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Inside Section

Notices.....B7

Discovery completes Mission to Planet Earth

by Jose Luis Vasquez Delgado, Jr. Space Tech. Writer.

Last Thursday space shuttle Discovery took to the skies after a short delay. Thousands of crowds conglomerated along the Titusville shores and the Eastern seaboard to take a look at the ever majestic spacecraft as a lifted a five men crew along with the observatory, known as UARS, one

of the most elaborate and expensive environmental research satellite to be launched. and designed to scrutinize the alarming shrinkage of Earth's ozone layer. It weighs 14,500 pounds and costs \$740 million, including operating expenses and data analysis.

Discovery thundered away from its seaside pad at 7:11 p.m. EDT, flames spewing from its twin booster rockets. The 100-ton spaceship pierced a hazy sky as it daned out over the Atlantic Ocean and up the East Coast, People along the Eastern scaboard, especially in the South, had a rare opportunity to see the ascending spaceship. Discovery's course upon liftoff was up the East Coast as far as Cape Hatteras, N.C., where the shortly after liftoff shuttle arched sharply out over the Atlantic on its way to a 336-mile-high orbit.

The abuttle's solid rocker boosters dropped

empty into the ocean as planned two minutes into the flight. The ship reached orbit 6 1/2 minutes dater on the thrust of three main engines. Scientists watched breathlessly from Kennedy Space Center as Discovery sped out of sight with the first craft to the launched in NASA's Mission

to Planet Earth, a decades-long probe of the really a super flow for the team, been waiting for," said Don Wuebbles, an satmospheric scientist who has been working on the project for 13 years, "After 13 years, how can I put it in words?"

We're at a point in human history where we 1/2 years.

can affect the global environment, and we shouldn't fly blind on that," NASA's chief scientist Lennard Fisk said.

Discovery's launch was delayed 14 minutes because of a brief interruption communications between the launch site and Mission Control at Johnson Space Center in Houston, Launch director Bob Sieck resumed the countdown engineers determined the loss did not involve orbiter equipment. The only other anag occurred

when a flash evaporator system used to dispel heat from the orbiter shut down. A second system was activated, and the astronauts later got the

primary one working. Sieck said it was one of the smoothest shuttle countdowns ever. The hardware glitches were benign, and as you know, the weather cooperated," he said. "It weather really put the finishing touches on what had been

In addition to checking the ozone, the observatory will make the first measurement of stratospheric winds and monitor the atmosphere's chemical composition, solar energy and energetic particles. The mission is expected to last at least 1



T-plus 6 . . .

Space Shuttle Discovery lifts off its pad into the blue sky above Kennedy Space Center last Thursday. Its mission was to release a satellite that will watch the ozone layer.

> The five astronauts focused their attention on several experiments. Sunday evening, after awaking to flight day four, the crew began work on a second round of tests on fluid-filled cylinders being shaken to see how propellant-like liquids withstand weightlessness. The experiment was temporarily halted later and the crew unexpectedly lowered the shuttle's orbit a little more than a mile.

> The maneuver was required after ground controllers determined that the path of a spent Soviet rocket body would pass too close to the shuttle later in the night. NASA flight rules dictate that other spacecraft, or debris, cannot come within 1.6 miles above or beside a shuttle or 4 miles in front of an orbiter.

> Discovery return to Kennedy Space Center at 2:09 a.m. EDT this morning, five days and seven hours after blasting off from there. It is the first time a shuttle has landed at Kennedy in the dark.

Third Orbiter Processing Facility opens at Kennedy Space Center complex

by Roland Houle

Space Technology Editor

Kennedy Space Center's third and newest Orbiter Processing Facility was officially dedicated at a special ribbon-cutting ceremony last week. OPF Bay 3, formerly the Orbiter Modification and Refurbishment Facility, is located just north of the Vehicle Assembly Building in the Launch Complex 39

The new processing facility for Space Shuttle orbiters is the same size as its two counterpart OPF bays - 197 feet long, 150 feet wide and 95 feet high. Adjacent to the said Bean, high bay is a two-story, 87,000square-foot support area

The first floor contains processing shops, logistics areas, flight hardware storage areas, responsible for relocating and locker rooms and broakrooms. The second floor provides office space for 180 people.

Like Bay 1 and 2, OPF Bay 3 will be used for post-flight deservicing, testing, modifications and preflight processing of space shuttle orbiters. The basic structure, completed in 1987, has been used primarily for off-line orbiter inspection, modification and repair work. In 1988, upgrade to full OPF flight processing status was targeted for early September, 1991, an ambitious goal attained through careful planning and teamwork.

"We had a good team that worked together smoothly and made it happen," said Design

the neighborhood of \$170 million, but the total equipment outlays for rest came when Shuttle activities and meet agency goals. were curtailed unexpectedly at Vandenberg Air Force Base in to be processed in OPP Bay 3. The

crack at any shuttle specific processing in preparation for its equipment, Bean went on to next flight, STS-42, scheduled for explain, "and we ended up with \$40 early next year,

millions worth of GSE equipment that would have cost considerably more if purchased today."

Additional savings of \$6 to \$7 million came in the form of shuttleunique work platforms also obtained from the California site. These work platforms were cut into 12 pieces, shipped to Florida by barge through the Panama Canal and reconstructed at KSC, "When we welded the pieces back together, they were within an eighth to a quarter inch of their original location, quite an accomplishment,"

Conversion of the OMRF to OPF status began in 1898, at a cost of \$85 million. Lockheed Space Operations Company at KSC was installing the high bay platforms and GSE from Vandenberg Air Force Base, In addition, Lockheed performed checkout of the entire facility and validated and activated all supporting systems.

Bay 3 differs somewhat from the other OPF bays to improve processing activities. It has an expanded low bay for support services, and it is designed for easier flow of ground support equipment in the high bay. Major improvements include a new, builtin, computerized cooling system for the orbiter's environmental control system and new hydraulic pumpers that interface with the orbiter.

To increase equipment lifespan, Engineer's Jim Bean, Bay 3 project these next generation pumpers are located inside a support building Equipping an OPF bay costs in instead of outside in the weather as hefore.

The completion of a third Bay 3 came in considerably lower. processing bay gives managers Said Bean, "About \$114 million in more flexibility in planning shuttle portable ground support equipment processing timeliness. Studies have (GSE) already on hand is shared indicated that the number of between all three OPF bays, leaving processing bays should be one less us about \$16 million worth of GSE than the number of orbiters in order we had to purchase outright. The to maintain an adequate launch rate

shuttle has been towed to Bay 3 for The Air Force gave NASA first postflight deservicing and

Discovery will be the first orbiter

NASA robot takes first steps toward Mars

PITTSBURGH (AP) - A six- parking lot legged walking robot that is the *Torcrunner of machines destined for this weekend.

the Ambler performed "very, very cramped for space and we don't well," said Carnegie Mellon really get to exercise it." University researcher Reid Simmons. But the robot experienced computer problems Sunday and "Timped back" inside.

