2B and INMARSAT 2-F4 satellites into geostationary transfer orbit.

This launch, designated Flight 50, will be the 22nd launch of the Ariane 4 launch vehicle.

The vehicle will use the 44AL version with four liquid strap-on boosters, constituting the most powerful launch vehicle in the Ariane family.

The launch will be from the Ariane launch complex (ELA 2) in Kourou, French Guiana.

In order to lift both satellites into space, the Ariane dual launch system (SPELDA) will be used.

The system connects to the fairing of the Ariane and holds a second satellite. The SPELDA is then connected to the vehicle equipment bay and the remainder of the vehicle.

The Telecom 2B spacecraft is being launched for France Telecom and the French Ministry of

Its mission is to relay telephone and television signals over France, and between France and its overseas departments.

It will serve a governmental mission as well as business services. Telecom 28 is the second satellite of the second generation of the Telecom series.

The INMARSAT 2-F4 satellite is owned by Londres of Great

The British Aerospace built spacecraft will relay mobile and maritime satellite telecommunications.

This satellite is the fourth of the second generation family of satellites built by an international consortium headed by British Аегоярисе.

This Ariane vehicle is the first in a batch of 50 vehicles that were contracted to be built in early 1989. The 50 vehicle order represents the largest single launch production contract of the western world.

In order to assure a competitive launch schedule, the vehicles are planned to arrive over the next eight years, permitting significant benefits in terms of quality and productivity.

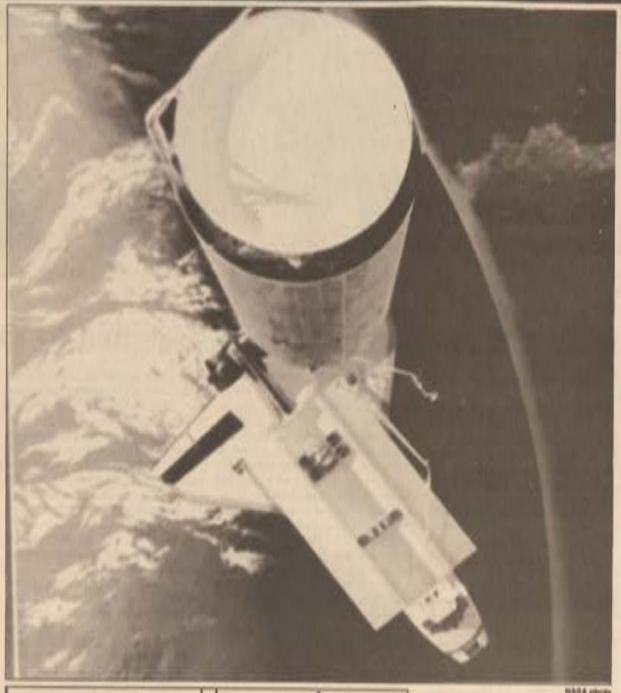
Out of 97 launch services contracted since 1981 by Arianespace, only 31 satellites remain to be launched.

Over one half of the 78 commercial satellites already launched by Arianespace have been for countries or organizations



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HASA photo

Endeavour (above) will come from behind the satellite and then perform the four step process.

First, (far upper left) astronauts will retrieve the satellite.

Second, (Inner upper left) astronauts will attach the satellite to the Remote Manipulator Arm.

Third, (far lower left) the Remote Manipulator Arm will pull the INTELSAT into the bay where astronauts will attach the satellite to a rocket motor.

Finally, (inner lower left) the INTELSAT will be boosted into its new orbit.

Endeavour prepares to rescue INTELSAT VI

By Ronald Hess Space Technology Reporter

NASA's newest space shuttle, Endeavour, will be flying its maiden voyage on STS-49.

Endeavour's main engines were fired for just 22 seconds during the Flight Readiness Firing.

Shuttle managers initially said everything appeared to go well. But after a few days of analysis, engineers found a pressure buildup in a component on one engine that warms oxygen before it is injected into the combustion chamber.

Engineers have seen the problem before following engine shutoff in tests at sea level.

Another engine had a different problem. Test data indicated the ball bearings in a high-pressure oxidizer turbopump, which pressurizes the oxygen, were beginning to wear.

Neither problem would have jeopardized safety and the engines likely would have operated fine if Endeavour had lifted off said NASA.

NASA also said that all three main engines of Endeavour would have to be replaced because it is much easier to replace them as a set rather than just one or two.

Technicians will install engines that had been set aside for the Shuttle Atlantis' next flight in July.

The three new engines that are being placed in Endeavour are brand new and have undergone only ground testing.

The changing of the engines should only take one to two days of work and could be performed with other launch preparations and thus not delay Endeavour's maiden voyage next month.

Goals for the new shuttle include a difficult rendezvous with n stranded satellite and the first inorbit attachment of a new rocket motor. The projected launch date is

Endeavour will be launched into its initial orbit, from Pad 39B. This will be the first shuttle launch performed from Pad B since June

The launch pad underwent some \$3.5 million in modifications and repairs over the past year.

The main goal of STS-49 will be to recover a satellite belonging to International Satellite Organization.

Endeavour will use a radar gun system to pinpoint the speed of the the crew will take over.

The INTELSAT VI, built by Hughes Aircraft Co., was launched from Cape Canaveral Air Force Station aboard a Titan launch vehicle.

The Titan's second stage failed to separate from the satellite's perigee kick motor, stranding it in a useless

The motor is used to propel the satellite into a transfer orbit. Eventually the INTELSAT VI would reach a geostationary orbit. INTELSAT VI satellites carry up

to 120,000 simultaneous telephone calls. They also provide voice. video and data services to Earth stations around the world,

Such satellites will help provide coverage of the Summer Olympic games from Barcelona, Spain.

In order to accomplish the rendezvous with the satellite, INTELSAT ground crews must relay commands to slow the satellite's rotation rate.

Then, Endeavour must perform a series of complicated maneuvers to position the craft 50 feet within range of the Remote Manipulator System (RMS) arm,

Once the shuttle is within range, Mission Specialist Pierre Thuot will perform a space walk to stop the satellite's rotation and bring the satellite into the orbiter's payload When the satellite is in the bay,

Mission Specialist Richard Hieb will help to attach the satellite to a new kick motor, built by United Technologies Corp. The projected time required to

complete the mission objective is five hours. Once the satellite is a safe distance from Endeavour, the

rotation of INTELSAT VI will be increased. Eventually, the kick motor with be fired and the satellite will be

injected into a supersynchronous transfer orbit. The satellite is expected to be

fully operational in geostationary orbit over the Atlantic Ocean region by mid-1992.

Other experiments to be performed on STS-49 include space walks demonstrating the feasibility of assembling Space Station Freedom via EVA methods, and the growth of Commercial Protein Crystals.

Endeavour will return to Earth, seven days later, on May 14, at satellite up to 80 feet, where then Edwards Air Force Base, California.

Practical joker in Kansas plays a good one on scientists

Associated Press

EMPORIA, Kan. - A piece of burned metal scientists thought was part of a Russian booster rocket actually was part of a practical joke hoax. by a turnpike worker, officials said

The chunk of metal, which measured about 1 foot by 1 foot, was found Tuesday near a maintenance building along Interstate 35, near the Cassoday exit.

Scientists who examined the metal scrap thought it was from a traveled through the Earth's

atmosphere before alamming into or something," Ms. Callahan said. the Kansas prairie.

public relations for the Kansas Tumpike Authority, said Friday that a turnpike worker admitted to the

he did it," she said. "It was a raised some suspicions in the mind practical joke among KTA employees." Only one employee was

apparently involved in the boax, Ms. Callahan said.

The employee may face some kind of disciplinary action, she said. "We're going to handle it booster rocket, and said it probably Internally. We're deciding now whether there will be a suspension

'We don't know who notified the

But Lisa Callahan, director of news media. But had the news media not known, it wouldn't have been any big deal. A small fire also occurred near

the site where the metal scrap was "He came forward and admitted found, which was the only thing that of Max Ary, executive director of the Kansas Cosmosphere and Space Center in Hutchinson.

Before the KTA announced the hoax late Friday, Ary had said the fire was the most suspicious part of the find.

The fact that it was still hot enough to start the grass on fire is the only thing that has us scratching

our heads," he said, "If someone played a boax, they also did an arson act."

Ms. Callahan did not immediately know if the employee also started a

After learning it was a hoax, Ary said in a statement, "It's an extremely unfortunate incident to have occurred. It makes it very difficult when legitimate claims do arise" to have spent time Investigating hoaxes.

