

7-22-1992

## Avion 1992-07-22 (B)

Embry-Riddle Aeronautical University

Follow this and additional works at: <https://commons.erau.edu/avion>

---

### Scholarly Commons Citation

Embry-Riddle Aeronautical University, "Avion 1992-07-22 (B)" (1992). *Avion*. 950.  
<https://commons.erau.edu/avion/950>

This Book is brought to you for free and open access by the Newspapers at Scholarly Commons. It has been accepted for inclusion in Avion by an authorized administrator of Scholarly Commons. For more information, please contact [commons@erau.edu](mailto:commons@erau.edu).



# SPACE TECHNOLOGY

Aeronautics .....	B2
Classifieds .....	B7
Comics .....	B6
Data Technology .....	B3
Diversions .....	B4
Space Technology .....	B1

## Space Shuttle Atlantis prepares for July 31st flight

### Tethered Satellite System prepares for its first operational space shuttle flight

By Joshua S. Mussaf  
Space Technology Editor

Kennedy Space Center - When the Space Shuttle Atlantis takes to the sky next Friday, July 31, it will be carrying a multitude of scientific experiments. Atlantis will stay at a 185 statute mile altitude for seven days. The primary objectives of this flight are to successfully deploy the European Retrievable Carrier (EURECA) payload, and to perform the operations of the Tethered Satellite System-1 (TSS-1). The secondary objective of this flight is to perform the operations of the Evaluation of Oxygen Interaction with Material III/Thermal Energy Management Processes, the IMAX Cargo Bay Camera, and many more smaller experiments.

Atlantis will be commanded by USAF Colonel Loren Shriver, making his third shuttle flight. Marine Corps Major Andy Allen will serve as pilot, making his first flight. Mission Specialists will include Claude Nicollier, a European Space Agency astronaut making his first flight shuttle flight; Marsha Ivins, making her second shuttle flight; Jeff Hoffman, making his third space flight; and Franklin Chang-Diaz, making his third space flight. Franco Materba from the Italian Space Agency will be a payload specialist aboard Atlantis.

**EURECA**

EURECA is a free-flying, reusable platform that is launched and retrieved by the space shuttle for the European Space Agency (ESA). The primary goal of the EURECA program is to provide frequent flight opportunities at a low cost. The payload consists of a retrievable, reusable platform capable of six to nine months operation and has a five mission or ten year lifetime.

The first EURECA mission will be primarily a microgravity mission specifically for material processing and life science payloads. EURECA can also serve as a test bed for in-orbit demonstration of technologies such as interorbital communication, rendezvous, and docking.

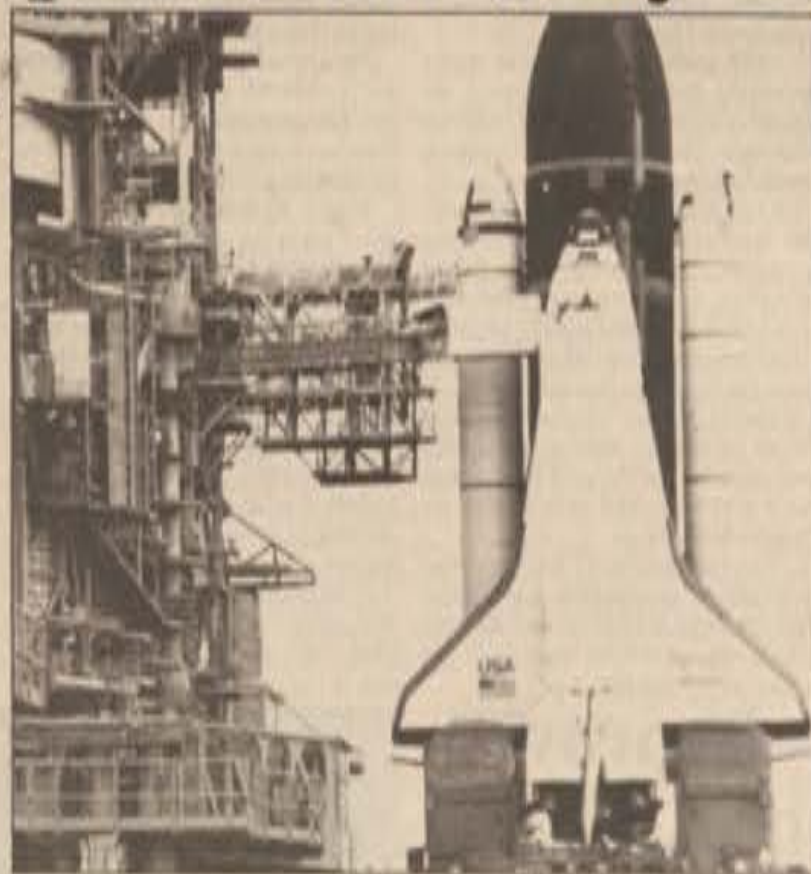
Upon achieving orbit, EURECA will be lifted from the payload bay by the Remote Manipulator System (RMS) and released. The EURECA propulsion system is then activated to move the platform to its operational altitude of approximately 270 nautical miles where the experiments will be operational for six to nine months. Once the experiments have been completed, additional thruster firings will lower EURECA to rendezvous with the orbiter. At the present time, STS-57 has been scheduled for the retrieval mission. After retrieval with the RMS, and stowage in the payload bay, EURECA will be latched down and

returned to Earth for refurbishment and relaunch.

The primary Tethered Satellite System-1 (TSS-1) mission objective is the engineering checkout, demonstration, and evaluation of the TSS deployer and satellite system performance. The lessons learned and data obtained from this part of the TSS-1 mission will be directly applicable to subsequent flights of the TSS and to the development of second generation tethered systems. A complement of nine experiments have been selected for the mission, to further understanding of the electrodynamic processes taking place in the Earth's upper atmosphere, as well as the dynamic forces in effect in a tethered satellite system.

The TSS-1 mission will deploy an Italian satellite upward with respect to Earth from the shuttle attached by an electrically conductive tether. TSS-1 utilizes a Kevlar tether with a conducting copper core to facilitate this study. Movement of the tether through the magnetic field of the Earth induces a high-voltage electromotive force (EMF).

The TSS-1 control and data system includes the equipment to interface with the orbiter satellite, and ground systems. Following deployment the orbiter S-band Payload Interrogator provides control and



The Space Shuttle Atlantis undergoes final launch preparations at launch pad 39-B.

receives telemetry data from the satellite.

The tether itself will provide the structural connection between the deployer and the satellite. The diameter of the cable is approximately 0.1 inch, or approximately the diameter of a match stick.

ICBC  
The IMAX Cargo Bay Camera (ICBC) provides professional level

cinematography for high fidelity documentary filming of space shuttle operations. The 2,000 feet of film in the camera provides ten minutes of filming.

STS-57 will be the 12th flight of the Space Shuttle Atlantis and 49th flight of the shuttle system overall. The launch window on July 31 opens at 9:56 a.m. EDT and extends for two and one half hours.

### Atlantis to undergo OMDP in California

By Joshua S. Mussaf  
Space Technology Editor

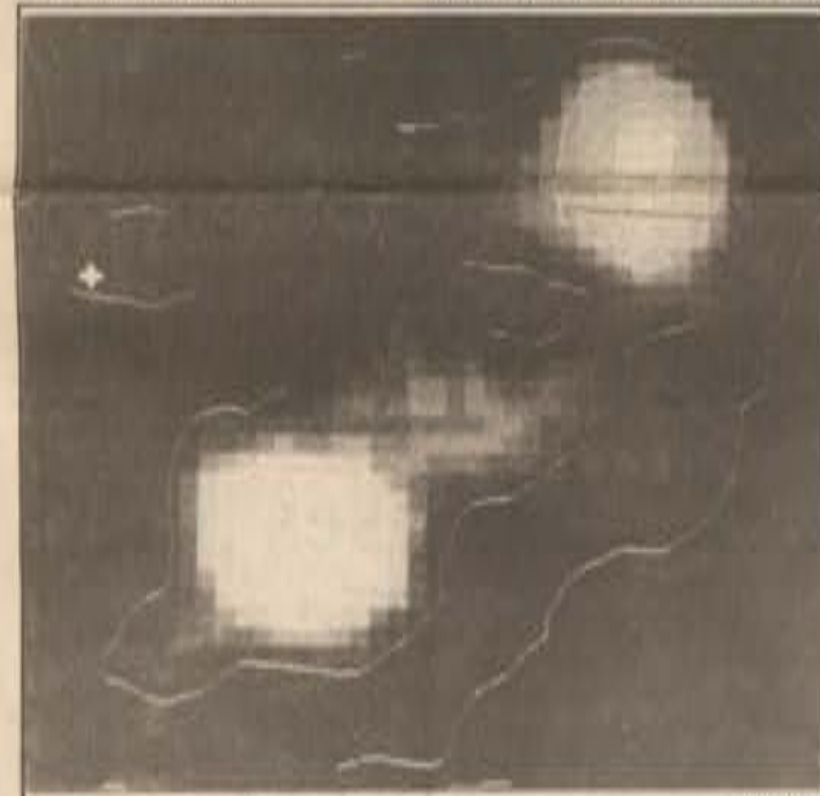
The Space Shuttle Atlantis, OV-104, will be returning to the Rockwell facility in Palmdale, California, following the STS-46 mission for modifications. While at Palmdale, Atlantis will undergo its planned Orbiter Maintenance Down Period (OMDP), a series of equipment upgrades and inspections performed on every orbiter vehicle about every 3 years.