"multimillion-dollar joint project of challenging," Simmons said. With NASA and Carnegie Mellon's computer software making Robotics Institute, was unveiled in decisions, the robot took about 100 *May 1990. Its movement at the time steps and covered about 80 feet, he was operated by controls outside its said.

fast December Jur NASA, the machine "We think that within the walked in a mant sandbox decade, the technology Strewn with could be brought to the boulders. The Ambler was able to sense

h

Surrounding lerrain. and controlling software still was by an external source. Simmons said

burside the robot. The Ambler outside for the first time—the robot will be autonomous. and let a computer inside the robot

The five

astronauts

focused their

attention on several

experiments.

"It performed better than it has ever really performed indoors. We Mars took another step toward space - were extremely pleased with the results," Simmons said, "When In its first outdoor test Saturday, we're indoors, we're kind of

Saturday, the Ambier got to 'romp around" for about five bours.

"We peppered the parking lot with wooden boxes and ramps and The 12-foot-tall robot, a things like that to make it more

The robot was left outside In an indoor demonstration done Saturday night for another test Sunday. Computer

> problems prevented the Ambier from repeating impressive performance and it said.

-Simmons

point where a mission

would be possible."

weekend

This weekend, researchers took place the power source on board so

Scientists are

because they provide

a great deal of insight

into the workings

of the galaxy...



Martian robots . . .

In the future, robots may be the explorers of the Red Planet Mars. The robotic technology needed has already been demostrated to work.

"limped back" into go on its own," he said, "We think its quarters in a large that within the decade, the the robot to operate much more garage. Simmons technology could be brought to the point where a mission would be vehicles, like the Viking, Simmons possible."

Blocided where to place its feet. All experiments, the robot was powered. Mars, but is a prototype for future, and let it go. machines that will travel into space. missions to Mars is that it could reach areas inaccessible to wheeled "At that point, we could basically vehicles and too dangerous for

Its internal "thinking" will enable independently than previous space said. Scientists will be able to The Ambler itself will not go to transmit instructions to the Ambler

When the Viking was sent to the next step in its development is to. The robot's advantage over manned. Mars, it had to receive commands from scientists on Earth one at a time, Simmons said. Each message took about 15 minutes to span the distance between the planets.

Space news..



Spacelab Life Sciences-1 results to be released

Preliminary results from the Spacelab Life Sciences-1 (SLS-1) mission will be presented to the media this Thursday. Speakers will include Drs. Arnauld Nicogossian and Ronald White. The results will be summarized and brief presentations on the science investigations will be presented.

SLS-1 is the first Space Shuttle mission dedicated to research in the life sciences. The Spacelab module was launched aboard Columbia on June 5,

President Bush addresses students from NASA

President Bush spoke to students across the United States yesterday from NASA Headquarters in Washington, D.C. "Launching the School Year with President Bush" was broadcast live on NASA Select TV with President Bush and NASA Administrator Richard Truly.

Truly participates in America 2000 teleconference

NASA Administrator Richard H. Truly participated with U.S. Secretary of Education Lamar Alexander in a 5-minute conference call yesterday, focusing on the nation's goat of being first in math and science.

The call was part of Secretary Alexander's daily effort to link a national network of support for America 2000, the President's education strategy. Truly discussed NASA's education programs and how they support the President's education strategy.

Galileo spacecraft speeding towards asteriod

More than 200 million miles from Earth, the Galileo spacecraft is cruising at roughly 1.5 million miles a day towards an approaching asteriod named Gaspra, Galileo is six weeks and less than 20 million miles away from its encounter with Gaspra,

Ulysses continues on rendezvous with Jupiter

The Ulysses spacecraft returned to normal maneuvering after a week of data acquisition while the spacecraft passed behind the sun as seen from Earth. Today, Ulysses is approximately 750 million kilometers from Earth, traveling at a heliocentric velocity of about 64,800 kilometer per hour. The spacecraft has about 1,9 million kilometers to travel before reaching its final destination of Jupiter.

Magellan working overtime

The Magellan probe orbiting Venus is still photographing the surface of the planet. Its official mission is over, but the probe is still working

Control its movement across a cut the tether completely and have it humans. Meteorite almost hits 13-year-old boy

INDIANAPOLIS (AF) - Excuse 13-year-old ayon've got a very unusual piece of outer space in someone's feet," Sour hands.

The youth was standing in his front yard in pound, and is the size of the teen-ager's fist. It is

Noblesville, about 10 miles snorth of Indianapolis, when the Incicorite plummeted to earth Interested in meteorites Subout 5 feet away. The event happened about 7 p.m. on Aug.

"I was amazed," Spaulding "Said." It just happened all of a ssudden. I heard a real low whistling noise and saw a rock

staying there.

Will me. said Spaulding also can feel lucky for witnessing kind of like burnt coal." a rare astronomical event.

Brodie Spaulding if he feels lucky. When a "Only about one of these falls on every million touch with the Purdue physics department, which Indicortie whistles by your head and lands at your square kilometers on the earth's surface each weet, not only has your life been spared but year, and it's very rare to have one fall at

The meteorite weighs 483 grams, or just over a

the 10th meteorite ever found in Indiana, and only the third to be witnessed falling, the professor said.

People always ask if anyone's been killed by one of these," Lipschutz said. "As far as I know, nobody has been, but Brodie could have been in danger if it hit him."

An Egyptian dog died when it was struck by a "I feel pretty lucky, especially because it didn't meteorite in 1922, but that was the only casualty Lipschutz said he knew of. Spaulding said the Purdue chemistry professor Michael space rock was warm when he reached over and Lipschutz, who specializes in meteorite analysis, picked it up. It also was "dense and solid and

Spaniding suspected immediately it had come unique chance,"

"It is an unusual situation," Lipschutz said. from another world, and a neighbor put him in in turn referred him to Lipschutz.

Scientists are interested in meteorites because they provide a great deal of insight into the workings of the galaxy, Lipschutz said.

Lipschutz said the warmth of the meteorite was unusual and its particles will yield information about the spectrum of solar radiation for the past few months, something usually learned from satellites. Knowing the average flux of solar radiation is useful in planning the path of future spacecraft.

The meteorite will be taken to Johnson Space Center in Houston for analysis, Lipschutz said. He said he hopes Spaulding will agree to give the meteorite to the Smithsonian Institution in Washington, D.C., where it would be available for researchers to study further.