Two red Cyrillic letters on the metal scrap also initially led scientists to believe the scrap was an authentic piece of Russian space

"If someone was going to fake that," they went to a lot of trouble, Ary said, "The person who perpetrated the boax did a fairly good job. "The elements that we would

expect to find were there," Scientists would have learned of

the hoax Monday when the metallurgic analysis of the scrap was completed, he said. The North American Air Defense

command (NORAD) confirmed a Russian space craft had been launched Tuesday, Ary said. A piece of the booster "might have been thrown this far north because of the breaking up over Central and South America," he said.

Hubble telescope discovers black hole in M32 galaxy

By Greg Rezendes Space Tuchnology Editor

Astronomers reported that they have found new evidence that a black hole, weighing 3 million times the mass of the Sun, exists at the center of the nearby elliptical galaxy M3, based on images obtained with NASA's Hubble Space Telescope

The images show that the stars in become extremely concentrated towards the nucleus of

the galaxy. This central structure resembles the gravitational "signature" of a massive black hole. The presence of a black hole in an ordinary galaxy like M32 may mean that inactive black holes are common to the center of galaxies.

The new HST images show that M32 is an interesting "laboratory" for testing theories of the formation of massive black holes.

This result is based on image analysis conducted by Dr. Tod R. Lauer of the National Optical Astronomy Observatories, Tucson, Ariz., Santa Cruz and other members of the HST Wide Field/Planetary Camera (WFPC) Imaging Team.

M32 is quite small and compact as elliptical galaxies go, containing about 400 million stars within a diameter of only 1,000 light-years.

At a distance of 2.3 million lightyears, M32 (the 32nd object in a catalog of non-stellar objects compiled by French astronomer Charles Messier in 1774) is one of

the closest neighbors to the Milky University of Michigan, Ann Arbor. Way galaxy. M32 is a satellite of the great

spiral galaxy in Andromeda M31, which dominates the small group of galaxies of which the Milky Way is a member.

M31 can be seen with the naked eye as a spindle-shaped "cloud" the width of the full moon, and its small companion M32 can be seen with a small telescope.

M32 has been among the best candidates for a galaxy with a massive central black hole. This was first proposed in 1987 by Dr. John L. Tonry of the Massachusetts Institute of Technology, Cambridge, and independently by Dr. Alan Dressler of the Observatories of the Carnegie Institution, Wash., and by Dr. Douglas O. Richstone of the

Their observations, made with

ground-based telescopes, showed an abrupt increase in the orbital velocities of stars towards the center of M32.

This data led the astronomers to conclude that M32 must have a strong but unseen concentration of mass at its center.

A black hole at least several million times the mass of the Sun is the most likely type of object matching these characteristics.

Ground-based images, however, do not have enough resolution to detect the effects of a massive black hole on the structure of M32.

The HST images analyzed by Lauer, Faber and co-investigators on the WFPC imaging team now show the nucleus of M32 in clear detail.

They find that the density of stars in the nucleus of M32 appears to increase steadily towards the center, with no sign of leveling off.

These results are very similar to the predictions for what a massive black hole should do to the central structure of a galaxy.

"This is the densest stellar system known to astronomers," says Lauer, "The density of stars at the center of M32 may be over 100 million times greater than the distribution of stars in the neighborhood of the Sun.

A visitor to a planet at the center of M32 would see a starry night sky so saturated with stars that their combined light would be brighter than 100 full moons. The night would never get darker than midtwilight on the Earth, and one could even read by starlight.

USAir seizes control of Trump Shuttle

Associated Procs

BOSTON - USAir began running the former Trump Shuttle Sunday under an agreement with a syndicate of banks that took control when owner Donald Trump stopped making interest payments.

The change occurred with little fanfare.

Some of the gold, black and red 727s on the routes already have been painted over in USAir colors, and the interiors eventually will be refurbished. But the same employees, gates and schedules remain in place.

"Our goal is to keep everything about the Trump Shuttle that has made it a quality product for passengers," said Gordon Linkon, president of the USAir Shuttle, which will be headquartered at New York's LaGuardia Airport.

USAir is the third carrier to run the profitable Boston-New York-Washington shuttle since Eastern Airlines created it in 1961.

Trump stepped in when Eastern was crippled by a strike in 1989. He spent \$365 million to buy the shuttle and \$2 million a plane to add such features as soft leather seats, maple wood veneer, pink imitation marble vanities with burgundy porcelain sinks in the bathrooms.

But business difficulties forced Trump to relinquish the shuttle as part of an agreement to reduce his The Transportation Department gave approval March 27 for the switch to USAir, which paid \$16.2 million for management rights, an option to buy the service after 4 1/2 years, a \$1.7 million-ayear management fee and the chance to lure the shuttle's passengers to use its other services.

On Friday, USAir said it would lower shuttle fares by up to 35 percent. The unrestricted weekday oneway fare for shuttle flights will drop from \$142 to \$120 and the weekend unrestricted one-way fare from \$92

The service faces potent competition from Delta Air Lines, which took over the former Pan Am

Shuttle in September. Both are fighting for a dwindling supply of customers; air traffic on the routes fell 21 percent between Sept. 30, 1989 and Sept. 30, 1991, according to the U.S. Department of Transportation. The number of fliers on both shuttles dropped 28 percent to 2.3 million annually during that time.

But taking control of the shuttle makes USAir a dominant carrier in the Northeast. It already has more jet departures than any other airline from Washington's National and New York's LaGuardia airports, and now becomes the largest carrier at Boston's Logan Airport.

"The shuttle will link key Northeast business markets to the USAir system," the airline's president, Seth E. Schofield, said.

Despite hard times, the shuttle's high price keeps it profitable.

The air space between New York and Boston is probably the most lucrative in the sky for revenue per passenger mile," said Allen Michel, associate professor of finance and economics at the Boston University School of Management, "The passengers who want to fly are typically business people during the week who are not interested in taking a chance, even a small chance, that the other planes are sold out."

Trump said last week that the shuttle would make \$20 million this year. And business on the Delta Shuttle remains "just as strong and perhaps a little stronger" than projected, spokesman Bob Harper said.

USAir is offering special bonus miles for members of its frequent flier program who fly its shuttle routes before July 15. Passengera will receive a credit of 5,000 miles the first time they board, plus 2,000 miles for each one-way trip double the usual credit.

"Our goal Is to keep everything about the Trump Shuttle that has made it a quality product for passengers,'

Gordon Linkon



Charlie McAllister has been flying so long that his pilot's license was signed by Orville Wright. McAllister is seen here standing before his flying service that he started in Yakima Washington.

Eighty-eight-year old's license signed by Orville Wright

Associated Frens

YAKIMA, Wash. - Charlie McAllister has been flying so long he has a pilot's license signed by

Orville Wright. McAllister flies so well he's survived a dozen emergency landings.

He knows aircraft so thoroughly that a glider he built hangs in Seattle's Museum of Flight.

And at 88, he's not ready to give up the throttle

"I can fly in my sleep," he said recently. "I've never had an accident of any kind flying.

No longer able to fly legally because of his eyesight (his corrected vinion in 20-40 instead of 20-20), he still goes up with employees of McAllister Flying Service.

Once in the air, he admits to putting the single-engine plane through a few moves.

As a teen he built his first plane, a glider, from blueprints published in (Popular Mechanics.) He still has the magazine, but not the glider, which could carry a person to a height of 15 feet.

"I broke it up because I was afraid endurance record of 19 hours for someone would get hurt," McAllister said.

McAllister learned to fly from the legendary stunt pilot Tex Rankin of Walla Walla in 1926. He moved to Yakima to establish his flying service, using a wrecked plane his mechanic brother had rebuilt.

"People handed us money to fly," McAllister said in his ramshackle building at the Yakima airport.

McAllister has trained 1,500 pilots at his flying school here since 1926, when Calvin Coolidge was president and George Bush was 2

It takes at least 60 days to train a licensed pilot, and landing is the tough part.

"If you stand on a fence post and jump off, that is like taking off," he said. "Trying to jump back on the post is like landing.

McAllister barnstormed through the Northwest, and his office still sports a weather-beaten wooden sign identifying "The Wonder Boy Pilot" and offering "Airplane rides \$1.50,"

During the Great Depression he set out to capture the world

glider-flying. He designed and built mechanics to repair the fabric wings the "Yakima Clipper," a wood and fabric sailplane

In June 1933 a crowd gathered on cliffs outside Yakima to watch McAllister launched with a giant rubber band. He circled for nine hours. But then the wind died, and McAllister had to settle for the

That glider logged more than 40 flights and is now on display at the Scattle museum.

Northwest record.

The pilot's license with Wright's signature is kept in its original blue cloth binder, stamped by the National Aeronautic Association, It was required for anyone attempting to set world records, McAllister

Wright was the chairman of the association and signed the license in 1927, but McAllister never met him.