Discovery, OV-103, currently is undergoing its OMDP at the Kennedy Space Center. (KSC) Atlantis also will be modified with the same extended duration capability demonstrated by the Space Shuttle Columbia earlier this month.

Shuttle Program Director Thomas Usman said the decision to perform the work at Palmdale will permit the work forces at KSC to focus on preparing space shuttles for flight.

"This means the KSC team can devote 100 percent of their efforts to safely and efficiently carrying out the [launch] manifest," said Usman. "We estimate it will require about a year to modify Atlantis and we won't have to tie up an orbiter processing facility for that time. This results in a lot of flexibility in terms of processing the other orbiters."

see California, page B7



This image from the Compton Gamma Ray Observatory shows the resultant image of a solar flare eruption taken in the gamma ray sky.

## Neutron image of sun taken by observatory

By Joshua S. Mussaf  
Space Technology Editor

NASA's Compton Gamma Ray Observatory has taken the first image of the sun in neutrons. It is the first picture of any celestial object ever made with neutrons.

Neutrons are heavy subatomic particles without any electrical charge. Until today, all images of cosmic objects have been obtained with one or another form of light - for example, radio, infra-red, visible, x-ray and recently gamma rays (from Compton). Scientists now have a picture of the sun taken in the "light" of neutrons, which is matter rather than light.

"This represents a technological breakthrough," says Dr. Jim Ryan, "being able to capture an image through the transmission of matter rather than electromagnetic radi-

ation." Dr. Ryan is co-principal investigator on the COMPTEL experiment, one of four instruments on the Compton Observatory.

The image was obtained after the large solar flares (an immense explosion on the sun) of June 15, 1991.

The neutrons, created in nuclear collisions on the sun, were detected when they penetrated the radiation sensors in the COMPTEL experiment onboard the Compton Observatory and produced flashes of light that were recorded by photomultipliers in the experiment. The image was then constructed in a computer.

Solar flares have dramatic effects on the Earth's atmosphere and other aspects of the environment. The Compton Observatory was deployed from the Space Shuttle Atlantis on April 7, 1991.

## Spacelab-J readied for Endeavour's next flight

By Joshua S. Mussaf  
Space Technology Editor

Kennedy Space Center - When the Spacelab-J module was transported to the Orbiter Processing Facility last week and was carefully placed into the Shuttle Endeavour's payload bay, it marked the quickest such turnaround ever of a Spacelab module.

The Spacelab-J module last flew in January on the International Microgravity Laboratory-1 mission. Following that highly successful flight, the module was transported back to its processing bay in Kennedy Space Center's Operations and Checkout Building and readied for the STS-47 mission. The 19 week reconfiguration and checkout of the payload easily eclipses the average Spacelab module processing time of 24 weeks.

This new benchmark in payload processing is due largely to the dedication and experience of the KSC

payload team. By extending their hours and occasionally working straight through operations that usually would have been conducted in stages, the technicians and engineers achieved a feat that even they had doubts about.

STS-47 payload processing manager Glenn Snyder credits the accomplishment to the smooth working relationship between the American and Japanese engineers who readied Spacelab-J. "Everyone pulled together as a team, there were never any turf battles or squabbles over anything," he said.

Spacelab-J is a joint mission between NASA and the National Space Development Agency (NASDA) of Japan. The Spacelab payload consists of two dozen materials science experiments and 20 life science experiments.

The Spacelab payload and a seven member astronaut flight crew are scheduled to fly aboard the orbiter Endeavour in September.

## Network keeps satellites in contact with Earth

By Ronald Hess  
Aeronautics Editor

The European Space Agency's Giotto spacecraft was sent to intercept the comet Grigg-Skjellerup earlier this month. Giotto is a veteran of comet missions. It was one of five international spacecraft launched to intercept Halley's comet in 1986.

Giotto was launched on July 2, 1985, aboard an Ariane 1 rocket from Kourou, French Guiana. The closest approach to Halley's comet occurred on March 14, 1986. The distance was approximately 540 kilometers (335 miles). Giotto passed within 700 kilometers (434 miles) of Grigg-Skjellerup.

Giotto's rendezvous with Halley damaged the spacecraft's camera system. This prevented Giotto from providing images, but it was still able to explore the comet with other equipment. Giotto carries a magnetometer, energetic particle and dust-

impact detectors, plasma gas analyzer, optical probe and ion mass spectrometers. This equipment allowed the compilation of a portrait of the comet.

The Grigg-Skjellerup comet was first sighted in 1902, by astronomer John Grigg. Grigg viewed the comet while working in New Zealand. The comet was rediscovered and named in 1922 by astronomer John Francis Skjellerup, Skjellerup was working in South Africa.

The comet has an orbital tilt 21 degrees to Earth's. Its aphelion, the point in an orbit farthest from the sun, is 4.93 astronomical units (458 million miles).

Grigg-Skjellerup is a faint comet. It is more than 1,000 times less active than Halley's comet. It is less "dusty" than Halley, producing about one-tenth as much dust as gas, said Ray Newburn of JPL's Atmospheric and Cometary Sciences Section 324. Despite its faintness,



This 70-meter antenna at Goldstone and two other stations around the world keep communications open to satellites and probes throughout the universe.

Grigg-Skjellerup has been observed every five years as it passes inside the Earth's orbit. Newburn says that the closest the comet has approached

Earth in the 20th century was under 15 million miles, in 1947.

see DSN, page B7

## NASA extends Lockheed shuttle processing contract

By Joshua S. Mussaf  
Space Technology Editor

Kennedy Space Center - NASA has extended its space shuttle processing contract with Lockheed Space Operations Co. for an additional three years. The three year extension, through September 30, 1995, is valued at approximately \$1.83 billion.

The original contract was awarded September 23, 1983 and provided for a three year period of performance and four three year options. The present contract value for the 9 year period since the contract was competitively awarded in 1983 is approximately \$6.3 billion.

The contract extension will be performed under a cost-plus-award-fee agreement. Lockheed's responsibilities include complete processing services including preparation of the space shuttle vehicle for each unique mission and checkout, launch, land-



Lockheed is part of the Space Shuttle Processing Contract team.

ing and recovery operations. Lockheed also is responsible for operation and maintenance of related processing facilities and ground services at the space center.

## Geotail spacecraft prepares to explore the tail of the Earth's magnetosphere

By Joshua S. Mussaf  
Space Technology Editor

Cape Canaveral Air Force Station - Surrounding the Earth - and including its upper atmosphere, ionosphere, and magnetosphere - is an area called geospace. The Geotail spacecraft, scheduled for launch on Friday, July 24, is designed to

explore the tail of the magnetosphere.

The comprehensive instrument package of the Geotail spacecraft will investigate the energy dynamics (transport, storage, and conversion of energy) of the Earth's magnetotail and mid-magnetosphere region extending from near-Earth to distant-tail regions.

Along with Geotail, NASA's Wind and Polar spacecraft, to launch in 1993 and 1994 respectively, will provide an overlap in coverage enabling the missions to make coordinated science measurements in key energy source and storage regions for the U.S. Global Geospace Science (GGS) Initiative. In addition, major orbital changes can be

made for certain spacecraft, allowing study of the global behavior of the geospace system for many combinations of satellite orbit configurations.

The GGS Initiative will provide the Wind and Polar satellites and use data from the Geotail satellite to perform simultaneous and closely coordinated measurements of key

geospace regions, supplemented by data from equatorial missions along with ground-based and theoretical investigations.

The solar wind, emanating from the Sun, injects plasma into the magnetosphere and transfers energy to it. Several times a day the magnetosphere undergoes a disturbance

called a substorm. As the substorm grows, most of the solar wind energy is dissipated within the magnetosphere, ionosphere and upper atmosphere.

This disturbance ultimately causes auroral displays, the acceleration of charged particles to high energies, the emission of intense plasma

see Spacecraft, page B7



# American Airlines reports second-quarter loss

DALLAS (AP) — The parent of American Airlines reported a \$166 million second-quarter loss Wednesday, making it the first big carrier to disclose the financial damage resulting from a spasm of fare wars this spring.

The loss by AMR Corporation was partly due to special accounting charges, but it also reflected the impact of price discounting and the cost of a new simplified fare structure that American Airlines tried to impose on the rest of the aviation industry.

The company made an accounting adjustment to deduct \$109 million from its earnings after a project to link hotel, car rental and airline reservations systems collapsed.

AMR also put aside another \$9 million for its share of settling a price-fixing lawsuit brought against several carriers.

Without those one-time charges, AMR would have lost \$48 million during the three months that ended June 30. The full loss came to \$2.21 per share. During the same period a year earlier, AMR earned \$10.3 million, or 15 cents a share.

Revenue totaled \$3.59 billion, up 12.3 percent from \$3.19 billion in

the second quarter a year ago.

AMR Chairman Robert L. Crandall called the performance "an enormous disappointment" and blamed fare discounting for which the airline shared responsibility.

The company's loss was consistent with most industry estimates. "The second quarter is coming in as bad we thought it was," said Kevin Murphy, airline analyst at Morgan Stanley in New York.

AMR is the first airline to report quarterly financial performance. Its stock closed up \$1.375 at \$65.50 on the New York Stock Exchange Wednesday.

After American early in the quarter introduced a four-level pricing structure it said would be fairer and simpler, the industry became embroiled in several pricing battles.

Although Crandall blamed the competition for lowering prices, American led the fare-cutting in the most sweeping sale offered this spring, which it initiated in response to a more limited sale begun by Northwest Airlines.

The lower prices boosted the number of passengers during the quarter. But it lowered the amount of money earned for each mile the passengers were flown.