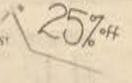
"This is an interesting opportunity for a 13year-old," Lipschutz said,"The results will be written up in a scientific journal so it's really a



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Scandinavian Airlines receives new aircraft

The MD-80 offers

greater efficiency.

increased capacity.

and quieter

engines.

by Dave Boswell Staff Writer

(SAS) took delivery of its 50th latest exchange in the long relation-McDonnell Douglas MD-80 twin jet. ship between SAS and McDonnell transport on August -

1991 from McDonnell Douglas in Long Beach Califorma.

Among an audience of SAS penionnel, Douglas Workers and journalists from the United

SAS executive vice president and capacity and quieter engines. chief operating officer, accepted the McDonnell Douglas,

The airliner in the SAS red. white, yellow, and blue color Scandinavian Airlines System: scheme was the centerpiece of the Douglas

> The 50th MD-80 is one of the 73 new MD-80x SAS has ordered

The MD-80 in a twin turbofan airtinor developed from the DC-9

MD-80 States and Europe, Kjell Fredheim, offers greater efficiency, increased

> Fredheim addressing the audience company was formed in 1946."



Up, up and away...

Scandinavian Airlines System has now taken delivery of its 50th MD-80 from McDonnell Douglas.

SAS has been the launching cus- past tifty years, SAS and its parent aircraft from Bob Hood, president of noted that "Douglas Aircraft have tumer for a number of Douglas airlines have taken delivery of more the Douglas Aircraft division of been in the SAS fleet ever since our designs, including the DC-8 Super than 200 McDonnell Douglas air-63 and the DC Series 21. Over the craft.

Rockwell awarded contract

...1,200 JTIDS

terminals will

Marine Corps and

Army...

by Saskia Visser Aeronautica Writer

the U.S. Air Force Systems Com- transmitter,

The JTIDS is a highly sophisticated system which provides real-time, group. Terminals will be provided

jam-resistant, secure transfer of combat information and relanavigation persed battle ste- for Air Force, Navy,

The JTIDS terminal is the most sophisticated data -

link system yet deployed in terms of duction requirements. the amount of data it can handle, the provides. Via a common communications link participants continuously update information by exchanging voice and digital data.

The Collins Avionies and Communications Division's \$59 million Class 2 and 2H terminals.

The terminals are to be installed Rockwell International has been in F-14, E-2 and E-3 aircraft, and on awarded a 70% share of JTIDS shipboard. Each class 2 terminal (Joint Tactical Information Distribut consists of three fine replaceable tion System) terminal production by units, namely a digital data procesthe Electronic Systems Division of sor, interface unit, and receiver-

The class 2H terminal requires a 1,000 wan high power amplifier

for the U.S. Navy and Air Force, as well as for the United Kingdom. The United between widely dis- ultimately be needed Kingdom terminals will be used to support ITIDS integration into Royal Navy ships and shore stations prior to full pro-

The U.S Government estimates number of functions it performs and that up to 1,200 JTIDS terminals the level of anti-jam protection it will ultimately be needed for Air Force, Navy, Marine Corps and Army applications.

Delivery of the first production terminals under this contract are required by March 1993.

This is the largest single JTIDS not-to-exceed letter contract contract to date for the division, and involves 70 percent of the Low Rate the company's second JTIDS prince Initial Production (LRH) Lot 2, contract for full terminal production.

Delta Air Lines offers new scholarships

by Frances L. Cozza Aeronautica Editor.

Delta Air Lines has donated 4 52,000 scholarships and internship to students who are attaining a Bachefor of Science in Aviation Technology at Embry-Riddle Aeminautical University.

The scholarship amount donated is twice that of last year. Delta will again offer 12 internship opportunities to students who are eligible.

Students applying for scholarships and internship must have completed Airframe and Powerplant training and be enrolled in the avionics technology program.

Scholarship applicants must have a cumulative grade point average of 3.0, an excellent attendance record, and have a U.S. citizenship.

If selected, students will alternate one semester co-op at Delta with two semesters of study at Embry-Riddle for a total of seven semesters work/study.

Upon graduation, students may be provided the opportunity for full employment at Delta.

Students who are interested in applying for a scholarship should contact the Office of Financial Aid information on the internship.

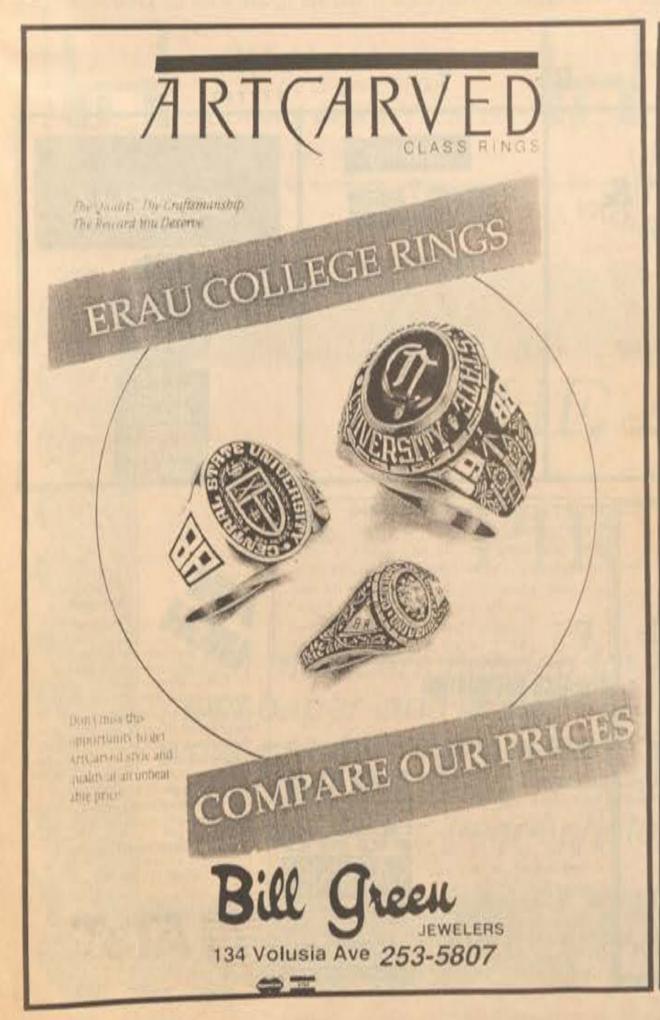


Delta Gives Back...

Delta Air Lines will offer new scholarships and internships to Embry-Riddle students and the Career Center for further this year. The amount of the scholarships has been doubled since last year.



Rejum this form to the Assor. The Assor will sendantly than a senser from all correct submissions. Wirmers will be informed on the Friday following the current resid of the Arnes. The winner will receive a fine submarine tandwish of their choice, from Helly Bult Subway. The Awart staff, their families and provious winners are not eligible. The works winner was Mark De Santis who correctly identified the Aurtialia 60222.