He credits smart flying for his clean safety record, which includes a dozen safe landings after the engine

Part of the reason is the flat and treeless terrain across much of eastern Washington.

During World War II he trained on bombers.

His flying service for years has refueled the military planes that use the nearby Yakima Firing Center for training attacks. As a result his office is filled with pictures with military aviators and plaques thanking him for his contribution to this or that squadron.

He married his second wife, Georgia, at the age of 80. She helps run the business.

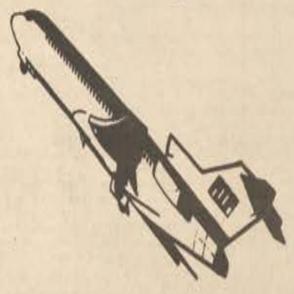
There has been talk of renaming the Yakima Air Terminal for McAllister, although he doesn't expect that to happen in his lifetime.

McAllister was supposed to be the first to land at the new Yakima airport when it opened in 1926. But a fellow barnstormer named Elroy Jeppesen happened to be in the area and made a landing at 5 a,m, to claim the honor.

Jeppesen went on to fame and fortune by designing the aviation charts, known as Jepp charts, still in use by commercial airlines. The new airport terminal in Denver is to be named for him.

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automaker said.

MTR390 developed for use in the Tiger

The first flight of the prototype Tiger took place, in schedule, on April 1991 and launched the flight program of this new twin-engined Franco-German anti-tank and ground support helicopter. The flight, which was made at Aerospatiale's flight test center at Marignane in Southern France, also marked a major new stage in the evolution of its engine, the trinational MTR390.

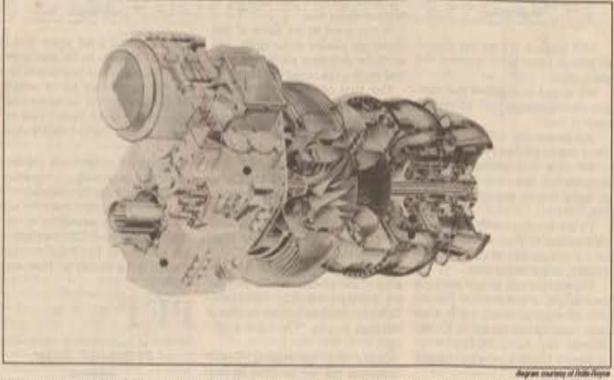
For more than two months before this the MTR390 had been flying in an Aerospatiale Panther operated by MTR. The Panther flying test bed will contribute engine flight test experience to the Tiger program until 1994. The Tiger and Panther have together accumulated more than 200 flying hours, and the MTR390 engine has performed and handled well in both helicopters.

When the new engine is designed, both functional and economic requirements have to be met. The functional requirements (shaft power, installation, operation and maintenance) determine the engine size and define its configuration. The economic requirements are to minimize fuel consumption, weight and production and maintenance

Engine fuel consumption is largely dependent on component technology and engine size. Research programs by the three partner companies had shown that in an advanced 1,200 shp engine, the thermodynamic cycle parameters would yield a minimum specific fuel consumption around a pressure ratio of 14:1 and a turbine inlet temperature of 1,450 Kelvin. This research enabled the partners to test components for several years before they finally agreed the MTR390 specification.

Other advanced engineering programs covered areas such as intakes and exhausts, turbines, combustor materials, mechanics, health monitoring, compressors and engine control units.

The MTR390 is an advancedtechnology engine in the 1,200 to



The MTR390 is a compact and lightweight two-spool turbojet of modular construction. The engine was developed for the anti-tank Tiger helicopter.

cy power rating, which is repeatable, taken will ensure a high availability extensive demonstrator work conis 20 seconds at 1,555 shp; Take-off rating is 1,285 shp and maximum continuous rating is 1,170 shp. In the event of one engine failing, the other must be able to run at take-off power for 30 minutes.

The MTR390 is fully modular. with the gearbox, gas generator and power turbine modules being interchangeable between engines. It has also been designed for on-condition

maintenance. In addition to the maintenance features built into the electronic systems - engine health monitoring, life exceedance check and self-test - the MTR390 also has mechanical health-monitoring capability, which comprises:

- Filter, pre-blockage and bypass indication
- Strategically located boroscope
- inspection ports - Vibration monitoring
- Magnetic chip detectors

From the beginning of design, maintainability studies have sought to facilitate maintenance of the engine, both installed and in the workshop. These studies, using mock-ups, have assisted during the

rate and reduction in the users operating costs.

An effective method of reducing cost is to minimize the number of parts in an engine. This of course requires individual components to work harder and to be more efficient. It was therefore particularly important to achieve optimum performance from each component.

Turbine aerodynamics for the engine were optimized on the basis of a comprehensive rig program. Four different design standards were investigated in 20 builds of a coldflow rig, including studies of cooling air and blade-tip clearance effects on turbine performance.

Hot-component development work cannot rely solely on rig testing, and performance investigation on a representative engine is essential, MTU Munich therefore built a demonstrator engine and dedicated it specifically to combustion chamber and horsepower turbine develop-

The mechanical element of the turbine development program concentrated on demonstrator testing with new single-crystal blades and 1,500 shp class. Its super-emergen- engine definition. All the actions powder-metal discs. Another area of and beyond.

cerned the compressor. The current design has easings and static parts with thin walls and makes extensive use of titanium, which gives a very light structure.

Two further significant areas covered by demonstrator program activity were optimization of the cooling of hot components and the development of effective blade-tip clearance control, which is essential for efficient performance retention.

The first production engine delivery is scheduled for the end of 1995, ready for acceptance of the HAP (escort and fire-support) version of the Tiger in early 1997. Further versions of the Tiger scheduled for acceptance are the anti-tank PAH-2 later 1997 and HAC in 1999.

The MTR390 is a strong competitor as the powerplant for future civil design being considered by Bell Helicopter. In the longer term it could be considered as a replacement engine for the Gem in an uprated version of the Lynx. These and other developments of the MTR390 will be available for other military and civil airframes in Europe and the USA for the 1990s

Automotive news corner

~General Motors announced more reorganization plans for the once profitable car company. They plan to slim down the number of car platforms from the current 17 to a possible low of just 5.

What was disclosed is that the U (APV minivan), A (Ciera, Century) and W (Lumina, Grand Prix, Cutlass, Supreme, Regel) chassis will be cut down to just one chassis, Also, the L (Corsica, Beretta), J (Cavaller, Sunbird) and N (Grand Am, Achieva, Skylark) will get the same treatment.

The speculation is that GM will end up with just 5 car chassis: a small, mid-size, large fwd, full-size rwd and sporty rwd chassis,

-NHTSA (National Highway Traffic Safety Administration) has opened an investigation into 4.3 liter equipped S-10 Blazers and GMC Jimmys from 1989-91. The utility vehicles have been blamed for 13 accidents with one having a fatality. The NHTSA is looking into complaints of engine surges when starting or when coming to a

~Roberto Guerrero exceeded the 230 mph mark at an Indianapolis Motor Speedway test session. He averaged 227 mph in a four lap segment in a Kenny Bernstein Lola-Buick, then later turn three laps at more than 230

~(AP)General Motors said Friday it was recalling two models to fix possible safety defects in accelerator control cables and electric window systems.

About 30,000 model 1992 Pontiac Sunbird cars equipped with standard 2.0-liter, 4-cylinder engines would be checked for accelerator cables that became kinked during assembly, the automaker said.

The defect could result in a sticky accelerator cable, a broken recovered since the beginning of cable or a loss of acceleration control, GM said in a news release.

The company also is recalling about 39,000 model 1991 Oldsmobile Calais, Buick Skylark and Pontiac Grand Am cars equipped with optional power win-

has dows. Moisture may enter the electronic control module inside the driver-side door panel, causing the window to open or close involuntarily.

Under certain circumstances, the control mechanism could overheat and fail, GM said.Owners would be notified by mail and dealers would make the repairs at no charge, the

-Porsche 968 set a 24-hour endurance record for automatic transmission cars. The tiptronicequipped 968 averaged 143.8 mph at Nardo, a test track used by Fiat, located in Italy. The Porsche used one gallon of oil and required no other maintenance.

~(AP)Chrysler is counting on a host of new products to increase sales and shore up its bottom line.

The company's new chief operating officer, Robert Eaton, says Chrysler has enough new products in development to replace every vehicle in the current lineup by

Already, the 400-horsepower limited production Dodge Viper sports roadster is a darling of the auto show circuit and automotive

Early sales of its Jeep Grand Cherokee, an all-new sport utility vehicle, are running ahead of pro-

And the late summer sales start of its new line of midsize cars should coincide with what economists predict will be later stages of recovery from a two-year auto recession.