"Almost every day is setting a new record for the number of passengers we are carrying on our system," said Michael Durham, chief financial officer. "Nevertheless, those passengers are not paying us an economically rewarding amount of money."

He said the airline's revenues would have been "many millions of dollars better off" without the pricing turbulence.

"We think it's in public's interest for there to be some stability in the fare environment. That was the basic premise behind the initiation of the value pricing scheme," Durham said.

Higher jet fuel prices, up an average 4 cents per gallon since the first quarter, also boosted the company's expenses during the quarter.

In addition to the operating troubles, AMR's information services subsidiary, highly regarded for creation of the giant SABRE computer system and lucrative yield management software, stumbled over technological problems this spring trying to develop a larger travel reservations system.

"The system we set out to develop was very complicated," Durham said. "We thought we could do it and in the end the system did not do



American Airline's parent, AMR Corporation, has reported a \$166 million loss for second quarter revenue. AMR is the first airline to report its quarterly financial performance. The loss is mainly blamed on the fare undercutting that occurred. Other reasons for the loss of revenue include a 4 cents per gallon increase in jet fuel prices.

what we had sought." Durham said AMR would discontinue development of the system, called CONFIRM, with Marriott Hotels and Budget car rental. He

declined to say what payments the company may have to make to the project partners for the failure.

For the first six months of the year, AMR lost \$146 million, \$1.96

a share. The company lost \$185 million, \$2.76 a share, in the first half of 1991. Revenue was \$7.09 billion, up 19 percent from \$5.97 billion in the first six months of 1991.

## FAA certifies improved Beech Starship 2000A

By Ronald Hess  
Aeronautics Editor

The Federal Aviation Administration has certified the Beech Starship 2000A, which is featuring improved performance and increased range.

The 2000A is the newest version of Beech's all-composite business turboprop aircraft.

The performance upgrades for the 2000A allow increased flexibility to transport more passengers longer distances and to operate from shorter runways.

The improvements are listed as increases in ceilings for takeoff weight, payload and fuel capacity, a reduction in stall speed and a reduced sea-level takeoff field length.

The maximum takeoff weight has been increased by 400 pounds to 14,900 total pounds. The maximum payload for the 2000A is 2,277 pounds, up from the previous weight of 1,787 pounds.

The fuel capacity is increased to 202-pounds. The runway length

requirements have decreased from 4,093 feet at 14,500 pounds, to 3,854 feet at 14,900 pounds.

Other altered features include interior improvements. The 2000A accommodates six passengers, with increased passenger and baggage space. The new interior also includes an aft lavatory, with expanded space for passenger convenience.

Beech has already begun delivery of Starships with the upgraded interior. The aircraft will be designated as the 2000A model, and Beech will upgrade the aircraft with the new performance features.

The business transport is certified up to 41,000 feet. Beech's composite Starship is powered by twin Pratt & Whitney PT6A-67 turboprop engines. The engines are mounted in a pusher configuration. They are flat-rated to produce 1,200 shaft horsepower.

The aircraft has a stall-resistant design. This is accomplished by the Starship's tandem-wing aerodynamic configuration. Vortex generators along both surfaces grant low speed stability.



The FAA has certified Beech's Starship 2000 upgraded to the 2000A model. The 2000A is the newest version of Beech's all-composite business turboprop. Performance improvements include expanded payload, takeoff weight and fuel capacity.

The flight deck is fitted with a 14-tube all glass panel constructed by Collins Avionics. The panel provides the crew with an advanced navigation system.

The composites reduce weight and allow for improved performance. Beech engineers were able to design the Starship with the largest cabin environment available

in a business turboprop. The construction and performance of the Starship 2000A make it competitive with medium jets which cost twice as much.

## A-10 accident report delayed

PERU, Ind. (AP) — Release of an Air Force report on the fatal crash of an A-10 Thunderbolt jet last April has been delayed.

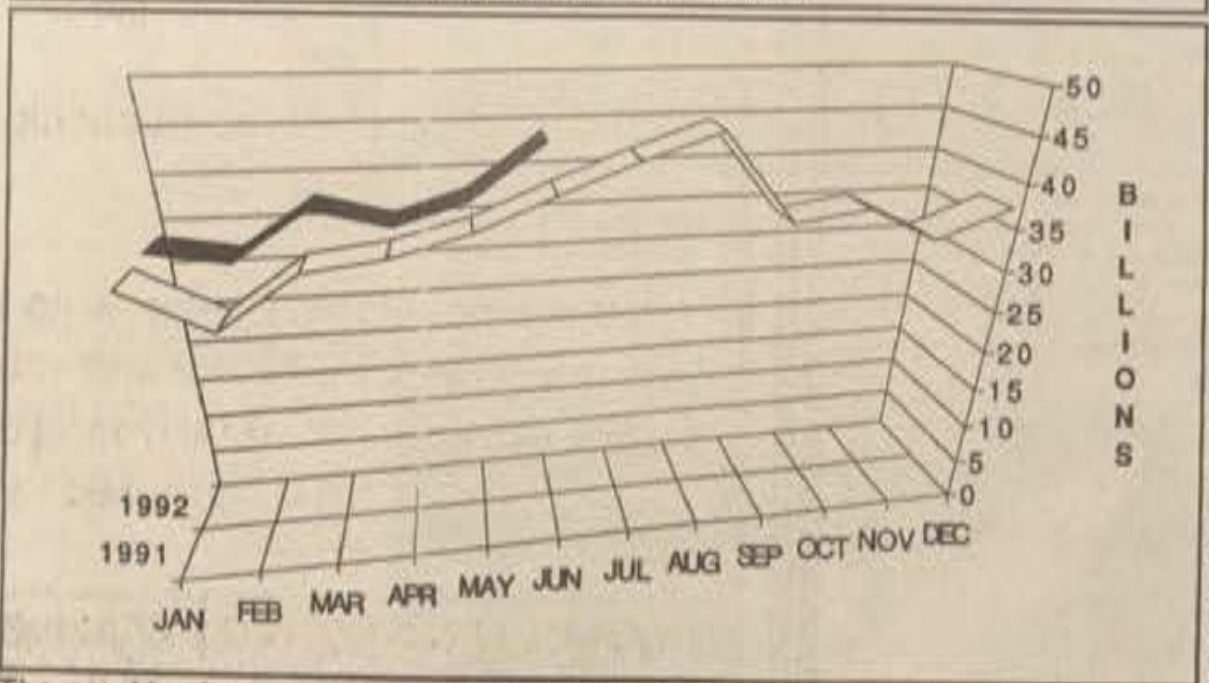
The report had been expected to be released today, but won't be available until after the first of August, pending approval by Lt. Gen. Michael A. Nelson, commander of the 9th Air Force.

The jet crashed April 11, about three miles south of Griassom Air Force Base in Indiana, killing its pilot, Colonel Marvin A. Evens, an Indianapolis physician.

Evens, 57, was commander of the 930th Medical Squadron and was on a routine mission when the crash occurred. Air Force officials have refused to speculate on possible causes of the crash.

Kathryn S. Boyce, an assistant Freedom of Information Act manager at Shaw Air Force Base, South Carolina, turned down a request filed by the *Peru Tribune* to see the report, saying the investigation is still in progress.

Revenue Passenger Miles U.S. Scheduled Airlines



The graphic shows the total revenue for this year and last year. Passenger traffic increased by 6.1 percent over last years total for passengers. The numbers used include both domestic and international services. The carriers included in this graph and report are: American, American West, Continental, Delta, Eastern, Northwest, Pan American, Southwest, Trans World, United, USAir, Alaska, Aloha, Hawaiian, and Midway. The numbers for Aloha and Hawaiian are estimated.

## ATA releases June airline traffic report

By Ronald Hess  
Aeronautics Editor

The Air Transport Association has released its airline assessment report for the month of June. The report states that airline passenger traffic increased by 8.4 percent in June, as compared with traffic during the same month last year.

Domestic airline traffic rose 9.1 percent to 32.0 billion dollars in June. Available seat miles increased by 2.0 percent. Passenger boarding climbed 10.0 percent to 38.7 million.

The passenger load factor for domestic flights averaged 69.4 percent last month. This was an increase from 64.9 percent for June 1991.

International traffic in June improved by 6.8 percent. Seat mile availability increased 12.4 percent. 3.7 million passengers boarded international flights in June.

The enplanement for international passengers rose 1.1 percent from last

year. The load factor averaged 68.8 percent. This was a decline from 72.4 percent for June 1991.

Examination of the first six months of 1992 shows a growth of 0.8 percent for domestic traffic. Available seat miles were up 1.6 percent.

Passenger enplanements for domestic flights rose 0.3 percent with 195.5 million passengers. The load factor for domestic flights fell to 59.9 percent for the first half of the year.

Revenue for airlines with international flights increased 23.3 percent to 60 billion dollars for the first six months of 1992. Available seat miles for these flights climbed 20.1 percent.

The number of international passengers rose 13.6 percent to 19.6 million customers. The average load factor for the first half of the year was 66.0 percent, an increase from 64.3 percent for last year.

# Controversial FAA proposal withdrawn under opposition

By Ronald Hess  
Aeronautics Editor

The Federal Aviation Administration has withdrawn a controversial change to air traffic control procedures.

At the urging of the Aircraft Owners and Pilots Association and its members, the FAA has dispensed with a ruling that would restrict issuance of Instrument Flight Rules (IFR) clearances to aircraft below FAA radar coverage or minimum IFR en route altitudes.