788-8414

MECHANICAL TECHNOLOGY

Race track to be built

Mechanical Technology Writer Daytona Beach has long been known as the "World Center of Racing." The Daytona International Speedway is bost to many different types of racing, among them the National Association of Stock Car (NASCAR).

International Motor Sports and the American Motorcycle Association

(AMA). FASCAR and Smyrna Speedway. The Daytona complex won't be built on any area seems to have it all. However, there is one popular type of racing that has been excluded; drag racing,

Drag racing is a relatively inexpensive form of racing that anyone can be involved in. The Daytona Beach Drag Racing Association (DBDRA) has pursued the project DBDRA.

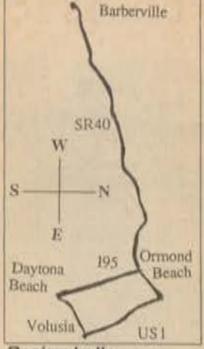
of organizing the construction of a drag meing track. The DBDRA has plans for a multi-function racing complex to be located 1-1/2 miles west of Barberville on SR 40. The new complex will include motocross, drag strip, road race course, sand drags and mud drags.

According to Ray East, President of the DBDRA, it will Association ... will take four take four months to build (IMSA), the Sports Car months to build the drag strip. The rest of Club of America (SCCA) the drag strip, the complex will take about three years to com-

Ray east plete. At this time, geolo-

gists are taking core summud bogs have been staged at New ples to ensure that the 300-acre potential sink-holes. There are also no bids let out on the construction.

> While this track is 30 miles away, it is closer than Orlando Speedworld. (61 mi) and Gainesville (129 mi). The Projected cost of the complex was undisclosed, according to the



Racing hell... Prepare for the new drag track in 1992.

How to prevent rip-offs on repairs

by James Johnson

Mechanical Technology Writer Repair rip-offs, Can you avoid letting them take you for a ride?

O.K. you just had a close call, you almost hit that cop car because your alignment is off, so you decide that maybe now would be a good time to have it fixed. You are afraid that some mechanic is going to try assume that they will: a classic sconario is "yeah, we're going to have to replace that too." Although the nems in question probably will need to be replaced, they usually will last for quite a while yet. There are two basic ways to insure yourself against getting ripped-off. One good idea is to take the car to a shop that deals exclusively with the type of repair the car to at least two shops; if they probably will not have unnecessary

that moonlights as a mechanic, it cases they are not lying, they can would still be a good idea to get a second opinion from at least one repair shop.

Ask friends who they would recommend. They usually know a few rip-off artists as well as a few reputable shops. If you are totally in the to rip you off. You would be safe to dark as to where to go, or you do not agree with your friends choices, call around. Once you get on the phone make sure that you know the exact nature of the repair. If you are not sure exactly what the repair is in technical terms be prepared to explain the symptoms in precise terms. Do not say "my car ratiles can you fix it, and how much will it cost?" If you are not prepared to that you need. The other is to take answer questions like where the noise comes from, what it sounds agree with one another, then you like, how long it has been doing it, etc. They will most likely tell you repairs leaving a vacuum where that you will have to bring the car in

your wallet used to be. Even if you for a mechanic to look at it before are lucky enough to have a friend an estimate can be made, in these only guess what the problem might

While on the phone make a note of who has the best attitude, should a problem arise they will be cause to work with, not to mention more willing to help. In other words in friendly rather than cheap, you'll be grateful for it. Most of the small shops will give you a break on the price as well as discussing alternatives to expensive dealer parts Many parts are available that last as long as the originals and cost a fraction of what the dealers parts cost Small shops are usually in business because the guy that is doing the repairs enjoys the work,

in brief, shop around for the best people and prices. Pretend you are knowledgeable when dealing with shops. Remember it doesn't have to be a nightmare.

Subaru debuts luxury car: the SVX engine produces 230 hp and 224 lb units that have low-speed valves

by Jon Eichelberger Mechanical Technology Writer

That is right, its a Subarp! The new SVX is Subaru's latest car to bit the streets, intended on breaking its ties from Subaru's old image of boxy four wheel drive cars that were simply built to last. Now Subaru wants to enhance its image by adding style, perfor-

mance and luxury. The SVX fits into the sport/luxury class of automobile. The SVX was a concept show car two years ago and Subaru basically changed little between the show and street version. The exterior styling of the Suburu is eye catching with its low hood line, glass-to-glass canopy top, and its window-within-a-window design. The window design is to improve aerodynamics and to give a bigger door opening. It also cuts down on wind buffering at high speeds. All this gives the SVX an impressive 29 drag coefficient. But there is more to the SVX than good looks.

The SVX is powered by an all aluminum horizontally opposed six cylinder that displaces 203 cu. in. It has a double overhead carn with

ft of torque. Subaru has two other versions of the crutine, one that has 270 hp the other at 300 hp. These are not available, but could be if SVX sales are strong enough and they see a market for it.

wheel drive to give the SVX great traction and all weather capability. The SVX comes only with a four speed automatic, with a manual for next year's model on the way. The transmission features a computer that controls a hydraulic multiplate clutch in back of the transmission, which distributes torque between the front and rear wheels. In dry conditions it puts 60% torque to the front wheels, when The torque band is broad, making wheel spin occurs the computer acceleration from any speed strong distributes torque to the wheels that aren't spinning. The final drive ratio of the drive train is 3.5511.

The chassis includes four wheel independent suspension, with four wheel disc brakes with a four channel anti-lock system. A drum within the rear disc is use for the parking brake. Wheels for the SVX are 16 in, alloy coming with VR225/50 Bridgestones. The front and rear four valves per cylinder. The struts are low-pressure gas-charged sion is its worth the money.

that control damping forces.

This adds up to a car that has good power range along with a suspension and drive train that can handle it properly. While driving the SVX the first thing you notice Subaru put in its advance four when you get in is the roominess, and the molding going across the middle of the window. I always noticed it but it didn't obstruct my view. The steering is precise but easy to turn. The cornering is excellent with minimum body roll, and the suspension gives a nice comfortable ride. Acceleration with the four speed automatic is quick, but also smooth (although I'd rather be driving a manual). and quick.

Performance of the SVX isn't super car standard, but this is the mildest form of the engine. The SVX hits its target market, and comes from a company with a reliability as its trademark. It's hard to tell if Subaru can sell this car that goes for \$28,000 (although this includes everything mentioned in this article and more). My impres-



Flat 6-203 cu. in

Aluminum heads

230bhp/5400rpm

224h-lb/4400rpm

max rev...7000rpm

electronic port

compression 10:1

dohe 4 valve/cyl

bore.....3.81in.

stroke 2.95in

injection

and block

Acceleration/sec.