Later on, Chrysler plans to launch a new line of small cars in late 1993. These will replace the Plymouth Horizon and Dodge Omni "econoboxes" Inunched in the late 1970s.

~Ford will introduce an redesigned Escort model in May as an early 1993. The facelift is to help improve sales that have never the recession,

-Nissan said it will continue production of the NSX even though sales are poor. Nissan produced 7400 of the cars last year, only 1940 of those were sold in the United States.

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By John S. Eubanks III Public Affairs Officer

The Gill Robb Wilson Squadron had an extremely busy, complex, yet fun-filled semester. Despite a tremendous responsibility of ARCON and a demanding schedule of activities in AAS and the corps, AAS somehow pulled together and achieved.

This semester we initiated five cadets. The new members are C3C James Cuilty, C/ILt Bridgette Smith, C/3C Blake Jeffries, C/3C Nicole Malloy and C/3C Michael

By Jason Piper Chapter Munician

Well brothers a long year is coming to an end. We have a lot to look forward to next year.

But, before I get into that I'd just like to say so long to the departing seniors. Steve Marx, Sunny Patel, Allen Lucas, Jeff Jones, Pat Mack, Merle Perry and Scott Spaulding.

Actually, Scott probably won't go anywhere, he can't stand the thought of our meetings getting out at a normal hour, Just kidding. We'll miss you all. Thanks for all you have done for AHP in your years here. You will not be forgotten. And, of course we want to see you all come to ritual next year. Which brings me to my next topic.

Ritual was excellent this year, a big thanks to all who helped plan it. There were the normal mishaps and close calls but we managed to stay the whole night. The next day, after much stumbling around and confusion, we finally made it to Disney World. Everybody had an excellent time. Congratulations to all the new brothers. You've earned those softest, cheapest thing you can find

Looking toward next year, the new officers are Joel Nix -President, Sam Greco - Vice-President, David Macko - Secretary,

Bishop. Congratulations!

The squadron also held commander elections for the Fall 1992 semester. AAS 1Lt Arnold Rodriguez won the election and we're sure he will do a great job guiding AAS to be the best in the

We'd like to recognize the graduating seniors as they prepare for a promising future as Air Force officers. We'd like to thank Capt. Pannone, our advisor, for all his advice and sincere efforts. Have an awesome summer and C-ya next

Tony Caballero - Treasurer, David Garvin - Pledge Master, Greg Belter Parliamentarian, Jason Piper -Historian, Rob Proctor - Alumni Secretary. It's going to be an excellent year.

To leave on a humorous note, here is an excerpt of a speech by Earl Bueler, one of our founding

TEN RULES OF AVIATION 1. Don't bust your butt.

2. Don't let anyone else bust your butt for you.

3. Remember- The pilot is always the first to arrive at the scene of the accident

4. When in doubt - Get out!

5. In instrument flying, one peck at the ground is worth a thousand cross-checks.

6. It's the same with thunderstorm ice as it is with being pregnant, there's no such thing as "just a lit-

7. Remember, airplanes fly because of Bernoulli, not Marconi. Point: don't drop the aircraft to fly 8. If a crash is inevitable, hit the

as slowly as possible. 9. What you don't say you won't

have to take back at the FAA hear-

10. Don't forget rule one!

By Erica Watt Public Relations

This will be my last time writing Theta Phi's article (yeah!), therefore, I will take full advantage of it. Let's all imagine it's two weeks ago, and we are at Sisters (awards) Night. Absolutely amazing!!! That's the best way to describe it. Pledges very impressive, you should be extremely proud of yourselves. Enough compliments, it's time to re-cap the evening.

Max - who is the masked man doing sit-ups? Ellen - yes honey you can do it, he won't bite! Babs - how bout those boots? Anyone for a Mil and Mel nandwich?

Flying Nun - "I've seen you in the computer lab." Well, we definitely all saw the TRUE Kelly, boy did her eyes get big.

We celebrated our Founder's Day this past Sunday. Thank you to our faculty advisor, Katherine Wilson, for everything. We also had initia tion this weekend, CONGRATU-LATIONS to our newest and shiniest sisters: Barbara (Dolly) Ferguson, Stacie (Trixie) Forte, Kellene (Hot Lips) Gaetaniello and Lori (Fraggle) Peters!!!!!

Elections were held this past week. The new officers are as fol-Iows: President - Erica Watt, Vice President - Ellen Rosenzweig, Secretary-Robin Woodard, Treasurer - Sarah Arciszewski and Pledge Trainer - Kelly Watkins.

Good Luck on finals everyone and have a great summer!!!!!

By Dan Frattin Chapter Mender

Well brothers, it's my last chance to submit some juicy material for publication

We've had an excellent past couple of weekends, all of which deserve merit.

Our annual trip to King Henry's Feast was as good as ever.

We were well lubricated by the time we left, and came even closer to being thrown out this year than

To all brothers who attended, please refer to your cornerstone as to the proper use of utensils and courtesy at the dinner table.

The pledges will be performing a swordfight to compensate for our loss of entertainment, right after they clean up our stretch of Clyde-Morris for Adopt-A-Highway. Brother's Night went surprisingly

I believe that everyone in attendance, including Wally, had an See you in finals ... excellent time.

Thanks for feeding and gassing us up. I get sick just looking at chicken wings now.

It was good to see some of our illustrious alumni down again, and we hope that they all felt the trip was worthwhile (wasn't it, Hank?).

Our first annual graffiti party with the soon to be A X D 's got off to a late start, but was a good time for all none the less.

Congratulations to our new officers: "A" - Dean LaFonte, "B" - Bill Lewis, "C" - Delphin Gant, "D" -Dan Turner, "E" - Doug Klenke, and "F" - Albert S. Barnes. Good luck in the fall, and try to execute the duties of your office to your greatest potential.

The Blackball Express is accelerating to full power, and the pledges are looking potentially victimized. Tallman, someone told me to relay a message to you, "Go felch yourself".

Last, but not least, Team Sandblast has hit the road in full force, so stay off of the sidewalks.

Clubs Policy

All articles must be type-written, double spaced or on disk format (unformatted in Word Star or Microsoft Word) Deadline for submission of all club material is

Wednesday at 5 p.m., one week prior to publication.

Photos may be submitted with club articles. All submitted material becomes property of the Avion with the exception of disks. The Avion reserves the right to edit all

submitted copy.

For more information stop by or call the Avion office at (904) 226-6079.

By Eric Stevens **Club Witter**

On April 7th we held our elections for new officers.

Paulo Neto was elected as President, Elaina Tralle as Vice-President, Mitch Cohen as Treasurer, and Terry Laney as Club Secretary. Congratulations to our new club officers, we are all looking forward to an exciting future year

A thanks also goes out to our old officers who made this such a great year for all the SAA members. This is the last article of the

semester and the last for me as I graduate this term.

this club for a year, I believe it to be you all at the party!

one of the best on campus. I encourage those who are read-

ing this and do not yet belong to the SAA to go ahead and join, it is well worth it. In fact, I wish I had joined this

club 4 years ago when it was first formed. Since that time, the SAA has become an experience that no one should miss here at Embry-Riddle.

I hope everybody has a safe and productive summer.

Don't forget the semester party, it should be great fun and a good chance to say goodbye for the sum-

Those who are staying here for the summer will help the SAA gain Although I have only belonged to momentum for an exciting fall. See

The Avion sends special thanks to all of you who have participated in getting the word out to students about your special events and sense of community.

Good luck during finals.

By Eric Sarnowski Chapter Member

Hey bros, it's me again and it looks like it might be for quite some time. Once again if you would like to take this exciting job of writing off my hands, I'll be more than happy to step down. Here's your big chance Evans. No!?! I didn't think

Moving on to the latest Lambda Chi Alpha happenings, congratulations to all of the new brothers. It has been a long, hard semester and you have proven yourselves worthy of the brotherhood. Congratulations also goes out to Tim Rupe who has recently been named an Honorary Brother,

Kick ass award goes out to Jeff Reis, Mark Raffa, the Phi team, and everyone else that helped out this past week.

Finals are upon us once again so make sure to study hard or hardly study in some cases. Let's try to stay at the top of the academic lin Speaking of lists, anyone who has not yet spoken to Marcus Fisher and given him your summer addresses should do so. Who knows, maybe someone will call you.

Goodbye to Wade and all of the graduating brothers. Always remember, you got out of this place before Grandpa did.

Well, that's all for now. Have a good summer and keep in touch. Later.

By Robert E. Bitzer Ckb Member

Hi folks, welcome to the last installment of PFT news for the spring semester of 1992. In this edition we'll look into the Simulator, Navigation, and Message Drop events

So, you want to sharpen your BAI skills, eh? Well, the Simulator event will keep you sharp and make you a veritable SIM-GOD.

