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Embry-Riddle Aeronautical University

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AERONAUTICA

Dr. Katoot completing research on proton microscope

by Frances L. Cozza
Aeronautica Editor

Embry-Riddle Aeronautical University, the Florida Institute of Technology and the University of Florida have committed Ph.D. level scientists, graduate students and sophisticated equipment to a research project of a proton microscope. Dr. Katoot, of Embry-Riddle, and Dr. Walker, of the University of Florida, Gainesville, have invented the Compound Superconducting Solenoidal Proton Microscope; a device that will allow researchers to examine a point 100 times smaller than electron microscopes currently in use.

The proton microscope has a variety of scientific and medical uses. Past use of a proton microscope at Oxford University in England was to analyze Alzheimer's tissue samples. It established the focal deposits of aluminum and silicon in at least 90 percent of all the sample tissues. In addition to the aforementioned deposits, it was able to detect compounds such as iron and calcium and trace levels of titanium, vanadium, manganese and chromium around the aluminum/silicon core. Dr. Katoot suspects that there is a correlation between the presence of Titanium and other trace minerals in brain cells, and the onset of Alzheimer's disease. Researchers note that it is possible to use the proton microscope not only in the elemental analysis of tissue but also for high energy ion beam radiation therapy of different disorders, such as cancer.

Work in computers is expected to improve because of the proton microscope. "We are currently in great competition with the Japanese to build supercomputers," Dr. Katoot said. "Present technology allows us to fit perhaps 100,000 integrated circuits onto an area about a centimeter square. But

we have no way of looking into the circuit and microchips, and cannot find flaws until late in the production process." The proton microscope will shed light on small breaks or imperfections early enough in the manufacturing process to save time and money. It may be the only microscope in the world that will enable production workers to see into these incredibly small areas and produce smaller and smaller computers, noted Dr. Katoot.

Currently electron microscopes are used to "weld" Titanium to the blades of a jet engine to make the surface smooth and even. But the greater resolution of the proton microscope could allow a much smoother and therefore stronger layer of Titanium. This could mean the engines and the aircraft they propel would be safer.

"As more proton microscopes become available, replacing the electron instruments, more uses for it are expected," says Dr. Katoot.

The development of the electron microscope was a major breakthrough. The problem with the electron microscope is that electrons are very light, so as soon as they start encountering the surface of a sample, they tend to scatter in many directions. This causes the emission of radiation that obscures measurements. It is necessary to scan several times to get the desired information, and even then, the resolution is not very clear.

But protons are heavier than electrons, notes Dr. Katoot, and they are less distracted by the surface of the sample being scanned. This makes protons go directly to the desired spot, yielding clearer resolution because they do not emit nearly as much unwanted radiation as in the case of

electrons.

Oxford University in England has a working model of a proton microscope that is a great improvement over electron microscopes currently in use," said Dr. Katoot. His opinion is backed by a recent study that shows even though the Oxford model is limited by older technology, it has distinct advantages over conventional electron microscope technology.

"But the Oxford instrument is limited in its ability to focus," Dr. Katoot pointed out. "Early results in our research indicated that our invention will give at least 10, perhaps 100 times higher resolution than the Oxford model. We have developed a design that incorporates superconducting solenoids as focusing elements instead of quadrupole magnetic lenses used in the Oxford instrument. This allows for greater current flow, which means a point 25 times smaller than the Oxford model may be examined. A better analysis is possible this way," he added.

The next generation of microscopes will definitely use protons rather than electrons," said Dr. Katoot. "We are witnessing a major breakthrough, even bigger than when the electron microscope was invented. And I'm excited to be a part of it."

To get a clear understanding of how the



Dr. Katoot, the researcher...

The proton microscope has a variety of valuable uses for today's technology. Dr. Katoot and others are making a contribution to exploring the universe.

proton microscope works try to imagine this: a nuclear accelerator speeds up protons, enters into a beam line, then goes to a super conductor solenoidal, where it begins to go through several focusing stages.