0-30.....2.8

0.40.....4.0

0-50.....5.3

0.60 7.3

0-70.....9.4

0-80....11.6

0-90....14.2

0-100.18.2

1/4 mi.....15,4

top end-143mph

at 92.5 mph

Tiny but Mighty ... SVX shows that Subaru got their reputation un-Justy. A foregn luxury car that competes with a Cadilac's price (left). An opposed 3.3L that pushes 230 bhp (right).

The bottom line (adapted from Road & Track) Engine Transmission

car menuraciona ser a primer banispo del del ser-

.0.64:1.....esi4890rpm/143mpb Differential gear......3.59.1

Ratio

2.79:1.....

..rpm/speed

...6400rpm/43mph

.1.55:1.........6200rpm/76 mph

Type......4sp Automatic (all-wheel drive)

Miscellaneous turning circle-35.40

skid pad....0.85g dalom....,60.2 mp weight.....35801bs Braking stopping distances 60-0....134 ft. 80-0 ... 2290. Price 525,000-528,000

LT BETTER Sunday COLISEUM IT IS A MATTER OF IMPACT THURSDAY 2 FOR 1 DRINKS NIGHT SURF THESDAY THE WELL AND WILL MANATTES OF FIGUR DRINKS EVERY HOUSE, ON THE HOUSE 22 FENY DRAFT RECK A ROCK TO PAPORTED RELEASE THE DWATE IN MOMENT MENDERS THE CAME T:4:) MHCHHID HER WEEKING ANXBELDED A THE MITTER DRIVES



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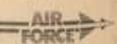
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ware faster than people can

Data Tech Editor

One of the most frustrating recent trends introduced by software manufacturers is the practice of advertising products that are no where near available for sale.

Lucisfilm is one of the worst offenders in this category. Their product, Secret Weapons of the Luftwaffe, has been awaited for nearly a year now. The situation seemed to ameliorate itself last November when magazine ads trumpeted the impending arrival of the prodnet. Well, it's now August and the company keeps the delivery date on the software one month away.

Spectrum Holobyte is similarly guilty with the supposed release of F-16 Falcon 3.0 and A-10. These two products have been awaited for as long as Secret

Weapons of the Luftwaffe, and ads frequently appear as known about recently-and hopefully this means it is well. The ultimate tease for F-16 is now circulating. almost finished. Computer Shopper is full of compa-This tease is a semi-functional demo of the purported - nics offering it "at a rock bottom price" even though a

sive demo, the program only whets one's appetite even more for this long overdue game,

Not just game manufacturers are guilty of this conspiracy to confuse, Microsoft led vendors to advertise its DOS 5.0 product. as early as January, even though the product did not appear until much later,

Right now the hottest in nonexistent software is Wing Commander II. This product just became widely

masterpiece of flight simulation. Although an impressoral will reveal that it is not available.

Another hyped product that is sure to at least be much later than expected is OS/2 2.0. This program has been discussed at length in this publication, and it still has not bit the presses, so to

mall in their upgrade check... The almighty Windows 3.1 that has been rumored to be

ready almost since the first one was released is also in heavy beta testing right now. This program offers questionable additional functionality at least in the beta

It seems like sequels are the most enterly awaited programs, and they almost always turn out to be late. even though, Norton and Central Point (PC Tools) seem to churn out new versions of their popular software faster than people can mail in their upgrade check, some vendors seem mired in the abyss of time.

Speaking of Microsoft and delays, two words commonly used together, what ever happened to Flight Simulator 5:07 Once the unequivocal leader in technology and total sales, its archaic EGA graphics and highequipment requirements seem to place it in limbo now,

Slipping delivery dates are likely to grow as computers grow more diverse and programs become more

Modems may subsidize Baby Bells

by Joe Cumbron Data Tech Editor

FCC officials are now preparing to consider a proposal that would boost the fortunes of the socalled "Baby Bells" at the expense of those people who use their phone lines with a computer modern.

Saying they need the money to underwrite the increasing cost of local phone service, phone companies such as Southern Bell are asking the FCC to allow them to add fees of as much as \$5 per hour for the use of public phone lines for data communi-

This "tax" would affect the users of Compuserve, Prodigy, Genic, as well as all modem users who admit to having a modern to the phone company. The reasons for taxing these users is paper thin,

Just as Rockwell and Twincom have begun selfing 9600 bit per second modems for less than \$299, the phone companies are wishing to more than offset these savings with increased phone bills. The real issue concerns whether modem users cost the phone companies any more than regular voice conversations. The answer to this question is no.

In fact, there is no difference to the phone company between a voice or data call.

This charge would be purely price discrimination. Why then should modern users be forced to subsidize the entire remainder of the phone system? There seems to be no valid reason.

One thing is certain, using a service like Prodigy for one hour a day could cost in excess of \$1800 per year in addition to its \$240 per year subscription

Although these ludicrous amounts being tossed about in Congress are almost sure to be reduced, they might not be without a little political action, so Are modems and FAXes equal? else it could happen to you.



write those letters protesting this possible action, or Congress may try to raise modern user fees to a point that would make them prohibitively expensive to use

Aviation Software!

Just \$4 a disc!

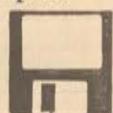
Over 200 MSDOS programs including:

DUAT Decoder, AD note lists, Flight Planner, RNAV Program, Flight Simulator add-ons, Logbook programs, FAA MELs from C-150 thru 747-400, Airfoil design, Space Shuttle tracker, flight club contracts and billings, LORAN coordinates, ground schools, BFR review, weather forecaster, weight & balance, charter trip quoter, SDRs, 737 EFIS tutor, more, more, more! (even a few games)

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THE AVION PHOENIX

Staff members needed for all aspects of production of a newspaper and a yearbook. People needed who can write or who can not write (you will learn). Just stop by our office. The office is located on the second floor of the Student Center. Learn photography from a pro.

+Autos for sale

Must sell: '81 Toyota Tercel: 5000 OBO. Call Omar 274-2209

For sale: "All House Civic 109,000 miles. Roommate mental for 3 by / 1 hade house 2 good condition \$1000. Must sell fast: Call-258/2848 after ain

1987 Dodge Charges, Illack sharp car. Runs great, good condition \$3,000 highway miles 53200 Call 254-50nn

Pur cale, 1973 Pennisa LaManz - This car is awcannel 350 V8, power steering, sir, AM/FSI carrette, super wide Firestone 225's.

Furnale: 1979 Damm 310 GX, Air, new tires, note great, no rutt \$500 OHO Call Greg 257 (5050)

1984 Ford Thunderbird, Aura, V6, loaded, runs and looks great Asking \$2,150. Call Stots at 780-4899

1968 VW Rug. White, sporty, new freeway transmission, full front lits, slarm, wheels, loss of extra parts. \$1800 call Kirk 767-0289.