In this event, you fly a pattern in the simulator. This pattern is divided into different timed legs and checkpoints, which describe the maneuver you will be completing. All turns are standard rate and climbs and descents are made at 500 These two things are the only

constants in the Sim event, because from there, the whole routine is controlled by how sick and demented the person who drew the pattern You may have to do a climbing

left turn at 110 kts for 15 seconds, followed by a descending right turn at 60 kts for a minute. Any deviation from the pattern (1 degree of heading, 10 feet off altitude, 1 kt off airspeed...you get the picture) will result in points being added to your score, and the person with the lowest score wins.

The two individuals who will be putting themselves through this torture at Nationals will be Sergio Figeroa and Kevin Sheppard, who took the #1 and #2 positions in this

event last semester at Regionals. Scott Tarves, Ari Buchanan and

Kevin Sheppard will be participat. ing in the Navigation event, which is like a mini-cross country, the competitors fly at set courses and overfly certain checkpoints and judges at the checkpoints note the time of arrival.

The person whose estimates on times, fuel burns, etc. are the closest to what they actually flew wins the The last event is the Message

Drop, often referred to as the Bomb Drop. In this event, a Cessna 172 is flown down a runway at about 200 At each end of the runway, there

is a small square target, and competitors must drop a message container into this target (by heaving it out the window). Sound easy? Well, the bom-

bardier must compensate for the wind, the blazing speed of the Cessna, the pilot's flight path, and it's suddenly obvious that a 172 isn't exactly a B-29 with a Norden bombsight. Well, that's the last of my in-

depth look into the events that the team will be competing in at the Nationals in two weeks.

I'd also like to thank the team for the opportunity to write these articles this semester, it's been a lot of fun and I hope to continue it next year. In the meantime, I hope everyone does well on their finals and has a great summer. And hey, it's time, to win Nationals!

By Sean Le Douarin President

Euro-Connections in America was approved by the SGA on March 3rd. We are a dynamic, ambitious club whose first purpose is to gather and extend relationships and professional contacts between Europe and America. Since then, our roster has extended to over 40 students from more than a dozen different countries. The club has hailed four

meetings and two parties. Our first elected club officers are: Sean Le Douarin - President, Francois Sern -Vice President, Jacqueline Gauger -Secretary, and Stefan Kageman Treasurer. New members are always welcome. The club will be active during both summer terms. To find out more information contact Student Activities. Last, but not least, thanks to Dr. Goldberg for his support as our advisor.

Bookstore announces buyback policies

Need money? Get up to 50 percent of the new price and Instant Cash for your used books.

Here are some things to consider when selling back used books: If your book has been reordered for the next term, the bookstore will pay you 50 percent of the new list price, until the bookstore has bought the number needed for the next term's use. After that, wholesale prices will be offered for those books. The earlier an order is received from the department, the sooner the bookstore can pay 50 percent for it.

If your book has not been reordered for the next term, without an official order for your book, the bookstore has to sell and ship it to used book wholesalers, who offer lower prices (10-33 percent), based on used book buying guides.

If you have an old edition and publishers issue a newer edition, the old edition (in most instances) has no retail value and the bookstore cannot buy

When books are sold back, they must be in good condition. We cannot buy back books with bindings broken, pages missing or printing blacked

Used books kept for sale in the store for the next term will be priced at 75 percent of the new list price. Therefore, you will save a fellow student 25 percent off the new price the next time that book is sold in the bookstore.

Embry-Riddle graduation party

Kokomo's of Daytona will be hosting a graduation party solely for Embry-Riddle students and guests on Friday, April 24, from 6 - 9 p.m. There will be a \$10 cover charge for all in attendance, but Kokomo's will

supply all the free food and drink you can handle. The reggae band Technodread will also be supplying reggae music all day, There is free parking for Kokomo's behind Hog Heaven BBQ. Kokomo's

is located at 100 North Atlantic Ave., Daytona Beach. All Embry-Riddle graduates, students, family and friends are all welcome to this graduation party!

Blood drive today

Sigma Chi Fratemity - Embry-Riddle Aeronautical University will sponsor the Spring Blood Drive on Wednesday, April 15 and Thursday, April 16, from 9:00 - 5:00 at the Student Center and from 11:00 - 4:00 p.m. in front of the library.

Please mark your calendar to donate blood. Remember - the life you save may be your own or someone you love! Bring a friend!

Amy Writing Awards

The Amy Foundation Writing Awards program is designed to recognize creative, skillful writing that presents in a sensitive, thought-provoking manner the biblical position on issues affecting the world today.

To be eligible, submitted articles must be published in a secular, non-religious publication.

The opportunity is yours to present biblical truth as quoted from an accepted and popular edition of the Bible, such as the New International Version, The Living Bible, the King James or the Revised Standard Version.

In addition to the \$10,000 first prize, there are fourteen major cash awards. They include a \$5,000 second prize, a \$4,000 third prize, a \$3,000 fourth prize, a \$2,000 fifth prize and 10 prizes of \$1,000 each - a total of \$34,000 in Writing Awards.

Articles and/or inquiries may be submitted to: The Amy Foundation

Writing Awards P.O. Box 16091 Lansing, MI 48901 (517) 323-6233

All entries must be postmarked on or before January 31, 1993.

Winning articles will be announced on May 3, 1993.

Graduation Day schedule

Seniors should plan to arrive at the East Side of the Daytona Beach Ocean, on the first floor, by 8:00 a.m. on April 25. Seniors should find a graduation marshal that matches their assigned graduation number (numbers will be received at cap and gown pick-up).

Parents and guests should arrive at the Ocean Center starting at 9:00 a.m. and enter on the West Side. Admission is free, however Ocean Center parking will be \$3 per vehicle.

The graduation ceremony starts at 10 a.m. and will last until approximately 12:00 p.m. Photo Areas will be set up on each side of the stage, near the front. Actual diplomas can be picked up at Records and Registration on campus

until approximately 1 and a half hours after the end of the graduation cere-The graduation speaker will be Senator Wendell Ford of Kentucky. Following the ceremony there will be a reception in the Student Center for

the graduates, guests and family, Any graduates with any questions about graduation, the Senior Party, cap and gown or any other topic should contact the Student Activities office.

Cap and gown pick-up

Cap and gown pick-up will be Thursday, April 23, from 9:00 a.m. to 12:00 p.m. and from 1:30 p.m. to 4:00 p.m. in the John Paul Riddle Student

Seniors should stop by to pick-up caps and gowns and other materials The pick-up process should take 45 minutes to one hour. Any Seniors that cannot make this date, should inform Student Activities by April 22, to make arrangements to have another person pick-up caps and gowns. The cap and gown company will not be available on Friday.

Caps and gowns can be kept by the graduating seniors, but all financial obligations to the University must be settled prior to pick-up.

Senior Class 1992 party

The 1992 Senior Class Party will be held Thursday night, April 23, at 8:00 p.m. to 2 a.m. in the Marriott Grand Ballroom. The Party theme is

There is no admission charge for graduates, guests and family, Heavy hors d'ouevres will be served and there will be a cash bar. Dress is semiformal. Guys - coat and tie, Girls - cocktail dresses. A dee-jay will be be supplying music for the evening.

Embry-Riddle Graduation Party

Hosted by Kokomo's Friday, April 24 6 to 9 p.m. \$10 Cover Charge Free food and drinks Reggae All Day with Technodread

Free Parking Behind Hog Heaven BBQ A Party for Embry-Riddle Graduates, families and guests only!

Bookshelf for Windows pushes PCs toward the 21st century via CD-ROM

By Joe Cambron Data Tech Editor

In a time of turbulence and change, it is more true than ever that knowledge is power.

-John Fitzgerald Kennedy. Address at the University of California, Berkeley [March 23,

Never has this quote been more true. In fact, even now the acquisition of knowledge is one of mankind's most fervent pursuits. Acquiring that knowledge is usually difficult, however. In an age of techsology, one of the highest priorities assigned to the development of computers falls under the banner of expanding the human mind, Now, it is becoming easier to use your computer not just to play games and undertake tasks, but to learn.

Microsoft is on the cutting edge of this technology. In order to provide an atmosphere that is conducive for learning, Microsoft believes it must provide a combination of pictures, sound, and knowledge rolled into one attractive package.

With the birth of Multimedia (discussed last week) this has become possible. Although other CD-ROM software titles attempt to mix the three things needed to make learning fun and easy, Microsoft has surpassed every other package I have ever seen with its Microsoft

Bookshelf 1991.