The proton microscope has been around for four years. The electron microscope has been around for twenty years. By using the proton microscope, Florida State University is conducting research with numerical calculations to understand the beginning of the universe, and why the universe is structured the way it is.

Dr. Katoot has received several awards for his research and development in the proton microscope from the National

Institute of Neurological and Communicable Disorders; for his research in quantum gravity from the Technical Research and Development Authority and the Department of Energy for other research projects.

The three year, three phase project is being funded in part with \$500,000 from the National Institutes of Health and approximately \$190,000 from the State of Florida. Additional monies were made available by Nanoptics, Inc.: Phase I — more than a year of computer-based research (completed), Phase II — construction of the working prototype (to be completed within the next month or so), Phase III — will lead to the full-scale commercial production of the microscope.

Kuwait Air Force now armed with the Hornet's sting

ST. LOUIS - On October 8, McDonnell Douglas conducted a rollout ceremony at its St. Louis plant for the first of 40 F/A-18 Hornet fighters Kuwait is buying from the United States.

John P. Capellupo, president of McDonnell Aircraft Co., a division of McDonnell Douglas, officially presented the two-seat F/A-18D, which bore Kuwait Air Force markings, to Brigadier Dawoud Al-Ohanim, commander of the Kuwait Air Force and Air Defence. Also present to receive the aircraft on behalf of Kuwait were His Excellency Shaikh Saud Nasir Al-Sabah, Kuwait's ambassador to the United States, and Paisal Al-Dawoud, under secretary of defence for Kuwait.

Capellupo told a crowd of some 250 that the rollout of Kuwait's first Hornet was "especially meaningful" because the aircraft "affirms that Kuwait has rebounded from the tenuous position it found itself in just a few months ago. That this aircraft is here today, on schedule, is a testament to the hard work and dedication

of the people of Kuwait, the United States Navy and the folks here at McDonnell Aircraft."

Capellupo said the first Kuwait Air Force F/A-18 is unique in that it is the first production F/A-18 to be powered by General Electric's new F404-GE-402 Enhanced Performance Engines (EPE). These engines can generate up to 20 percent more thrust than the F404-GE-400 engines on current Hornets.

The EPE's will become the standard powerplant for U.S. Navy and Marine Corps F/A-18's beginning in 1992 and will power all export F/A-18's.

The EPE, in the 17,700-pound thrust class, was designed to improve the Hornet's time-to-climb, supersonic, and low-altitude, high-performance.

McDonnell Douglas test pilot Dave Desmond, who was at the controls of the EPE-powered Kuwait F/A-18

on its first flight, said the engines enabled the aircraft to accelerate "much more quickly" than previous F/A-18s. The Kuwait Hornet also took less time and distance to get to a speed of Mach 1.6.

Kuwait is purchasing 32 F/A-18C single-seat and eight F/A-18D two-seat Hornet fighters (plus logistics and training support) from the U.S. government under a contract valued at approximately \$1.6 billion.

The Kuwait Air Force selected the F/A-18 as its fighter of choice after an extensive flight evaluation in 1988. The Kuwaitis cited enhanced safety, twin engines, maritime capability, high reliability and multimission capability as important factors that favored the Hornet's selection.

After Iraq invaded Kuwait on Aug. 2, 1990, the U.S. Navy directed McDonnell Douglas to continue development and production of the F/A-18s for Kuwait.

The first six Kuwait Hornets are on schedule for delivery by the U.S. government to the Kuwait Air Force in January 1992. The remaining 34 aircraft will be delivered over a 21-month period that ends in September 1993.

The F/A-18's are intended to serve as a front line of defense for Kuwait and as replacements for the Kuwait's Air Force's fleet of A-4KU Skyhawk attack aircraft. Kuwait purchased 36 McDonnell Douglas A-4s from the United States 20 years ago.

McDonnell Aircraft manufactures the F/A-18 strike fighter in St. Louis where about 7,000 people are associated with the program. Principal subcontractor Northrop Corp., of Hawthorne, Calif., provides the center and aft fuselage.