1986 Remark Alliance, 1.71., A.C. Radio. 5700 ORO. Call John at 255-7943 after 7 p.m. or wecknish

85 Honda Harricane CBR600: 12,500 miles: Fresh paint, tiers, broke pade, etc. Looks and rans excellently. Registration paid until August 92, betmet and gloves included. 52800 OBO Leive a message at 672-0669

1986 Kawasahi FZ 750, 14,000 miles. Will shi wheelse, have taket to prove. Asking 52500. Call 258-1538

1988 Ninja 750R. Black, showroom new! Only 6,600 miles, includes tank cover Asking \$3,600. Call Bob at 760-1895.

1986 Kawasaki Ninja 1000R, Mani sali. Vatters and Hours pipe, very fast. Looking for arrious buyer: \$2500 OBO. Call Miler at 252-

1988 Suruki CISXR 1100. Extremely clean, not beaten on linke. Yoshi pipe. \$4,200 OliO 13K mitra. Call Kirk at 767-0289.

+ Roomates & Rental

Roommate wanted to share 2 bedroom / 2 bath condo in Policin Bay: \$292 month plur. 1/2 unities, Call 760-8637

blocks from beach, near Scatteneer Clubs.

Publy furnished, loaded kinchen \$235/mm ntilities included. Call Brian at 257-2841

Roommate needed for 2 bedroom/ 1 1/2 both townhouse. Fully furnished (except for 2nd bedresses) all security deposits paid, 10 minutes from ERAU, nice sees off Dunlawton, Female preferred - references \$1,000 OBO Contact Neil, 258-7603 or box. needed, \$250 a month > 1/2 antitios. Call Lori at 760.981

> Room for sent. Room in a three bedroom house, Pelican Hay, own spot in 2 our garage . washer, dryer, \$323 month includes everything. Call Ned Gereado at 756-1916.

> For rost big clean room, furnished, has of parking, quist older beautiful house. All utilities paid by landiady, seeking sober nonsmoker clear gentleman, quiet type, ideal for study, \$200 month, \$100 scenity deposit. Call evenings 258-9501

> Female roommate needed your own bedroom, share buth with one other girl. Washer/dryer, furnished, \$250/month plus 1/3 utilities, new smaker please. Call Jennifer at 767,652

+ Misc. for sale

Why rent when you can own? \$10,000 down, 153 White Fawn Drive owner Jinancing easy qualify - 56 minutes from sampus; 1984. new 2 bedroom/2 bath; includes all appliances including washer/dryer, community pool - \$467, Monthly payment; Asking 553,500

\$10,000 down, 134 Springwood Drive - in fabulous Pine Lake - whim brick 3 bodroom/2 bath; Florida mom; family room; 2 car garage; aximms non -qualifying mortgage Arking \$86,900

\$10,000 down, 1006 Calls Grands - sessons non-qualifying mortgage 3 bedroom, 2 bath; 2 car garage; possible 4 bedrooms; asking 568,000

510,000 down, 144 S. Halifax Drive, Unit 39, owner financing - savy qualify - vacant quick occupancy, 2 hadroom partially furnished; beachride; Riverfront pool

For appointment to see or for more information, please call listing agent Jo Ann Matthews at 788-8250, or please ask at Huston realty, 788-1700

For rale: RCA VHS CamCorder \$1200. Value for \$600. Call Omar at 274-2209 or fewe merrage in box 2246

Bike for sale: 10 spd Schwinn Varsity Deluce. Good shape, n's the most aconomical stuns around and them's always plenty of parking on campus! Comes with a U-lock. \$75 takes it OBO. Must sell immediately! Call Brad at 255:5962

Furniture for sale: full sized bed - I year old. still under warranty, mattress, hosspring and frame for \$210 OBO. Must sell immediately! Also I new wooden barstools w/cloth seats beign 520 takes both. Call Brad at 255-5962

For sale: Tortoise shell Ray Ban Wayfares. Perfect condition - rurally worn. \$40 non-neg. Call Cheryl at extension 6939

19" Black and white TV - 329, Call Rob 760-

Matching sofa and loverest for sale, Good condition \$230 Call 257-3005

Bar for sale: solid wood bar, codar finish with solid ook background \$100. Kitchen table and

4 atrairs: glass and wood somp \$100. Marris coffee table and and tables: make offer, Call 245-4351 and leave message.

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

For rale: Sanyo single casseste player for entenaisment center or sterco. Good condition 550. Must sell. Call 258-2848 after

For sale: 2 single mattresses / box springs: sets, excellent condition, \$50 each. Rust \$125. Call Kirk at 767-0289. cofored queen headboard, \$75. Call Tom at extension 6601 or 1-738-9731 after 5pm.

For sale: king size water bed. Very good shape. Asking \$150. Dinem set: glass table, 4 chairs. Excellent condition. Must see in appreciate. Contact Kevin at 756-1957 or 756-1494. Leave message.

Catculator, HP 12C Financial - Excellent pondition, \$50 OBO, Call 904-789-3888

Single bed for sale. New mattress, good frame and box spring. Headboard with two small cabineta. \$100. Call 253-7683.

+ Miscellaneous

Home weight sett Gym Pac 2000; wall mountail weights. In good condition: Asking

For sale: Technics CD player and double deck, \$200 for both. Also David Clark H1040 headset. Original paid \$285. Asking \$200. Owned for only 21 year. Call Jose at 23%-

SWM. 20, friendship/relationship with mature yet fun woman. I'm not desperate, just looking for por Christmas break - midnet boking for ride "special someone". Leave marrage at Box to Maine, New Hampshire, at Massachusetts.

Mohi time! \$90 per hour, includes dual time and fuel. Airplane based at Daytona Beach Airport. Whether you are looking for an additional rating, want to build time or sightsee. Fly in a 1980, IFR equipped, low- YO MARTY time Beecheraft Duchess, Bast rates anywhere! Call John at 253-9607, write box

Speaker box and amp for auto Jensen 12" speakers and home. Pyramid amplifier (400) waits), speakers (5325 new) and amp mounted on back (\$225 new) for \$350 OBO. Call 756-2165

USAIR round top airtime ticket - 5129, this side of the Mirrisippi or \$189, across the Mississippi. Call 239 5156 and leave your name and most importantly your Box #

Lawn to fly! Get your priors licitates or continue with your flightfraining. Quality instruction at low rates, amoralt metal 536.5 per hour "block time". Train at a local airport-Contact Jack "CPII" at 756-494 or leace

Found - Black wallet in From G-105, on 9-9-91. Comact Roland Vegiand, il' #004 at ext. KNDO

French lessons. Able to converse in aix months. No book needed! Taught by native French speaker. Special price: \$7.00 per hour. At least 2 hours/ wack needed Call Ms. Nagy at 258-5901, evenings.