This package combines distinctly and acquisitions different titles into one cohesive Hammond World Atlas CD-ROM that may be run under Windows 3.0 or 3.1. Bookshelf contains entire volumes of The World Atlas, World Almanac 1991. Concise Columbia Quotations. Roget's Thesaurus, Bartlett's Famous Quotations (the origin of the above quote), The Concise Columbia Encyclopedia and the American Heritage Dictionary, What you need

In order to get this package to function fully you will need Microsoft Windows, the Multimedia Extensions set (available from Microsoft), a 286 or faster CPU based IBM compatible, a CD-ROM drive, and an audio board (Soundblaster 1.5 or newer, or other digitizing sound boards). A simpler setup unable to play sounds or run animations does not require a sound board or Multimedia Extensions. Rendy to go

If you have all these things, you may now embark on an odyssey of sight and sound. Along the way you may search through nearly 630 megabytes of data for key words (much like a library's electronic card file), have quotes read to you by their original author, have difficult words pronounced for you, watch and listen to a jet engine spool up as the narrator explains the processes inside the engine, or search through

encyclopedia.

Illustrated Encyclopedia

more comprehensive than other similar

products that are often merely condensed

encyclopedias. It does not include the mx-

zle-dazzle of multimedia animations or

a list of history's largest mergers this case, provide color to the

World Atlas is an indexed work containing continent, country and U.S. state maps. The maps are organized by location and are indexed alphabetically. Also included in the package are separate images of flags and national anthems for each of the countries of the world. U.S. states also feature flags.

Roget's II Electronic Thesaurus This complete edition is organized alphabetically and provides a brief definition and synonyms for each word according to its usage, World Almanac and Book of Facts

This general reference book provides facts, geographic data, statistics, zip codes and trivia. Also contained are some images and a perpenial calendar.

Concise Columbia Encyclopedia

This crown jewel of the package is made of 15,000 articles about subjects ranging from horses to the universe. It also supports a limited number of animations. These animations show in detail how such things as a jet engine works or how the continents have separated since the birth of the earth. The jet engine animation, for instance, shows the inner workings of a jet engine while a narrator describes the processes

Sound effects, a jet taking off in Software Toolworks de

demonstration, Many entries also contain still images.

Concise Columbia Dictionary of Quotations

This 6,000- item collection includes contemporary quotations organized by subject. The strongest part of this reference is its extensive cross-references.

Bartlett's Familiar Quotations, Fifteenth Edition

In this volume, 22,000 proverbs, phrases, and quotations are sorted by author. This collection contains quotes primarily from the pre-1900 era and features audio readings of many of the available quotes-by the original author where possible.

American Heritage Dictionary, Second College Edition

Two hundred thousand definitions of more than 60,000 words are available in this reference. This dictionary comes alive with actual pronunciation of words spoken by a human voice. Also available are cross-references, word biographies and geographic entries. A style manual is also included to help the unwieldy writer to master proper

Topics in any of these volumes may be searched for in several ways. Browse, keyword, and operand searches are available for single or multi-volume searches. Simply typing in "RJR Nabisco" produced sev-

Price 5 Per Format. Size Title Meg \$159 CD-ROM \$26.50 Sigffrages, Linconcella 6 magabytes World Allan CD-ROM Suffered Desputa \$219 195 megabytes \$1.12 Ilhistratud neye lopudia CD-ROM Afterwoft Honkshelf \$249 647 megabytes Microsoft Word for 12 megabytes \$24.83 Floppy Windows Microsoft Himious: 10 megabytes. Floppy OFMX 1-2-3 V- 11 0802 \$49.7 8 megabytes Floppy Ving Communities II 18 megabytes Floppy

CD-ROMs, while expensive by some standards, are actually quite economical when you consider the amount of data some of them contain.

eral references to the giant company. One detailed the size of its 1988 leveraged buyout. Another made reference to an RJR factory in a U.S. city. Another mentioned the comparative size of RJR's ad budget in early 1990s.

In searching for the quote at the beginning of this article, I needed only to begin a search of both quote references by pushing the search key and selecting the topic of "change," In less than 15 seconds a list of over 100 references was available and it was time to apply a second keyword to lessen the number of entries.

Having your own library at your fingertips is even easier to work quote onto my word processor, I upgrade plan.

only needed to select copy while in Bookshelf and then select paste in Word for Windows 2.0. The quote quickly appeared, fully annotated.

Bookshelf is more than impressive, it is the definition of progress. Even if you see no need to take advantage of Bookshelf or Multimedia in your current situation, Any current or future PC owner owes it to himself to see the state of the art in information technology. You will be surprised what a PC like your own can do with a few peripherals. Bookshelf is available in software stores, via mail order, or can be ordered directly from Microsoft. Future editions of Bookshelf can be with than you think. To copy the acquired through an inexpensive

Index to Europe Finl soil

This map was exported from World on-line narration, but the quality of the Atlas.

information stands by itself. By Joe Cambron It does include a strong library of digi-Data Tech Editor

tized sounds which run the gamut from Martin Kuther King speeches to bird calls. Software Toolworks is the author of a Another strong feature of this encyclopepair of CD-ROMs that also provide the dia is its wealth of images. Each major 'essentials" in CD-ROM software, One is type of bird, for instance, is cataloged with an atlas and the other is a fully functional a brief description and a full color VGA image. The nearly 200 megabytes of data included is made up of the nearly 21 vol-This title is by far the strongest of the two fielded by Software Toolworks in ume Academic American Encyclopedia. The complete text of over 30,000 articles this review. This encyclopedia is much

> All in all, the Illustrated Encyclopedia was easy to use and certainly does not require the time and expense needed to

is contained as well as maps and other

setup a fully functioning Windows ties that are not included in the Bookshelf Multimedia system. The only equipment atlas. needed to take full advantage of this package is a CD-ROM player, an 80286 or faster IBM compatible, VGA and a bead-

World Atlan is a relatively small program, weighing in at just six megabytes of data, less than one percent of a CD-ROM disk's capacity. This bare bones atlay program has EGA/VGA graphics of the major regions of the world. Unlike Microsoft Bookshelf's atlas program, this one does not include flags of all major countries as well as their national anthems. It does provide, however, statis-

Aslas' greatest advantage is also its biggest weakness. Its maps can be printed or saved to a file, Bookshelf cannot undertake this simple function, probably because of copyrights. The dilemma that those who wish to print these maps faces is one of time. Atlas is slow, painfully slow in fact. Printing one map required nearly 15 minutes as the program alowly ticked through 336 printer bands.

All in all this program does not really take advantage of the CD-ROM's capabilities to the fullest extent. This program could have been included on a set of four high-density floppies.

30kV 80 µA max. Max. Doserate-0.1 mR per hour at 10 cms from shielding.

Autos for sale

187-192 Jeep. Lift kit, 4 1/2" soft ride with dual steering dampener, Mickey Thompson 33x15's with rims. Must see, \$800 OBO taker all. Call 672-3978.

1988 Homia Accord DX, 4 dr., gold, PS, PB, C/C, an/fm cassette. Mint condition, \$7850 OHO. 322-2434, Call after 5:30 p.m.

'82 Dodge Flymouth Turismo. Runs well, am/lin, 4-speed, \$450, 756-4831.

CHEAPI PIU/US SEIZED 86 VW. \$50 37 Mercodes. .\$100 65 Monney. .550 Choose from thousands starting at \$25. FREE 24 hour recording reveals details at (801) 379-2929 Copyright #FI16KJC

1987 Chevrolis Speumen 4-door sedan, 5 speed manual, AC, stereo am/fm, 52,000 toiles, great inflange; approx. 30 mpg city, up to 40 mpg highway, silver-metallic, great condition. \$3500 OBO, 760-7579.

1982 Pontise J2000 station wagon. Less than 55,000 miles. Little put, good time. Call 441-1706 sher 6 p.m.

1980 Honda Prelude, MUST SELL, runs gives, new tires, radio, sunroof, good communer, \$800 negotiable. Call Milo at 760-

1985 Honds Rebel Motorcycle. Only 13,000 miles, in great shape. Asking 51100 OBO, If immunud call Chris at 756-6472.

1982 Honda Express moped, \$100 or best offer. Contact Jim at 252-9289, Room 303.

1987 Ninja 250, great shape, endless new parts. Most sall. Box 6601, RH 1 352. Phone 226-6548.

+ Roomates & Rental

Recommute wanted - F or M to share beautiful 3 hedroom house 10 minutes from ISRAU. Includes washer, dryer, AC and Cable/phone extensions in each room, MUST be clean! \$350/mo. util: included except phone. Call Dennis at 788-8276.

Roommats needed, 2 bedroom 1 bath -Mirror Fonds Apra. Free cable 1/2 utilities, 1.5 miles from sampus. \$235/month. Call Todd at 760-9265.