McDonnell Aircraft has produced 1,046 F/A-18s for the U.S. Navy and Marine Corps and the air forces of Canada, Australia and Spain.

U.S. Border Patrol turning to helicopters

SAN ANTONIO (AP) - The U.S. Border Patrol is turning more toward helicopters rather than fixed-wing aircraft in its battle against drugs and undocumented aliens crossing into the United States, agency officials say.

Helicopters can more effectively cover ground patrols along the vast and rugged terrain along the U.S.-Mexico border, border patrol officials said.

"It's just more effective. They are much easier to land, and you can't extract people from an area with fixed-wing aircraft," Duke Ausim, a Border Patrol spokesman, said of the increased emphasis on helicopters.

Overseeing a change in the aircraft fleet in Texas is Doug

Keim, chief of the agency's air operations in El Paso.

"The rotary-wing aircraft is more flexible in the interdiction of aliens and narcotics," Keim told the *San Antonio Express-News*.

Although the Border Patrol would not reveal the size of its air force along the U.S.-Mexico border, Keim said airplanes make up about 60 percent of the force.

Within two to three years, Keim wants helicopters to make up three-fourths of the fleet. Some airplanes will remain, he said.

"Fixed-wing aircraft still has a function. It's still appropriate to use fixed-wing (aircraft) when you are covering sectors with up to 600 miles of border," Keim said.

Much of Texas' borderland consists of large expanses of unsettled terrain, from south of El Paso and through counties along the Rio Grande to the lower Valley area.

Keim said the use of fixed-wing aircraft allows the Border Patrol to make large surveillance sweeps over those types of areas in shorter periods of time.

Helicopters are being purchased by the Border Patrol from the military and other government agencies where a surplus exists, Keim said.

"We're saving the taxpayer money," said Keim, noting that helicopters purchased from the military cost about \$600,000 to \$1 million each. If new, the craft

would start at \$1.5 million, he said. The cost differential between airplanes and helicopters is minimal, he said.

Border Patrol airplanes include the Cessna 182, Cessna 206, PA-18 and Piper Cubs. Helicopters in the fleet include OH-6As, Hughes 500s and the Aerospatiale, more commonly called A-Sars.

Airplane pilots may argue that a fixed-wing craft is more safe, but Keim said the lack of high speed and the ability to control motion makes a strong case for the safety of a helicopter.

"Forward speed kills you. If you can come down to a touch down, you have lot better chance of walking away," Keim said.



Whirly-bird population soon to increase...

The UH-1 is a possible purchase from the military for the Border Patrol.

Boeing speaks with Congress about environmental concerns

WASHINGTON, D.C. - A senior Boeing official told members of Congress today that Congressional and Administration support are needed to protect the global competitiveness of America's aerospace industry.

Dean D. Thornton, president of the Boeing Commercial Airplane Group, told a meeting of the Congressional Competitiveness Caucus that Boeing is facing four issues of popular concern: European subsidies, multiple certification requirements (for the airplane), health care costs and the economic impact of environmental regulations.

Addressing the subsidy issue, he said, "Because we (Boeing) sell aircraft throughout the world -- we are the country's leading exporter -- we are vitally concerned

(General Agreement on Tariffs and Trade) and a level playing field."

He said the Boeing commitment of resources to develop the new 777 airplane is enormous, in the billions of dollars. "We are engaged in a tremendous undertaking," he said. "I believe it is the biggest free enterprise endeavor in the world today."

As the country's leading exporter, Boeing buys nearly \$10 billion worth of goods and services each year from suppliers in 49 states. He urged Congress to protect this industrial base from subsidized competition by Europe's government-backed Airbus Industrie consortium.

for us to compete with a subsidized competitor who can launch new programs, undercut our prices and buy airline allegiance -- all with government money."

The U.S. has taken Airbus to GATT subsidy rules.

He said, "Congressional support for improved GATT rules on subsidies, for successful conclusion of the current case, and if need be, for U.S. trade actions to achieve a settlement will be greatly appreciated."