For looking for a ride to Pinthurgh over the Thanksgiving break. Can leave on the day before if needed Will split cost of get and driving. Comact Rob at Box #523#

SCURA DIVE, quality instruction for PICARD beginning and advanced divers; See Ian at the SCUBA Club meetings or call 761-2021

Wanted: Intil vocalist for rock band. Have: shows set up in Orlando for UCF Framewity. panini

Wanted spar main splitters value for Volkswagen Bag radiates also one set of header bearings for Wankel engine. Comuci-Box 6977

I buy cars and tracks. Impact fee no problem. Call Rob 760-1895

Do you need help with tome AS murine? 1 can help. Call Jose at 238-3303

Will pay 1/2 gas and drive. Call Brian as 760.

+Personals

used to like AC/DC, but now I'm not to

Who's gonn take it in ET404 - will it be the Blue mam or the Gold ream? STAY TUNED

BUNNY BUNNY Keep your head up and shor't go looking for any grenner sarrot patabat. I love you HONEY BUNNY

PICARD AND RIKER

This is Snagglfashtelli of the Cattian Vessel Quickclaw, Starffeet officers do it on impulse 12 Is this Federation Policy?

Joseffiversion sucket We must be get us Aian so we can make ing slips kill small blinking

SLEEPY THE SHACKION

You may think you've had pulling h C'x and all, but we all still know that a twenty five push-up ing like yourself is nothing all that great! Get your Bloodwings! SLEEPY THE PARATROOPER

SNACOLUFLASHTELLI

This is a priority one channel and nonauthorized transmissions by non Starfley officers is strictly probabilitied

PICARD TO RIKER Stop playing with the computer on the halfedock and recome your position in the Beritge.

Looking for female any age may or martial status. I am an equal opportunity ampliant For a meanless love affair with me strings attached. Willing to marry a faculty member for free untion

Contact Keith at flox D-228

FICARD OUT

RICK LittlEscant you YOUR TIDY HOWL INTEND

LIMA CHARLIE

Thank you for allowing not to most the countincredible women in Dectain. This Like is for you. Have you found her eightune? SHERRA ROMBO

Innovation

(continued from page A3)

was the development of financing information and options for students who may not necessarily qualify for aid. This allowed the Pinancial Aid office to no longer have to publish "no-need" letters which inform applicants that they do not need aid according to present requirements; it allows the Financial Aid office to respond positively to those applicants with these financial options,

Emmert Lowry gave a presentation on "Automated Budget Development Process for CCE." This computer project has Center Directors of CCE locations fill out forceast information at their CCE Center on Lotus 1-2-3 and send the spreadsheet information into Daytona Beach for centralized processing. It greatly reduces the time it takes for centers to develop their budgets and for the main offices here at Daytona Beach to compile the budgets.

Finally, Kathleen Citro of the References Services department in the library presented "Bibliographic Instruction Program." This program using video conferencing.

instructs students on how to use the library and find the information they need without being frustrated or too shy. Dr. John Williams, Vice-President, Academics, asked, "How do the students like it?" She responded that at first students feel apprehensive and afraid of using the library and listening to the information presented, but once the information becomes useful in actual situations, their attitude changes.

Bibliographic Instruction Program, ing homecoming on November 9. HU 122 and HU 221, In HU 122, basic fundamentals of using the card catalogue and where to find information is presented. In HU 221, requirements are given.

eight review sessions a year at the Daytona Beach campus, three at Prescott and at least one at a CCE location. Sliwa said at the conclusion of the presentations that he was Christmas list). very proud and impressed by these accomplishments. Additionally, he stated that in the future he would like to broadcast the presentations around campus and the community

The Counseling Center is offering appointment with the Counseling a free four week behavioral change group. If you have a bothersome October 3 to talk about the group. habit like smoking, procrastination, low motivation, tardiness,

Center between September 30 and

The "Kick-A-Habit!" group will be meeting weekly for four 2-bour anxiousness, overeating or anything sessions from October 7 through

along those lines, set up an the 28. Group size is limited.

Career

(continued from page A3) boards to files, CPC Annuals, and schedules. Peterson's Guides. Third, attend both job search seminars.

completed by Thanksgiving, interviews, Third, continue to update tials at the Career Center, Fifth, Interview. Two courses are targeted by the attend Alumni Company Expo dur-

wardrobe (include needs on Pathfinder jobs newsletter,

notices. Fourth, attend Career Day Center know that you're employed. on January 23.

newspapers and journals for vacan- discouraged too soon.

cies. Fifth, visit the Career center to read vacancy notices, check bulletin boards for on-campus interview

For March, send all remaining letters and resumes out. Second, make For November, have your resume follow up phone calls to arrange Second, continue to research and list Job Search file and check bulletin potential employers. Fourth, open boards, Fourth, make appointment your Job Search File of your creden- with the Career Center for a "Mock

For April, arrange and carry out interviews with employers. Second, For December, have 20 potential research companies with whom you employers listed with name, title, will be interviewing (research files address, and phone number, Second, at the Career Center can help). identify entry level position with Third, sent thank you notes (within more advanced techniques along each employer. Third, establish a two days after interview). Fourth, with some detailed referencing network of people who know you Update Job Search file and check on are looking for a job. Do not forget campus interview schedule. Fifth, President Sliwa plans to hold to use the help of ERAU alumni, complete post interview summary Fourth, find a resume service or forms and discusa with Career learn word processing in the com- Center staff. Sixth, before leaving puter lab. Fifth, assemble interview campus, sign up to receive the

> For May, make follow up phone For January, write a draft of cover calls after interviews. Second, letter and review with the Career update Job Search file with your Center. Second, send letters and new address and phone number. resumes to top five employers. Third, consider offers made to you. Third, begin regular visits to the Fourth, accept a position. Fifth, Career Center to review vacancy enjoy your new job, let the Career

> A search may take more or less For February, send 10 more let- time. Continue letter writing until a ters and resumes. Second, make position is accepted. Surveys of our phone calls to be sure resumes are graduates indicate that some of the received. Third, keep resume and most productive job hunting gets transcript updated. Fourth, read done after graduation, so don't get

SAA TALENT SHOW

Activities. Drop off applications to and Student Activities. Student Activities by Sept. 23

What would you do to win a Auditions will be held on Sept. 27 in reserved parking spot on campus? the J.Paul Riddle Student Center. Enter the SAA Talent Show, Pick Sponsored by Student Alumni up applications at Student Association, Traffic Safety Office,

University Institutional Self-Study

The Final Draft of the Self-Study the situation into compliance is now available for internal review and staff. Later this year, the Steering Committee will proceed January 1992.