House To Share. Quiet Port Orange neighborhood, fully furnished, AC, washer, dryer, missu, oable. 3 bed, 2 bath, 10 minutes to school. \$235 per month + 1/2 milities. Call Paul at 756-0419 or 788-8870.

Room for mit in specious 2-floor townbouse. Private packing in driveway, washer and stryer, large kinthen. Pool and tennis court. Share full both + 1/2 both. Avail, end of April, 3205 + 1/3 mil. Call Patrick 253-5518.

Rocument moded to share 2 bedroom apt. Please call 760-1280 for more information.

Roomman wanted; Sprious-minded, courreous student to share 3 bed, 2 bath house located in Port Orange, Pay 1/3 elec. and phone. Wastier and dryer. \$225/mo. or \$360/mo, with own bath. Call anytime: 767-5720, ask for Chad.

Roommure needed 1 May, 3 bedroom house in Pelican Hay, Own room, share bathroom, large kitchen, living area. Must see to appreciate. \$375/month, stilities included. Call Neil 756-1916.

Non-resolving recommate needed for nice 3 bedroom, 2 bath bouse in Willow Run, Port Orange, Missonave, cable, VCR, outdoor gill in big park yard. \$225 month mnt + 1/3 utilities. Call to see 767-2908.

Roommate needed: non smoker. New house, eathedral ceilings, 3 bedroom, 2 bath, dishwasher, microwave, 5 miles south of ERAU, \$250 per month plus 1/3 utilities, Female preferred. Contact Ed at 756-4505.

+ Misc. for sale

FREE LOVE! 2 cats free to go home. 1 black/white female, spayed and 1 orange/white male, neutered. Both cats house o.k. Can go together or separately. Write box E-117 if interested.

2 barstools - almost new - only 57.00 each OBO! Call 248-2487.

Twin Mattress for sale. Only \$15.00 OBO. Must sell, moving soon. Call 248-2487.

GRADUATION SALE still going on. I desk for \$35. I high back living room chair for \$35. TV for \$38. Dining room set - make an offer. Other items for sale perhaps. Call and ask at 767-8947 for Chris.

Everything must gol Orsdusting! Kitchen table \$25, bookcase (4 shelves) \$20, nightstand/TV can \$20, student desk \$15, small glass coffee table \$5, twin hed \$25. Call 788-872 or leave a message.

For sale: IBM PS/2 Model 558X (CPU, monitor, keyboard, mome) Includes on hard driver - DOS 4.01, Windows 3.0, Word for Windows, Excel, Lotus, games, Enable. Must sell at \$1750 OBO. Great price, compare to Riddle's student discount and save. Call 760-

803865X IBM compatible computer. Intel inside, 80 Meg hard drive, 5,25 and 3.5 disk. drives. VGA card and monitor, 2 MB of Ram, Norton utilities and more, \$1522. Call 788-

ICom Air Band hand-held transceiver. Excellent condition. All accessories included, \$300. 672-8702, ask for Jay.

For Sale: Maying washer and dryer, Great condition, \$290 for set OBO. Call Tony: 788-

For Sales Nightmand, chest, bookcase, deak w/file cabinet, queen size futon, 2 fans and vacuum \$250. Schwinn mountain bike, 15 speed, pump, bottle, \$100. Call Dan 239-

FOR SALE: Aircraft flight manuals -Beecheraft 200/200C Super King Air, C99. Airliner, 1900 Airliner, Cerma 421B. Embracer 110 Bandeirants, GAP N24A Nomad. Crintact Zak at 760-4599.

For Sale: VGA monitor w/card. 286 moderboard, 44 MB-MFM hard drive, I/O card (w/many functions). 2400 external Hayes compat. modem & software. Will consider any reasonable price, will sell separately or together. Call now! Call now! Call now! 252-9289, ask for Jason, Room

DESK for sale: big office desk. Good condition, comes with office chair. Call Eric at 258-7697.

Couch, lovesest, & oversized chair with huge pillows, quibad florsl print. Gray, musve, charcoal, brand new, \$850 OBO. Call after 5:30 p.m. 322-2434.

Graduation, must figuidate: couch in very good condition \$50; aleeper couch \$20; single sent \$10; kischen table w/two chairs \$15; bar stools (4) 35 each; 2 night stends \$15 each; end table \$10; bed \$20; small college fridge \$40. All must go by April 30. Call 322-0217, ask for Sean or Darrell.

SECA TURBO for sale, \$2100 OBO, Call 226-6968 or 673-9836.

+ Miscellaneous

LEARN TO FLYIII

Get your Pilot's License or continue with your flight training. Quality and Experienced instruction at low aircraft rental rates. Train at a local sirport. Contact Jack at 756-1494 or leave a measage, CPII / MEL

Wanted: Wetsuit or barefoot suit. Comact Jim at 252-9289, Room 303.

Dunne (or was it Wayne?) I have in my possession "liye of the Dragon." If you want it back, most me in the library at 7:30 any

I need a ride to Milwaukee, Wisconsin area after finals. Will pay 1/2 gas and share driving responsibilities. If interested, please call Bryan at 298-2211.

LOOK! LOOK! LOOK! Anyone going to Texas after April 227 If so, please contact Jason at 252-9289, Room 309. Flying home and looking for a way to get belongings back. Will pay fair price for service.

\$40,000/YEAR READ BOOKS and TV scripts. Fill out simple "like/don't like" form. EASYI Fun, relaxing at home, beach, vacations. Guaranteed psychock. FREE 24 hour recording (801) 379-2925 Copyright

for Chicago, following Rt. 75 North, can stop at your destination. Share 1/2 exp. of gas. Appx, \$50. Call 760-1280 or 7647-1510 before 4:00 p.m. Ask for Debbie.

Need A Ride? Leaving on or about April 28

TRAVEL OPPORTUNITIES! FINAL NOTICE! Call Albert at 441-4340 for more details. Airline tickets - Student discounts.

Mr. Spock, we need to find those gravity boots to clear Captain Kirk's name. Scorry, I've called off the march for them. We have something more important to look

Mr. Spock, what's that? TO THE N.Y. BROTHERS

The more I study, the less I recomber?

CONCERNED STUDENT, We know who you agel (Ms. Wolfe) LOVE, RANDOM VIOLENCE

REAL MAN: Keep writing personals. I'm interested, REAL WOMAN

Pieceaset I'm whining againt

something soon!!

MS. JUNGLE JIM, You will never know just how much I appreciate our friendship! Thanks for always being there to help keep me in line! We are just OUT OF CONTROL! Let's plus

KAPPA PLEDGE CLASS. We know it's been tough lut we are so happy to have you all as sisters! Congratulations!
LOVE FROM YOUR THETA PHI SISTERS

HEY 3RD SOUTH Jonlan (Junn): Keep on hangin' tough. Get None (Mike): Keep on trying. Richie Rich: Metal sucks, rsp rules! Blockhead (Blauner): You are Viper king. Moonie: Iron Maiden sucks. Homer: You have a cool roommun. Todd: You have "Pooksy" Patroll

CLASSIFIED AD POLICY

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.

I am driving to Wisconsin after finals, and have room for a rider. If you need a ride to Wisconsin, or somewhere along the way, call Dun at 238-1894.

Become a published author in the Spring. issue "BLUE BOOK OF SELECTED POETRY" Published by Freedom Publishing. For more information, please send self addressed STAMPED envelope to: FREEDOM SERVICES 1455 STRADA D'ORO VENICE, FL 33292 DJ MURRAY

Going to San Fransico, leaving around April 24, must be willing to pay 1/2 expenses and do some driving, Contact Box 5953.

MONEY FOR COLLEGE Non-qualifying guaranteed money scholarship search. Call or write: Continental Marketing Inc. Howard or Bonny Lucy 3 Iroquia Trail Ormond Beach, Fl 32174 (904) 672-7448

+ Personals

TO THE WORLD'S BIGGEST GOONBOOGER: 've got a tear in my beer....Shhh! Don't tell TO THE HORNY REDHEAD IN 2ND

Can I make an appointment for some lass night hallway fon and games, if you know what I mean! (Oblid Abibl) MR. BLUE TROJAN

Q: What has Mr. Sliws (the good and jolly doctor) done for us lately?

TO "EQUUS" CAST, I know it wasn't YOUR fault. Don't take it AC LOVE, THE CRITIC

AVION STAFF It's been a trip. See you all in the big white house with those nice padded walls.