On certifications, he noted that formerly certification of a new airplane type by the U.S. Federal Aviation Administration was generally accepted by other countries. Now, he said, the Europeans

Boeing airplanes must be certified twice, once in the U.S. and again in Europe. Our competitors, including Airbus, are also subject to these multiple certification requirements. The result is added costs for all aviation products."

He urged all involved agencies of the government to work to establish only one certification process around the world. "This is a serious issue," he said.

Citing the rapidly rising costs of health care for employees -- in 1991 alone, costs rose 21 percent -- he said these costs have direct bearing on the ability of Boeing -- and other American companies -- to compete globally. "It's one of many cost factors government and industry cannot ignore," he said.

The rising costs of environmental record-

competitiveness, he said. He continued, "Environmental regulations have gotten frightfully lopsided -- lopsided on the side of paperwork, reporting plans and documents."

He added, "I'd like to spend less on paperwork and more on things that really improve the environment."

Boeing, he said, is making heavy investments in solving problems, such as chemical reduction and waste minimization. "Let me assure you, we are totally committed to the safety and health of our employees and the protection of the environment."

"I ask that Congress be cautious to avoid bureaucratic paperwork and reporting and to ensure a balanced harmonious relationship between business and the environment. U.S.

"Environmental regulations have gotten frightfully lopsided... on the side of paperwork."
-Thornton

Microsoft plots the future of Windows in internal release

Microsoft Windows is now the preferred interface for millions of IBM users, but Microsoft's plans for Windows are just beginning. Microsoft intends to make Windows one of the first programs to take full advantage of the 32-bit internal architecture accompanying 80486 and 80386 computers. Portable Windows is a concept that would allow Windows to operate on a variety of different computers, such as the Macintosh. Following is a description of Microsoft's plans for Windows that was obtained by this reporter. —Data Tech ed.

Since its original release in 1985, Microsoft Windows has become the leading graphical system for IBM compatible personal computers. Version 3.0, released in May 1990, was a milestone that broke the 640K barrier of the Microsoft MS-DOS operating system by running applications in protected mode, thus making it possible to develop much more sophisticated applications.

This innovation spawned myriad applications and is responsible for the huge success of the Windows environment in the marketplace showcased by the volume of graphical applications sold.

Between May 1990 and May 1991, more than 4 million copies of Version 3.0 were sold. International Data Corporation estimates that an additional 7.8 million copies will be sold during 1992. By spring 1991, more than 1200 Windows-based applications were shipping.

Building on this achievement and on the success of independent software developers, Microsoft is extending and expanding the Windows environment so that Windows-based applications can run on a broad range of computing platforms - from low-end battery-operated portables to high-end RISC workstations and multiprocessor servers. We are expanding Windows to make it fully 32-bit, and are adding additional operating system services.

Microsoft Windows for Pen Computing and Microsoft Windows with Multimedia Extensions will also take advantage of new hardware technologies.

Today, many people think of Windows as a graphical add-on to the familiar MS-DOS operating system they have used for years.

This perception took much of the fear out of upgrading to Windows for the end user. But in fact, Windows is not limited by MS-DOS. Windows is a complete operating system that provides extra features on top of MS-DOS and replaces certain MS-DOS features.

The advantage of being able to work with MS-DOS is that it preserves the value added by MS-DOS's long life span (in computer years).

Future versions of Windows will continue to be available on MS-DOS.

The Windows architecture

Since the IBM PC was introduced in 1981, personal computers have become much more diverse in capability and in configuration. This diversity will increase in the next few years as personal computers based on RISC processors and multiprocessor systems are introduced. These diverse systems have different operating system needs.

For example, a low-end battery-operated portable requires minimal memory and hard disk footprint to minimize weight and cost. It also requires power management to extend battery life. Some vendors feel that

...more than 4 million copies of Version 3.0 were sold...

the diverse range of hardware requires totally different operating systems for personal computers, workstations, servers, and in the future, pen-based systems. Each of their operating systems require unique, incompatible applications.