The change to the FAA Air Traffic Control Handbook would have prevented controllers from issuing an IFR clearance below the Minimum En Route Altitude (MEA)

or Minimum Vectoring Altitude (MVA).

Departures from airports without a published instrument departure would have to climb to those altitudes under Visual Flight Rules (VFR) conditions or would have to declare an emergency to penetrate IFR weather.

"This requirement, already published in the Airman's Information Manual, would have deterred pilots from seeking IFR clearances after being forced to lower altitudes in deteriorating weather, and would have severely impacted the utility of those airports without charted IFR departure procedures," stated Phil Boyer, AOPA president.

The FAA withdrew the action under "overwhelmingly negative"

publicity. In a July 10 letter to the FAA regional Air Traffic Divisions, FAA's manager of Air Traffic Procedures said, "We have met with both legal and operational representatives from the Aircraft Owners and Pilots Association... in an effort to resolve this issue."

"...based on the overwhelming opposition... and the detrimental impact (the changes) will have if enacted, I decided to withdraw these proposals completely," FAA's manager wrote.

**The FAA withdrew the action under "overwhelmingly negative" publicity.**

Initially, AOPA succeeded in getting the comment period extended by 60 days to July 31. Next, the association told its 300,000 members to write and call the FAA during extension to express opposition to the proposal.

Many of the letters that the FAA received were from aircraft owners and corporations. The commentaries focused on the fact that the new rule would result in a loss of revenue, aircraft and possibly businesses.

In the July 10 decision, the FAA stated, "We are receiving enormous amounts of correspondence daily (over 325 letters) voicing tremendous opposition to these changes."

AOPA's president remarked that the FAA legal department organized the rule change as a Catch 22 to pro-

tect the agency from liability when IFR clearance is issued to traffic below radar coverage.

Boyer also commented that, "under today's system, it is ludicrous to think that pilots don't automatically assume responsibility for terrain and obstruction clearance under these conditions, and that's the way it should be."

The purpose for the proposed Air Traffic Control Handbook revision was a result of the FAA being held liable for several accidents involving aircraft flying into terrain by IFR-cleared traffic. An example was the widely publicized crash of a business jet.

The aircraft collided with a mountain on climb-out from the San

Diego area. The accident killed members of a Country and Western band.

Martin W. Shuey, AOPA senior director-Air Traffic Control, believes that the ruling might prevent aircraft at low altitude from receiving IFR clearances to climb out of deteriorating weather. But Shuey thinks this would result in more terrain and obstruction accidents.

Despite publication in the current Airman's Information Manual, the ruling was not binding on controllers until adopted in the FAA Air Traffic Control Handbook.

A revision to the Airman's Information Manual (Chapter 4, Section 4, Paragraph 88) is expected in the book's next edition.



## Battle for processing power between Intel and AMD intensifies

→ **Hardware Review:** Old rivals battle for PC market share.

By Joe Cambron  
Data Tech Editor

Throughout the 1980s, cutthroat competition steadily pushed PC prices down, with most PC parts falling by as much as 50% per year. Nevertheless, one crucial PC part was insulated from the competition: the CPU.

Over the last year, a series of court cases has brought a new competitor into the CPU arena. The introduction of Advanced Micro Devices (AMD) CPUs into the market has already sparked a price war involving 386 and 486SX chips. Lower prices are always good news, but with increased diversity comes increased complexity for the consumer. This article will attempt to summarize a PC buyers CPU options.

### CPU Liberation

Intel has for a long time dominated the manufacturing of computer CPUs (Central Processing Unit—the brain of a computer). Not since Intel virtually abandoned the 80286 market has there been such a brand choice for consumers in the area of CPUs.

While the brand of your PC's CPU may not create the same bragging rights as a Lexus, it is important to note that CPU prices (which make up as much as 40% of a system's costs) have fallen precipitously since Advanced Micro Devices entered the CPU fray.

AMD's T-shirts quite frankly state their strategy. "The new AM386, So Sue Us!"

Intel took them up on their offer quite quickly, but even so, Intel will not be able to stem the tide of CPUs now headed toward the market (see table).

Cyrix (a maker of math co-processors), AMD, and Texas Instruments will all soon be vying for a piece of the CPU market. Each faces a series of lawsuits from industry trend-setter Intel.

One of the side effects of this CPU war is confusion. When is a 486 really a 486? Cyrix/ATI plan to release a chip that they call a 486, but it is really a 486. It does have an internal cache (1k instead of 8K), but it has no math coprocessor. Without a coprocessor, the chip is closer to a 486SX than anything else. Hoping to decrease its cost, this new 486 chip has only 16 bit access to peripherals and, more importantly, memory.

### Access

The phrase "16 bit access" can confuse those new to computers, but it is really quite simple to explain. A path connects the CPU to memory and another path connects the CPU to the expansion bus or peripherals. Sixteen bit access means that 16 separate pieces of data can be moved down that path simultaneously. Logically, 32 bit access means that twice as much data can be moved. As you can see, 16 bit memory access imposes a 50% performance penalty on your PC.

As for the peripherals on the expansion bus, most expansion cards are only 16 bits unless your computer uses a more expensive EISA or local bus system.

### Cache

The internal cache stores frequently used data that is stored in memory. The larger the cache, the more data that can be stored in it. This increases the chance of a cache "hit" which occurs when the data needed is stored in the cache.

### Co-processor

A math co-processor speeds calculation of a limited number of trigonometric functions, but only when it is addressed by software. Sadly, very few software packages make enough use of the math chip to

Make	Model	Speed in MHz	Memory Access	Peripheral Access	Co-Processor	Internal Cache	For Sale	Best Buy
Intel	80386SX	16	16 bit	16 bit	Optional	None	Now	No
AMD	AM386SX	20	16 bit	16 bit	Optional	None	Now	No
AMD	AM386SX	25	16 bit	16 bit	Optional	None	Now	Yes
AMD	AM386SX	33	16 bit	16 bit	Optional	None	4th Q	?
Intel	80386DX	25	32 bit	16 or 32 bit	Optional	None	Now	No
Intel	80386DX	33	32 bit	16 or 32 bit	Optional	None	Now	No
AMD	AM386DX	40	32 bit	16 or 32 bit	Optional	None	Now	Yes
Cyrix	486SLC	20 or 25	16 bit	16 bit	Optional	1 K	Soon	?
TI	486SLC	20 or 25	16 bit	16 bit	Optional	1 K	Soon	?
AMD	AM486	?	32 bit	16 or 32 bit	Integrated	?	?	?
Intel	80486SX	20 or 25	32 bit	16 or 32 bit	Optional	8 K	Now	No
Intel	80486DX	25/33/50	32 bit	16 or 32 bit	Integrated	8 K	Now	No
Intel	P5	?	32 bit	16 or 32 bit	Integrated	?	4th Q	No

Above is a table of the various processors available to power the PC. They are listed in order of computing power. The Cyrix and Texas Instruments chips are identical. Speeds are the only way of identifying different CPU manufacturers in PC ads.

### Justify its cost. Clock Doublers

Another type of chip Intel is perpetrating on PC owners is the DX2 chip. It is essentially a normal 486DX chip, but it has the capability to operate at double the speed of the board it sits upon about 60% of the time. The purpose of the chip is to lower 486 system prices, but it succeeds only in complicating things. If you need the performance of a 486 chip then do not skimp by purchasing a DX2 and automatically losing 40% of its performance.

### Best Buys

Currently, the best deals for the consumer in terms of price versus

performance are definitely both AM386 chips. The Avion has evaluated two systems using the AM386SX-25 and the AM386DX-40. Both have performed at least as well as their Intel counterparts. No compatibility problems have surfaced whatsoever.

An inexpensive, but complete, AM386SX-25 based system can now be purchased for close to \$900, while an AM386DX-40 system costs about \$1,050 via mail order. An AM386SX-25 processor board now sells for about \$135, while the AM386DX-40 now costs about \$265. The incremental price savings

a consumer can achieve by purchasing a slower system do not justify the reduced power of the system.

### Next generation

The future is close at hand for CPUs. Intel has leaked news that it has a pair of processors fairly close to production quality. The P5, which will not be called a 586 to differentiate it from competitors, is due for release late this year. The P6 may debut in 1993 and is expected to be a 64 bit processor with a Reduced Instruction Set Chip (RISC).

AMD's AM486 chip has been delayed by a court ruling which may result in its redesign. This could delay its release well into 1993.

## Global Conquest picks up where Command HQ left off in the 1980s

→ **Software Review:** A new game for the IBM.

By Joe Cambron  
Data Tech Editor

Ozark Softscape and Microprose/Microplay have released what amounts to a new version of the immensely successful *Command HQ*.

This intense strategy game gives players the chance to go head-to-head or face off against the computer. An almost infinite number of game options keep the game interesting.

### Beware the natives!

With each new game, a new world is created according to the geographic options you select. Each of four teams choose their initial cities and set production type in each city. With a force consisting of a COMCEN (Command Center), a spy or battleship, an airplane, and one infantry unit for each city-your team begins its attempt at global domination.

Depending upon the game's settings, the entire world may be obscured from view until each area is discovered by your troops. Numerous cities are controlled by each of the four teams as well as an abundant force of natives.

Using your cities to build armor units, subs, battleships, etc. allows a force to build up quickly enough to fight off invasions by other players or "go beat on the natives."

### Wild and crazy

After each of five turns, a card is selected from a digital deck. It can be good or it can be bad, or even really bad. Unlike *Command HQ*, these cards can reverse the fortunes of almost any player. A time warp may send the game back five turns, a native uprising may place natives in your cities, or space pirates may steal all your money. The cards may be disabled, but they do serve to make the game interesting.