College Delegate Assembly of the Southern Association of Colleges statement in the Criteria, the compliance. When non-compliant, a

Should statements in the Criteria are by Embry-Riddle students, faculty, advisory and not intended to beprescriptivo. A suggestion is appropriate to advise action with editing and printing of the corresponding with a should-Final Report which will be sent to statement. The Self-Studythe Southern Association of Committee have gone a step further Colleges and Schools(SACS) in by offering proposals which aresuggestions concerning situations The foundation for the Self-Study SACS hasn't directly addressed in-Final Draft Report is the Criteria the Criteria. A copy of the Criteria For Accreditation approved by the of Accreditation will be provided

with each draft report for reference. Your assistance in this crucial and Schools. For every must internal review of the Self-Study Steering Committee, Room 287, University is required to assess and Student Center Daytona Beach, document compliance or non- must be completed by October 15. Your contribution is appreciated and recommendation is required to bring considered vital to the Self-Study

Blood Drive

There will be a blood drive sponsored by Sigma Chi on Thursday and Friday, the 19th and 20th of September.

DONATE BLOOD.

New Club Info.

Attention students: If you want to start a new student organization, the deadline is October 11, 1991. See Student Activities in the J. Paul Riddle Student Canter for Details.



A BEE LANDED

OK LETS FLUSH IT

by Gary Larson

Calvin and Hobbes











JUST STAND STILL AND

by Bill Waterson

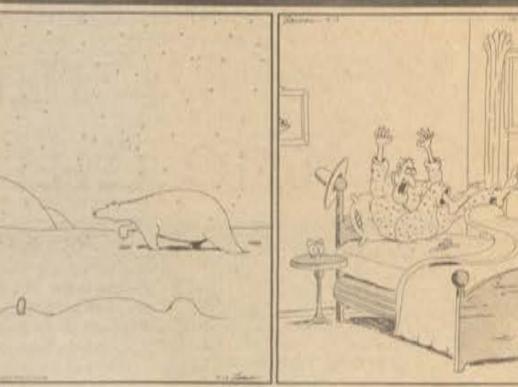


HE IMAGINED IT



Far Side

In its typical defensive behavior, the arctic clown remained motionless and concealed —betrayed only by its nose.



The Farmers' Mafia sends Henry a message



EVERYBOOK I KNOW HAS

THEY CAN WATCH ASSTRANG



BUT MET I HAVE TO WATCH DUMB ON SUMMER RETEATS!

CAPRAGE CHER AND OVER



HOW CROSLES WE MISTREM YOU CALVE







'OK, let's nee ... That's a curse on you,

a curse on you, and a curse on you.



Roommates Etvis and Salman Rushdle aneals a quick look at the outside world.



MISSE



FLUSHI



WHEEE! HA HA HA!







At Mount Stoogemore

Mister Botto

by Joe Martin

Mother Goose and Grim

fipecial commuter lanes

by Mike Peters







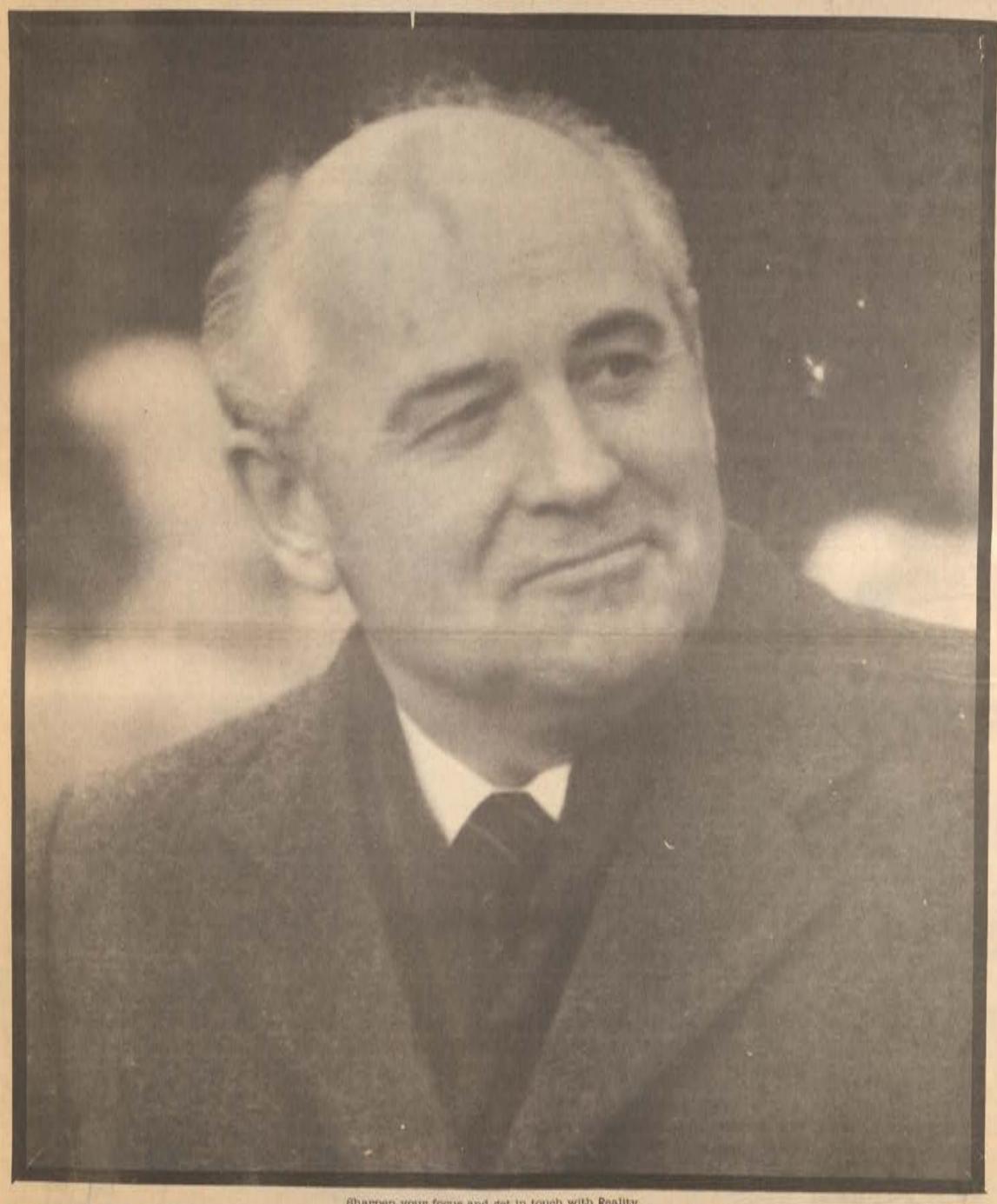








Certain things make the difference...



Sharpen your focus and get in touch with Reality

COLISEUM

DANCECLUB

176 NORTH BEACH STREET DAYTONA BEACH TOMORROW'S MUSIC HERE TODAY