TO STEVE AND THE LOUNGE LIZARDS Guys what can I say but Bonnail! Joegun is happy now that he has lounged with the lizards once again. Stay cool & hope to see you next SkyFest. HSSSSSS1 JOE "DRAGON" DEELBY

WERU: IT WORKS!!! THE PREZ

Q: Why do they call you tout? Ar Isn't it obvious! FIN A BUBBA

I want you, I need yes, I miss yes, I have you, I adore you, I worship you. . . Clet the picture? After all these years we've been together, I can't believe that you're going to graduate and leave see. I'll miss you providly.

I know you love me. Just accept the fact that I don't love you and go me much the rest of your life. Stift friends? GEORGIE

CAMIESTUS

Half to you look of Disgree. You are the YOUR LOYAL SPOORES

CRESTIL MEYERS

I wish I could find the month to let you know how much you must to me and bego much! care. Have a great minimum ATRIBNIS

Here's your name in the paper and by the way, you rolly improved those kids on the toes. It's been good surving with year and may God bless you advanced the trade year.

Give me more of your cream. PETERMAN

PERCENTERICITY. You are the Nissendo god of 3rd Souds Keep playing, who knows, maybe out day you can give librar on the Missemby Healing

PHOENIX BABE, TOAST, DE It's been cool. See ya most your! Parry on. BUURMAN

YOUR SUMMER/TRIP HUDDIES

BLÖOD

Take care and are you around THE OTHER ILLOOD

Looking for travel partner for a wild weekund at Kings Dentision this minutes, blus mijoy. Mickey Moure and building and cashed No monds or a prestquentell Manthers soud

You are on my mind, this morning and every misming, afternoon, and might. Here a nice sometics timak. BR "Big Baby"

Afternoon must enable a six very my three!)

Where is that plg named Chip anymay?

Hey Unit everyone which and the name Tampicos? With all that phoule and house parts, I give them a month before they to

This has been a very interesting year together

I frage you enjoyed to a countract fact lines.

You can't fell union you but the communicati talur the net by the free place.

I've got the sways and means to free

KINGS DOMINION

So you want a partner for a nacation, both? How about his on the beach, quitt illiams by candialight for two, then a long, siers borie massage? I think you know who I set, j'est think about it. You also lesses where to find, me. Hope to hear from you room.

To the hard manual Army midder remain to be MS 201-03. You've senturing! Sheather,

The rest of the MS 201 dr class.

Libiok we need to send Houns back to MAW

I care! I always will. I had a great time, I'd do is again in a heart best. You know how I feel,

and I know hose you do. Let it happen. Love

Wall, our year has past. Have a good signment. I'll man you must I love you.

Glad to see y'all made it book asfe lest work! It was such a plantum meeting the three of you I've almost groom all the beverage out of my shoes.

Well, you're not so bad for a girl. And I don't think year're a B_____ Jun kidding, OK?

You are worth the wait, You are my joy, You

SPERKY.

see my comfort, You are my strength, You are my house

Despite the ups and downs, I had a fantastic

P.S. Surry, that was my hund.

year. Thanks for everything.

Life is good! Since dreams are coming true, what do we dream shout now?

Congress on gening a job. We haven't talked a for this enmester, but I'm still going to miss you a let. Too had we didn't heak the record.

they doubt flave from this summer, I be arcanal, seme Has time same Has charmel.

I have you had you'll love to look that stop that's been following you around.

TO MY PAVORITH GREEK

ALPHA NEE We've crane this far, lex's continue to strive to be the first. Can't wall 'lll next atmester.

Group potter studying for finals this year?

Three still smer's say jobs! Q.IID.

Have him being the new C.HD. I'm sure you'll realow that gots, there are no many pecks that go along with it. Don't forget to throw around. torior "slaukers" every new and then to get

these allow moving-OLD C.IID. ATTIDCTION ALL As this is the but home of the Assoc for the Upring summiter, classified ada will not run

postd the first issue of Summer A. If you do

fill out any more ad cards. If you wish your

and with to rue your ad then, do not bother to

all to run in the next ratue, please come up and fill out a part. The Avion will come out burry two works during the aimmer sumerurs, so please keep that in mind as

All hall the Seriors of 1992! We might not be the final or the brightest afnes, but at least SENEGRES 1992

Chiya libe you could provide antificial respiration to wounded people just by enting on their faces. (By die way, enjoy your antidays, looky goyl...)
HE WHO'S OONNA STRAL YOUR CHILLIOTIBNO

NEED A PLACE TO STAY?

Our Place is Available IN MAY! Share a spacious three bedroom apartment for only...

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* Mine Have Elegan J. 13. work expension with in your

Data General 3868X Laptop

Calvin and Hobbes

by Bill Waterson



by Gary Larson



WRY BOTHER? ON THE RARE OCCASIONS WHEN YOU DIGH WHAT THE PROBLEM IS, YOU USUALLY MAKE IT WORSE AND HURT YOURSELS IN THE PROCESS!

NOTHING HAVE A

GOOD TIME

WHATS SO

FUNNY P



LOOK, I DION'T DESIGN THIS OUTER! IT'S PRACTICAL!

HEY DAD, HOND

YOU GET YOUR HEAD STUCK W A BOHLING BALL P HA

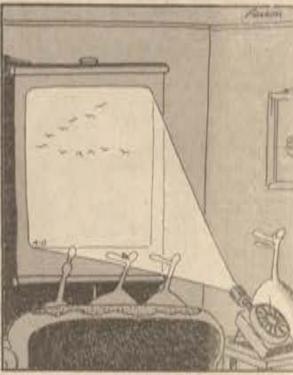




THEM BOTH WITH MY



As Nyles left the safari club, his stomach suddenly knotted up. Foolishly, he had ignored the warnings not to park his Land Rover in this part of Tanzania.



'And here we are last aummer going south... Wait a minute, Irene! We went north last summer! The stupid slide's in backward!"





REALLY P

TAF DECIDED

I BELLEVE IN

ASTROLOGY AND

HORDSCOPES



YOU BET. IT ONLY MAKES

SENSE THAT EVERY FACET

OF OUR DAILY LIVES SHOULD DEPEND UPON THE POSITION OF CELESTIAL BODIES

TARW OF

ARE YOUR

"KEY POLICIES

OF MILES AWAY.

TAHT THRE

WREAT F TODAY

CITAR NO

TO GET MY

WAY! THE

HEAVENS

DECREE IT











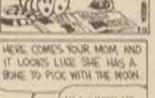
IC MON.



















"Holy cow! What's gotten into our La-Z-Boy?"

Medleval chicken coops

Dance of the Beekeepers

NO HOMEWORK POLICY DID SHE ?

YOUR MOM DIDN'T CARE

SANCTION OF YOUR

MUCH ABOUT THE LUNAR

MI HORDSCOPE SAYS, "TURN-

ABOUT MEANS CIRCUMSTANCES

IN YOUR FAVOR . ASSERT VIEWS

IN CONFIDENT MANNER. LUNAR

CYCLE HIGH, MANY OF YOUR

KEX BOTICIES MILT BE WATENENTED



MY HORDSCOPE SAID



DO HOME WORK

ANY LYNON

LET'S GO OUT AND PLAN!



Mister Boffo

by Joe Martin

Mother Goose and Grim

by Mike Peters











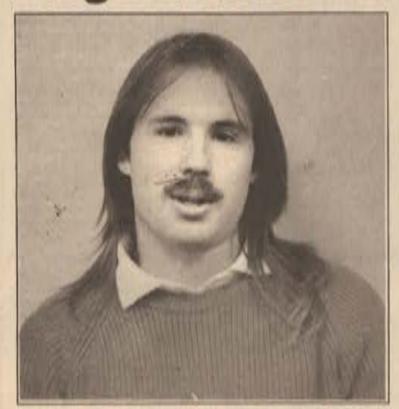








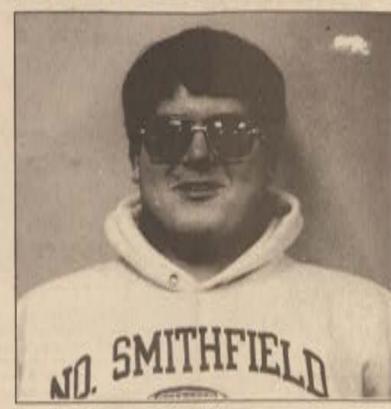
Vote Roger Harnack



Community News Editor

Roger has been one of the greatest assets the Avion has ever had. If elected he would make the best Editor-in-Chief ever.

Vote Roland Houle



Business Manager

Roland has been one of the greatest assets the Avion has ever had. If elected he would make the best Editor-in-Chief ever.

Vote David Fekke

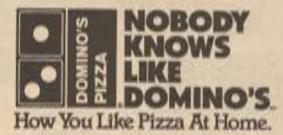


Aeronautica Editor

David has been one of the greatest assets the Avion has ever had. If elected he would make the best Editor-in-Chief ever.







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