### Defend, defend

Your COMCEN is the most important piece on the board. It fights harder, dies slower and moves faster than any other piece. Sadly, its death is also yours. Without a COMCEN, your game is over.

### Game play

The game is immensely entertaining, particularly when battling another human over the modem or using direct link. A player may learn valuable military strategy or simply be beaten senseless by a savvy opponent.

WARNING: This game is not always fair.

Many say it is a sad fact of life that life is not fair. Ozark Softscape

apparently believes in this axiom with all its heart.

Just because you are winning does not preclude a mountain from springing up from underneath one of your cities, or all your forces falling to 1% health.

Aside from petty disagreements with the game's developers over such things as fairness, the game is a good one filled with challenging military encounters.

One problem players may face when enjoying a good game is a sudden end.

A variety of "bugs" in the game's code have forced an update to the original game. The time warps, for instance, play havoc with the game's

### film record.

One such encounter showed the computer the winner at the end of the game after it had been soundly defeated earlier in the game.

### Requirements

The game requires at least a megabyte of RAM, preferably with expanded memory support. A mouse is as essential as food for your troops.

### All in all

The hilarious documentation begins a road of pure enjoyment built upon the corpse of the now dated *Command HQ*. The classic makers of the highly successful Commodore 64 game *Mule*, have done it again.

Experience the intensity of a Night Club with no equal! In the heart of the party district of Daytona Beach, Florida.

Above the World Famous Molly Browns

## The Boulevard Station



Looking into the Future

Open 3pm - 3am Mon - Sat  
4pm - 3 am Sun

542 Seabreeze Blvd.  
Daytona Beach, Florida  
904-258-3827

**Sunday**  
Barbeque  
and T-dance  
Starting at 4pm

**Monday**  
\$6 Beer Bust  
All you can drink  
Draft w/free mug  
9pm - 2 am

**Tuesday**  
Quarter Well  
Drink Night  
9 pm - 2 am

**Wednesday**  
Call for Show  
Information  
(904)258-3827

**Thursday**  
\$6 All you can  
drink w/free mug  
11pm - 2 am

**Friday & Saturday**  
Party Night

One Free Drink w/  
this coupon

## GAY - LESBIAN - BISEXUAL

Are you lonely?

Confused?

Need Friendship?

You are not alone. Please write to P.O. Box 11074, Daytona Beach, FL 32120 and you will be contacted by people like yourself. Total discretion and confidentiality assured.

904-788-0078



**GUNS**  
NEW-USED  
BUY-SELL-TRADE  
AMMO



**SURPLUS-RELOADS**  
GUNSMITH ON PREMISES  
25 YEARS EXPERIENCE  
COMPLETE GUN REPAIR

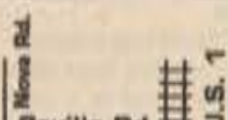
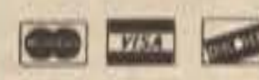
•Gun Cleaning  
•Triggers Installed  
or Adjusted  
•Rebluing

SPECIALIZING IN  
.45's

•Parkerizing  
•Handgun, Shotgun  
Riflework  
•Sight Work

### HOURS

Mon, Tues, Wed, Sat 9 - 6  
Thur, Fri 9 - 8



661 Beville Rd, South Daytona, FL 32119

\*



# Seattle music scene comes alive in the new *Singles* soundtrack

By Boyd Kelly  
Diversions Editor

There is a lot to be said for alternative music.

First of all, it really isn't that new. It has been around for years.

Secondly, it's really great to see all these wonderful bands finally getting the attention that they deserve.

I have been an avid listener of alternative music since about 1989. I was Promotions Director for my High School radio station, KASB in Bellevue, Washington just outside of Seattle.

We had an alternative format and we were playing songs from bands like Soundgarden, Nirvana, The Young Fresh Fellows and Tad.

As many of you have noticed, some of these bands made it and some didn't.

Well, before I ramble on too much I had better get to the music.

This August Warner Bros. is releasing a new movie called

*Singles*, and with any luck the movie will be as good as the soundtrack.

The movie is filmed in Seattle and the producer of the movie, Cameron Crowe, who also produced the album, picked mostly bands from the Seattle area for the soundtrack.

The disc opens up with a great track from Alice In Chains titled "Would?"

Pearl Jam managed to score two songs on the album "Breath" and "State of Love and Trust." Pearl Jam is also doing really well on the college charts right now with their album *Ten*.

The Lovemongers do an enchanting cover of the Led Zepplin classic "Battle of Evermore."

Mother Love Bones song "Chloe Dancer/Crown of Thorns," is my favorite song on the whole album. It has an unexplainable feeling of a grey day in Seattle.

Jumping right back into grunge we get hit with Soundgarden and Mudhoney.

"Birth Ritual" is another fine

example of why Soundgarden is doing so well. Chris Cornell, Soundgarden's singer, also has a solo effort on the album that is considerably mellower, "Seasons."

Mudhoney's track "Overblown" is one of the best that they have put out to date.

Of course, it wouldn't be fair to do Seattle and skip one of the guitar gods, Jimi Hendrix. Many people don't know that Hendrix was from Seattle or that he is buried just outside of it.

The Screaming Trees with "Nearly Lost You" and The Smashing Pumpkins "Drown," basically finish up the album.

"Drown" is another one of my favorites on the album and deserves mention. Also, The Smashing Pumpkins will be in Orlando on August 4th at the Beach Club.

I don't know too much about the movie yet but I do recommend picking up this soundtrack, especially if you are getting into the alternative scene.



Gas Works Park is a popular Seattle hang out for many people.

It is really great to see an outlet for up-and-coming bands and even

better being integrated into a thematic soundtrack.

Do yourself a favor and check this one out before August.

## Time Warner praised for anti-censorship action

LOS ANGELES (AP)- Time Warner Inc. was praised in full-page ads for resisting censorship of the song "Cop Killer," which plummeted on the charts in the midst of nationwide publicity.

The Ice-T album *Body Count*, which contains the heavy-metal song, fell 11 spots on *Billboard* magazine charts, according to figures released Friday.

*Body Count* placed 77th this week, after finishing 66th a week earlier. Since its release March 28, it peaked at No. 32.

However, figures reflect sales only through last weekend. The flap was renewed Thursday when actor

and conservative activist Charlton Heston read explicit lyrics from the album to stunned shareholders at Time Warner Inc.'s annual meeting in Beverly Hills.

Last month, when Vice President Dan Quayle lashed out at Ice-T and urged Time Warner to exercise "corporate responsibility," the album had an uptick in sales.

Some police groups urged boycotts of "Cop Killer," which contains lyrics about shotgun slayings of officers and the refrain "Die, die, die, pig, die."

Ice-T, who has called the song a protest against police brutality, declined through his management

company, Rhyme Syndicate, to be interviewed on Friday.

Meanwhile, the recording industry took out advertisements in *Billboard*, the *Los Angeles Times*, *New York Times* and *USA Today* backing Time Warner's "resistance to censorship."

"We are for the First Amendment from the first word to the last. We believe it means what it says," said the ad from Recording Industry Association of America Inc.

The ad referred to four songs that have generated controversy, going as far back as Cole Porter's too-hot-for-the-radio "Love For Sale" in the 1930s. It also pointed to songs from

The Doors, Neil Young, Bob Dylan and Ice-T.

Time Warner had refused calls to stop distributing *Body Count*, citing the artist's right to free expression.

On Thursday, police groups protested, and Heston read shareholders the lyrics to Ice-T's song "K.K.K. Bitch."

In the song, the rapper fantasizes about falling in love with 12-year-old nieces of Tipper Gore while his buddies have sex with Southern Nazi and skinhead females.

Heston acknowledged Friday that he may have only helped Ice-T's sales, but said he had to take a stand.

## Midnight Oil burns hot with *Scream In Blue Live*

By Boyd Kelly  
Diversions Editor

It has been a while since we have heard anything new from Midnight Oil, so I was really excited when their new disc came across my desk.

*Scream In Blue Live* is the name of the album and takes its name from their song of the same name.

Besides being entirely purple the disc also has the standard Oils philosophy and statement. The liner notes are printed on recycled paper and include a call to everyone to support the 1993 International Year for the World's Indigenous People.

Another attractive part of the inset is Michael Lippold's description of Midnight Oil live. This is perhaps the best view you could get as he has been with the band since their early days and is in charge of stage production.

He starts off by describing his first gig with the band and how "That night a gargantuan figure cavorted recklessly across the stage ducking and weaving around three maniac guitarists as some fanatic in the rear was trying his hardest to destroy the drum kit..."

He goes on to describe the fans, whom he affectionately calls punters. This is his chance to get them all back. He even manages to create a feel for the show;

"Nothing replaces the atmosphere, but if you turn the volume knob to 11, put on three sweaters and jump up and down like a lunatic for a couple of hours, you can get pretty close."

I guess frantic would be a good

## The Elf Queen of Shannara adds to the Heritage of Shannara series

By Douglas O. Fischer  
Diversions Writer

The *Elf Queen of Shannara* is another fine chapter of the Heritage of Shannara series. What started off as the best selling Science Fiction book *Sword of Shannara* by Terry Brooks, is now continued once again in this thrilling book.

In this novel the Four Lands are in despair once again and their only hope is for the Ohmfords descendants to complete the tasks charged to them by the shade of the druid Allanon, Walker Boh, the Dark Uncle, must bring back Paranor to the world of men and bring back the Druids. The Druid's keeper, Paranor, was sent away by Allanon centuries ago to protect it from the dark forces which seek to acquire

way to describe them. Anyway, on with the album.

The disc covers the last ten years and takes live songs from all over the world, with the majority of the concerts coming from Australia.

"Scream in Blue" is the first song on the album and has the feel that my friend, Jay, had described to me when he entered the slam pit at an Oils concert about four years ago. They were called slam pits back then, mosh didn't really exist in todays form.

"Read About It" slides up next and then breaks into a set of songs which I think just fit great together.

"Dreamworld," "Brave Faces," "Only the Strong" and "Stars of Warburton" show the thematic and world conscious views of the band.

"Progress," which was recorded on 6th Ave. in New York comes up next and makes a huge statement.

Everybody's favorite and perhaps one of the Oils most known comes up next, "Beds Are Burning." This song reaffirmed for me that this band sounds just as good in concert as they do in a studio. Just with more power.

"Sell my Soul," "Sometimes" and "Hercules" help bring the "set" to an end.

Lastly is a soulful song called "Powderworks." This song takes the album out on a full 180 degree turn from where we came in with regards to style and speed.

This is a must for any true fan and if you have never seen them live you can always take Mr. Lippold's advice!

## The Suicidal Tendencies and *The Art of Rebellion*

By Boyd Kelly  
Diversions Editor

"Hey, aren't those the guys that did that, um, Pepsi song?"

"Why yes, yes they are."

Mike Muir's band has come a long way since "Institutionalized," the so called Pepsi song. They have really grown into a full blown, kick-ass band keeping their rebellious status strong.

The album is called *The Art of Rebellion* and continues to pack a punch with Cyco Mikes thematic excursions into the depths of hate, sorrow, hope, abuse and all around dependency.

The album is twelve songs long and chock full of power, with most of the songs running around five minutes. This is mostly due to the in depth lyrical quality of the songs. For instance, in "Monopoly on Sorrow,"

"In a tear there is a message from the heart

Detached from the good it's the

hope gone astray

I cry so hard sometimes

Too scared to think what will bring tomorrow

Already much more than I can handle today."

Titles range from "I'll Hate You Better" to "Which Way to Free" to "I wasn't Meant to Feel This/Asleep at the Wheel."

The album is a direct descendant and progression in form from albums like *How Will I Laugh Tomorrow When I Can't Even Smile Today* and *Lights... Camera... Revolution*.

I had a lot of trouble picking my favorite songs on this album, as it is a very clean cut album and basically all the tracks are great.

So, I'll start off by saying that "Nobody Hears" is my favorite.

"Can't Stop" and "Accept My Sacrifice" are both kicking songs.

"Tap Into The Power," besides being lyrically strong, has a great bass line. The bass player and the drummer seem really tight too.

"Monopoly On Sorrow" and "We



*The Art of Rebellion* is Suicidal's best so far.

Call This Mutha Revenge" are Cyco Mike songs without a doubt.

Perhaps one of the most intriguing songs on the album is "Gotta Kill Captain Stupid."

Lastly, I have to mention what could possibly carry the best message on the album, "I'll Hate You Better."

Don't pass this one up!

## The great submarine sandwich battle continues

By Marty and Jason  
Senior Staff

Once again there is a great debate over the best subs in town. So, we sent out our raving rovers to try out some of the local delectables and this is what we got back.

By Marty Kammerman

Evaluating the three sandwiches was a difficult job mainly because I felt that all three companies produced a decent product. In my case, I had a turkey sandwich with mayonnaise, lettuce, extra pickles and onions.

Price

Some people say, "you get what you pay for." While I often live by that axiom, I found Subway offering the best value for the money. Blimpie finished second, and I was unhappy that I was charged extra for cheese. Larry's finished last, and even though they had the largest sandwich, at seven inches, the extra inch wasn't worth the extra cost.

Quality of Bread

Blimpie had the best bread overall. I liked its puffiness, it was tasty, and it held its shape well. Larry's bread was hard on the outside, and soft on the inside, and not bad overall. I found Subway's bread to be soft and flat.

Quality of Main Ingredients

Blimpie won this important category. When I peeled back the bread, and tasted some of the turkey, it was

delicious. In my opinion, the fact that the turkey is cut right in front of the customer adds to the quality of the sandwich. Larry's was also good, and the slices were nicely cut. Unfortunately, Subway's turkey was limp and had a mass produced look and taste.

Quality of Other Ingredients

I found Larry's lettuce to be the best, due to its salad like pieces. They also put a pickle on the side, which was a good idea. Subway and Blimpie had very stringy lettuce, but overall Blimpie's other ingredients together tasted better than Subway's.

Amount of Ingredients

It seemed that Subway has a policy of putting only a small amount of other ingredients on their sandwiches. The amount of turkey was particularly pitiful. Larry's was better, and made for a good overall sandwich. Blimpie was the best, because it seemed as though they packed the sandwich full of food, especially turkey.

Size of Sandwich

Larry's had the largest sandwich, advertised at seven inches, though, it seemed even larger than seven inches. It was also cut down the middle, and was quite filling. Unfortunately, it was priced almost as much as a full size Blimpie or Subway sandwich. Both the Subway and Blimpie sandwiches were about the same size.

Quality of Service

Subway won this category because they were able to put the sandwich together correctly, while Blimpie and Larry's messed up the order. At Blimpie, I requested American Cheese, and was surprised to find my sandwich with Swiss Cheese. Fortunately, I was able to catch their mistake before the sandwich was wrapped up. In the case of Larry's, they altogether forgot the cheese.

Preparation Time

All three companies took just about as long in preparing the food. Though, I noticed that Blimpie used a kind of conveyor belt system, where each employee would perform a different job in creating my sandwich. This did not seem to cause any time savings though.

Variety of Choices

Larry's clearly has the widest variety of sandwich choices. They have just about any type of sandwich available. However, both Subway and Blimpie had a decent sized menu, and offered a reasonable amount of choice.

By Jason Simon

After chowing down on each of the three sub maker's subs, this is what I found.

I gave subway the highest rating. The sub of choice was the six inch Spicy Italian, which is a combination of pepperoni and hard salami. While the quality of the meat and

bread was close to the competitors, what really put subway over the top was the variety of the ingredients. Different ingredients, like hot peppers and olives, bring out the flavor in the meats and cheeses. What really gave subway the edge was the low price of the sub. At \$2.29 the sub is a steal.

Larry's and Blimpies both tied on my score sheet. Larry's meats on the seven inch Hot Stuff Sub were the best, albeit a little salty. However the lack of variety in ingredients pulled the score down. In addition, while I like my ingredients piled high, I do not like a heap of lettuce on my sub. I also prefer to have my pickle on the sandwich and not on the side. Larry's price was a big downfall. At \$3.50 it was the most expensive. Although the sub is an inch longer than the competitors the cost per inch was still higher than the other competitors.

Blimpie had the best, soft bread. The meats and cheeses on Blimpies Best are freshly sliced. The variety of the meats on the sub also gave them a higher mark. I found the meat to be a little bland, although variety as far as ingredients was better. The price of the six inch sub, at \$2.79 put blimpie in the middle of the price range. But together, Larry's and Blimpie's were about the same. Subway was the ultimate winner, with low price and good variety.



# Babylon A.D. cranks out standing room only tour

By Douglas O. Fischer  
Diversions Writer

Arista recording artists, Babylon A.D., recently played for a standing room only crowd at The Station in Fern Park.

This is only one of many shows the band will do this summer as part of their 1992 national tour.

Comprised of Derek doing lead vocals, Ron Freschi on guitar, Danny De LaRosa on guitar, Robb Reid on Bass and Jamey Pacheco on drums, Babylon A.D. started the show off with a power rocker titled "Bad Blood." This is an excellent hard rock song which happens to be the lead track on their new album (second song on the CD) *Nothing Sacred*.

It only took three seconds for the head bangers to start shaking to this scorching. This is an indicator of how excellent a tune it is. They rocked next with "Maryanne" and "When the Hammer Swings Down," metal cuts of their self titled debut.

A few songs later I started getting very favorable comments about the show from The Stations' employees. This says a lot.

These are the people who see bands 320 days a year; they are the most critical critics of the critics and when they say a band is good it really means that the band takes no prisoners.

The comments I got ranged from jamming to excellent. Other favorable comments came from members of local bands who were there enjoying the show. The show was finished with a double encore; the crowd wanted more, but Mr. Clock said it was closing time.

Babylon A.D. emerged from the Oakland California biker bar scene in 1988 when they signed with Arista. In 1989 they came out with their rocking self titled debut. The song "The Kid Goes Wild" was included on the *Robocop 2* sound track. This power debut, combined with two tours of the states, has gotten them quite a lot of fans.

*Nothing Sacred*, the bands' second album, contains a dozen songs which shows the bands diversity when it comes to playing rock n roll. "Take the Dog off the Chain," "Psychedelic Sex Reaction" and "Bad Blood" are excellent power rock songs. "Dream Train" is a hard rocker with some real cool banjo picking. "So Savage the Heart" is a well written and hard hitting ballad.

My favorite song is "Redemption." This song is a very powerful song about child abuse, one of the darker sides of life. It has been a long time since I have heard a song which has hit me so hard.

Derek sings this song in a manner that makes the listener feel the pain of the young girl who's innocence has been shattered by her daddy's passion. The music score matches the lyrics perfectly, most noted are the triplets leading the assault of the chorus.

This album gets a final grade of 'A' and is a fine compliment to any rock 'n' roll collection.



Babylon A.D. plays for a standing room only crowd at The Station in Orlando.

## North Florida shows off some talent with Eli

By Douglas O. Fischer  
Diversions Editor

A short while ago I got a chance to see a terrific north Florida band that goes by the name of Eli. They played originals and covers which definitely pleased the crowd that came to see them at the Station.

This rocking band is comprised of Kelly Love on guitars, Rodney O'Quinn on bass, Will Hunt on drums, and Dave Brown doing the vocals.

They started the show with a Pink Floyd medley, which started off with them playing "Time" from the very beginning. It sounded so good I got real close to make sure they weren't faking it, they were not. The rest of the medley included "Comfortably Numb" and "Another Brick in the Wall." The covers of Kiss and Edgar Winter Groups' "Frankenstein" were done very well as were the rest of the covers.

The second set was an all original set. Eli shared some killer originals with the crowd. Some of the tunes they played are on their *Push It Hard* tape, which is a cool collection of nine rocking tunes.

My favorites on the tape are "Push It Hard" and "One More Drink." The rest of the killer originals will be on an up coming tape, and from the way the songs sounded live it should be a very good tape.



Eli mixes their own brand of rock 'n' roll, Pink Floyd and Jagermeister served fresh.

"Written in Stone" and "Swamp Stomp" should bring out the mosh in you. "River Dog" is a jamming Blues/Rock song which has a unique guitar style to it. "Winter Rain" is a good 'ol rock 'n' roll song.

During the show Eli received many a shot of Jagermeister from

the supportive crowd. During the third set Dave returned the favor by producing a liter bottle of the German mixture and poured a shot into each mouth of the Daring who had gathered in front of the Stage.

Eli is a very busy band; they played 267 gigs last year along the

U.S. east coast. They are also very personal, the fans can talk to them between sets. They tell me they have the road system down pat and prefer the week-long gigs to the one nighters. Eli, the 1991 Spinnakers band of the year is definitely worth checking out, live or on tape.

## Kody Lee storms through Florida on their tour

By Douglas O. Fischer  
Diversions Writer

For their Bad on Wheels summer '92 tour, Kody Lee rocked the tourists and the locals right here in Daytona at the Other Place. Featuring Jeff Blando on guitar, Adam Shore on bass, Ed Gowan doing lead vocals, and Matt Bloodwell on drums, Kody Lee is a rock 'n' roll band worth checking out.

They did an excellent job on the Aerosmith, Fleetwood Mac, and Van Halen covers. They did a barrage of Zeppelin where Jeff wailed on the guitar with a bow, Jimmy Page.

The stage show, enhanced by the lights Greg had set up on his second day on the job, was excellent. Of the few bands that even try to cover Zeppelin, never have I seen and heard it done so well.

Ed sang the vocals at the right pitch, Adam wailed on bass, and Matt had Bohman's beat alive. Add to this Jeff screaming on the guitar with a bow during "Whole Lotta Love" and you get one fantastic Zep



Kody Lee takes on the best of rock 'n' roll as well as doing their own songs.

cover. Enough about covers, originals is where it's at and Kody Lee has some terrific ones, response of the crowd I'd say they more than just liked this

killer original. "Professional Help," "Psychedelic Ride" and "So Damn Pretty" were really enjoyed by the crowd.

My favorite was "Quarter till

Four," a rock tune with a little blues riff to it. This song is about a guy who is blamed for the death of his cheating wife's lover. From the response of the crowd I'd say they

## Jason Simon says...

The daou

The daou, truly an unusual name for a musical group. However, the unusual name fits after listening to the unusual music on their compact disc, simply titled *Head Music*.

To describe the heartwarming tones on this disc would require me to create words that just do not exist. With a crossover beat that reminds me of a mix between jazz, Sade and the band Enigma, The daou have capitalized on a jazzy/airy sound that seems to want to carry the listener into the clouds and beyond the realm of the mortal man.

While each song has subtle changes in rhythm and beat, the songs on this disc have a stunning similarity. Do not get me wrong, the variety of tones and lyrics more than make up for this subtle problem with repetitiveness. If you like Jazz or easy listening music with meaning, look for The daou it is a disc that you will not want to miss.

Ultra Vivid Scene

Have you heard those new Arby's commercials on the radio. You know, the ones that go "same same same, Arby's is different." Well, I just could not get that advertisement out of my head while I listened to *Ultra Vivid Scene*.

Ultra Vivid Scene, with their new album titled *Ultra Vivid Scene* was enough to give me a headache after a while. They have a sort of "stuck in the 60's" sound while trying to pretend they are ultra modern.

The songs on this disc are really the true cause of my insane Arby's flashbacks. They all sound the same.

"Same same same lame lame lame." The lyrics are hard to follow and understand at some points, as though the band were trying to sing into a microphone covered in one of those Styrofoam packages that one can find in any Arby's restaurant. You know, the ones that they serve the incredibly fat and cholesterol filled breakfasts in.

This music, along with those Arby's breakfasts will cause your arteries to clog. While there are a few "different songs" on this disc, I would rather listen to political debate on C-span than force my brand new 18 disc changer to play this...this...crap. (It is hard to use the appropriate dirty words in a newspaper).

Fortunately the Avion's CD player was forced to handle this one.

Take a word from the wise, forget the sameness of *Ultra Vivid Scene*, spend your money elsewhere, like Arby's.

## What Holli Would have done if Hollywood had let her

By Boyd Kelly  
Diversions Editor

The big question on my mind was whether or not *Cool World* would be Roger Rabbit rip-off and whether or not it would be as risqué as *Fritz The Cat*. Well, it was neither.

This movie deserves an 'A' for cinematography and animation but it gets a serious 'D' for plot.

There isn't really much of a plot and what there is of it is haphazardly stuck together and is a little hard to follow. On the good side though, the story line is basically all right and the action is non-stop.

It seems that this was a way of getting full-length feature cartoons back into the cinema. The movies borders on the edge of animated sex but doesn't actually get down to it. There is cartoon sex, don't get me wrong the ads on TV are pretty much accurate; you just don't see the sex happen.

Every trip into Cool World was an exotic fantasy. It seems that every doodle everyone ever drew is in Cool World and running around at warp speed causing general all-around cartoon mayhem. If you like Tom and Jerry, Ren and Stimpy and other crazy cartoon characters then you are in for a big treat. It will take some effort though as the action is non-stop and very hard to follow. There is a great deal going on in every scene.

Most of the action is on surreal sets with a mix of live action and props and animation. This is another bonus for the movies, especially if you like dram and the likes.

Does Holli Would do it? Yes, she does, but it gets her no where. It leads her on a quest for a spike, involves a convict artist and two dimensions of reality.

A little tough to swallow. If you like cartoons and music this will be a good film, but if you are a big fan of in depth plots then

## Harvest Direct offers vegetable substitute hamburgers

By Todd Hughes  
Photography Editor

I am the type of person who like meat in my hamburgers, so I was skeptical to say the least to try a Harvest Burger from Harvest Direct Inc.

I was watching late night TV when a commercial for a healthy

alternative to meat appeared, so I ordered and decided to give it a shot. Harvest Burgers contain 100% vegetable protein and have no animal products whatsoever. Besides being cholesterol-free, it is low in fat and calories, and is a source of dietary fiber.

Every Harvest Burger is certified kosher parve. Harvest Burgers have been avail-

able in the United States for a year and a half now but it has been available in Europe for over two years.

A spokesman for the company said that the product has been available in Europe for longer because of shortage of meat, and now is becoming more popular in the United States due to the going concern for healthy alternatives to meat.

The Harvest Burger come in six

different flavors, the two that I tried were the original and taco fixings.

The burgers arrive in dry mix form that just requires you to add water.

When you begin to mix the burgers you start to realize what you have got yourself into, the mixture looks and smells like dog food.

Forming the patties is the an experience in and of itself, the mix-

ture is very sticky and does not smell too pleasant.

Once the burgers begin to cook they smell just like regular hamburgers and the cook in the same amount of time.

The burgers are very good and taste better than the burgers Morrison's serve.

Over all, the burgers deserve a lot of praise for giving people a tasty

alternative that is also good for you.

The Harvest Burgers are not available in stores at this time but they should be in a short time. The burgers can be ordered by calling the company at 1-800-835-2867.



Calvin and Hobbes by Bill Waterson



Far Side by Gary Larson



Drawn by the pulsating sound of a rock thumping on a dead armadillo, two Australopithecines stood at the forest edge. Instantly, Thug's agent knew they had a crossover hit.



"OK, Mr. Hook. Seems you're trying to decide between a career in pirating or massage therapy. Well, maybe we can help you narrow it down."



Although never achieving the fame of his African counterpart, Larry of the Lemurs was a common sight to natives of Madagascar.



Non-singing canaries have to take wood shop.

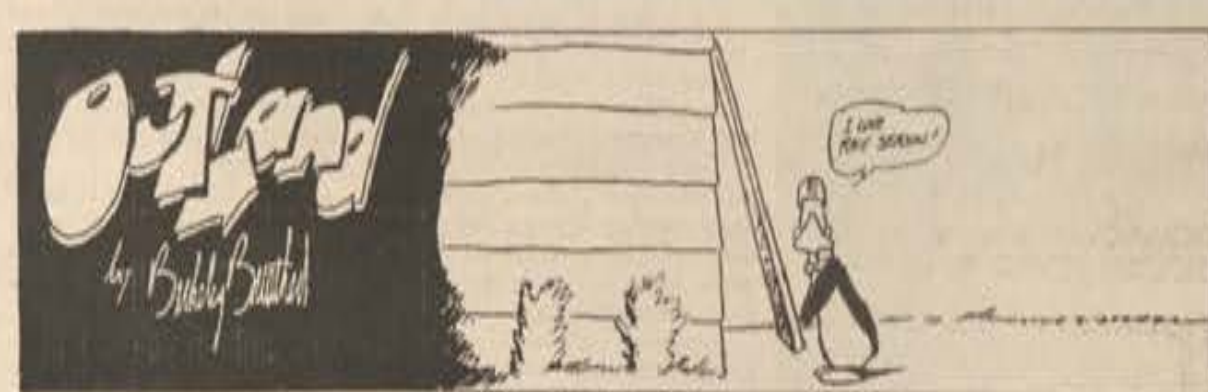


Chicken sexual fantasies



Tarantula coffeehouses

Outland by Berkeley Breathed



Mother Goose and Grim by Mike Peters





### Autos for sale

1982 Volkswagen Scirocco, 5 spd, Runs great, in good condition, asking \$1900. Call Lou 226-6565.

1992 Mazda 323. Brand new, red, AM/FM cassette, 7500 miles. \$7900. Call 676-7872.

### Roomates & Rental

Wanted: roomate for 2 bedroom, 2 bath apt. Rent \$250/mo. plus 1/2 elec. Non-smoker, out-going individual preferred. Call at parents home (813) 924-5406, ask for Herb. Starting Fall term.

Female roomate needed to share apt. Rent \$259.50/mo. Split utilities. Includes pool, lighted tennis court, free cable TV, washer/dryer, lake, clubhouse, only 1 mi. from BRAU. Call Nicole at 274-4256.

Two roomates needed to share apartment with a lady and gent. Lake forest apt. \$150/mo. plus 1/4 utilities per person, non-smokers. Contact Lonnie at 760-457 or Box 7717.

House for rent: 3 bedroom, 2 bath, pool, 2 car garage and fireplace. Close to BRAU. Call 761-8490.

Roommate needed for Island Club. 2 bed, 2 bath, w/washer and dryer, pool, jacuzzi, tennis, more. \$280/mo. plus 1/2 util. Responsible, neat, non-smoking, male BRAU student preferred. Avail. Aug. 1. Call Mike 253-6980.

Master bedroom w/bath, private entrance, walk-in closet, 10' vanity, fireplace, huge pool. Female or Married couple O.K. \$350/mo. Full privileges for everything. Call collect or leave message: Lou (516) 378-92823.

### Misc. for sale

Six channel Putaba radio w/six seruos, never used. Not 91 ready. \$200 O.B.O. Call 75601494

Mini refrigerator (perfect for dorms) and desks/tables. Call 761-8808.

For Sale Roland Juno 106-128 presets, MIDI, must see, \$775 O.B.O. Call 760-3219.

RC Plane and parts w/25 engine, almost new. 7 channel FM radio, \$200. Call 760-3219.

VCR, great condition, cable ready. VHS. Call 760-3219.

Aircraft for sale: Cassini 31 Racer. Single seat aerobatic pilot racer. 120 capable. 140 HP Lyco. 0-290-D2. 25 hr. TTAF, 50 hr. SMOH. Pitts time a good idea for this one. Serious inquiries only. Chris 407-834-2847 or Box 4371.

### Miscellaneous

Plane for rent: C-150 for \$38/hr. Call Nick 441-2008

### Personals

SI  
Am we going to Jersey? I want to fly  
Coulthall? Can we?  
LOVE BEA

KCM  
6 years, wow. Our whole life to go. But...  
you can't wear me out!  
JMO

JOE  
F-1 blows, get a real racing division like  
Winston Cup, Party rules.  
RICH

DR. MOBIUS  
Your incursion into Indonesia was  
intolerable. prepare for war.  
THRATCHEN

TO SOMEONE!  
You flattered by your note and that you went  
out of your way to reach me! However, I'm  
not into that type of introduction. A real man  
would find a way to be introduced or  
approach me himself!  
MS. P

SUSAN  
Is it August yet? I can't wait to see you again.  
I miss you!  
SHAWN

JOHNNY VELET  
The blue night boys scambie patrol will never  
be the same- it is truly the end of an era! Your  
shoes can not be filled and you will be missed  
by many!  
WITH LOVE AND AFFECTION, YOUR  
FRIENDS

JEANETTE  
I will love you forever!  
RICH

PUSSYCAT  
The movie wasn't that bad. That place did  
have a lot of good memories but, now we can  
make new ones. I love you very much and  
you don't have to make anything up to me.  
KITTY

Join the Avion! What have you got to loose?!

LAURA  
Don't stress too hard, it's almost over!

DIMPLIS  
Don't worry. Be happy! Get well soon!  
SIL

### California

(continued from page B1)

"Performing the work at Palmdale also gives us the added advantage of being able to maintain a skilled, highly effective work force in California which is essential for us to carry out our structural spares work," Utman added.

The structural spares program is designed to provide NASA with major hardware that would be needed in the event an orbiter is damaged.

The decision will not result in any jobs being lost at KSC, according to Utman.

TAKE THE KEYS.  
CALL A CAB.  
TAKE A STAND.



### DSN

(continued from page B1)

NASA's Deep Space Network will be in communication with *Giotto* during the comet's closest approach to Earth. The DSN is a worldwide network of antennas for navigation, tracking and communicating with spacecraft. The DSN has three primary Deep Space Communications Complexes. These are located at Goldstone in the Mojave Desert; near Madrid, Spain; and near Canberra, Australia. NASA's Office of Space Communications (SC) in Washington D.C., is responsible for overall management of the Deep Space Network. The DSN is managed and operated for the OSC by the Jet Propulsion Laboratory.

The 70-meter (230-foot) wide DSN antenna in Madrid successfully reestablished contact with *Giotto* in May 1992, and prepared the spacecraft for its second mission. The 70-meter-diameter antenna at the Goldstone Complex was damaged on June 28, by an earthquake. The damage was not repaired in time for the *Giotto* rendezvous.

### Spacecraft

(continued from page B1)

waves and electromagnetic waves, and the generation of strong ionospheric currents that produce significant changes in the upper atmosphere. These waves and currents often result in severe problems on Earth with communications, power supplies, and spacecraft electronics.

The information gathered during the *Geotail* mission will allow scientists to model and more accurately predict Sun-Earth interactions and their effects on space exploration, communications and in ground technology systems.

#### The Mission

*Geotail* will use the gravity of the Moon to assist its orbit on the night side of the Earth, where the magnetotail is stretched out as a result of the impact of the solar wind encountering the Earth. *Geotail's* orbit will extend from 220 Earth radii at its farthest point to eight Earth radii at its nearest point.

The objectives of the *Geotail* Mission are to: (1) Determine the overall plasma, electric, and magnetic field characteristics of the distant and near geomagnetic tail. (2) Determine the role of the distant and

near-Earth tail in substorm phenomena and in the overall magnetospheric energy balance and relate these phenomena to external triggering mechanism. (3) Study the processes that initiate magnetic field reconnection in the near-Earth tail and observe the microscopic nature of the energy conversion mechanism in the reconnection region. (4) Study plasma entry, energization, and transport processes in interaction regions such as the inner edge of the plasma sheet, the magnetopause and the bow shock, and investigate associated boundary layer regions.

#### The *Geotail* Instruments

*Geotail* has a complement of seven instruments, with the United States providing two and the Japanese providing three complete instruments. The remaining two instruments are shared. The principal roles of the seven instruments onboard the *Geotail* spacecraft are divided into magnetic-field measurements, electric field measurements, plasma and plasma wave analysis and energetic particles.

The *Geotail* spacecraft is to be launched aboard a Delta II rocket on Friday, July 24, 1992. The launch window extends from 10:26 a.m. to 10:31 a.m.

# THE AVION

Next issue will be published  
Wednesday, August 5, 1992

All classified ads, clubs  
and notices are due by  
Friday, July 31, 1992

# THE AVION

GET MORE FLYING TIME FOR YOUR FLYING DOLLAR WITH



## Sunrise Aviation

A full service FBO

Ormond Beach Municipal Airport

(904) 677-5724

AIRCRAFT	RENTAL LIST	DISCOUNT RATE
CESSNA 152	\$ 39	\$ 35.10
CESSNA 172 N1527E	\$ 50	\$ 45.00
CESSNA 172 N4388R	\$ 55	\$ 49.50
CESSNA 172 M	\$ 63	\$ 56.70
PIPER ARROW	\$ 65	\$ 58.50

All rates per hour

AVOID THE COSTLY DELAYS

CALL FOR CHECK-OUT TODAY

ATC 610  
\$ 16 /hr

DUAL add  
\$ 15 /hr

SEA BEE \$ 96 /hr (dual only)  
Introductory Flight only \$ 81 !



## American Red Cross Blood Drive

Sponsored by Sigma Chi Fraternity

Wednesday, July 22nd

10:00 am - 3:00 pm

Student Center Conference Room  
University Center

Please remember that fewer students are on campus during the summer term, so we're counting on each and every eligible donor to

"GIVE THE GIFT OF LIFE" !!

For more information, please contact Debbie Haun, American Red Cross 226-1409.



*Win a piece of Blackbeard's  
Treasure!*

Be one of the first 50 people to correctly complete this week's crossword puzzle  
and bring it to the *Avion* office

**AND YOU WIN**

a "gold coin" valid for one free round of miniature golf at:



**ADVENTURE  
GOLF**

At the corner of A1A and Cardinal Drive  
(One Light South of Granada)  
Ormond Beach, FL 32176  
(904) 676-9326

Brought you by:  
Your Student Government Association,  
*The Avion*  
and Pirate's Cove Adventure Golf.