Today Windows has three modes: Real-mode, Standard-mode and Enhanced-mode. Real-mode provides compatibility with previous versions of Microsoft Windows. Standard-mode is optimized for an 80286 processor and provides access to the full 16 MB of memory supported by that chip.

Enhanced-mode takes advantage of the 80386 and 80486 processors by providing support for multiple DOS applications and thru a technique called demand

paging, provides applications with access to more memory than is physically present in the machine. All three modes support both DOS and Windows applications. Building upon the success of Microsoft Windows Version 3.0, Microsoft will introduce Version 3.1 in late 1991.

Version 3.1 incorporates significant customer feedback; it improves performance, introduces a newly designed file manager, improves network connectivity, and improves system reliability. Version 3.1 will support Windows Standard-mode and Enhanced-mode. Also during 1991, Microsoft will enhance Windows Standard-mode and Enhanced-mode by providing extensions for sound, animation, and CD-ROM access, called Windows with Multimedia. We will also release extensions for clipboard and pen-style computing, called Microsoft Windows for Pen Computing.

Windows NT

In 1992, Microsoft will introduce a new product called Windows NT (New Technology). Windows NT is built on a modern, 32-bit, operating system kernel. Windows NT does not require DOS to function. However, it is compatible with the large installed base of DOS and Windows applications.

In addition to compatibility with existing applications, Windows NT includes the features required to meet the needs of the high-end desktop and server marketplace in the 1990s and beyond. To support large server applications, Windows NT provides completely symmetric multiprocessor support. With Windows NT, tasks are symmetrically distributed between processors on a per thread basis.

Windows 32-Bit API Developers and end-users have made enormous investments in Windows programming and Windows applications. Most of these applications have been developed to run on both the 16-bit 80286 processor and the 32-bit 80386 and 80486 systems.

Although highly capable, programs written to the Windows 16-Bit API, which is supported by Windows

3.0, are constrained by the memory limits inherent in 16-bit architecture. Code must be divided into segments which cannot exceed 64K (65,536 bytes).

This makes programming more difficult. It also imposes a performance penalty on high-performance 80486 and RISC-based systems. The success of Windows Version 3.0, made it clear that an easy migration path from existing 16-bit Windows applications to 32-bit programming interface was required.

Combined with the TrueType font technology first available with Windows Version 3.1, it is possible to draw truly device-independent graphics that the system can map to the display surface, including the rotation of bitmaps, fonts, and metafiles.

Excellent performance is expected on this platform.

The future of Windows

Millions of people are actively using Windows Version 3.0 today. Corporations and independent software vendors are making major commitments to Windows and investments in Windows applications. To protect this investment, Microsoft is evolving Windows into complete architecture.

Through separate implementations, Microsoft Windows will run on vastly different types of hardware; from pen-based notepad computers to multiprocessor and RISC systems. Windows NT and future versions of

Windows Enhanced-mode will support the Windows 32-Bit APIs. Designed to simplify migration of Windows applications from 16-bit to 32-bit, these APIs will also make it easy to develop new 32-bit Windows applications. They contain significant new features which

will enable a new generation of powerful Windows applications.

In addition, the Windows 32-Bit APIs will be used as the foundation for future versions of Windows under development at Microsoft. This technology, often called Information at Your Fingertips™, will make it even easier to use personal computers and will provide significant new functionality to Windows users.

...future versions of Windows Enhanced-mode will support the 32-Bit APIs...

Add up to 211K to your IBM compatible with QEMM-386 6.0 software

SANTA MONICA, Calif., August 13, 1991 — Quarterdeck Office Systems, Inc. today announced the industry's most powerful memory management and processor control program, QEMM-386 version 6.0.

The Quarterdeck Expanded Memory Manager-386 (QEMM-386) is an intelligent, high-performance expanded memory manager that allows automatic, or custom user-configured management of all of a personal computer's memory: conventional, expanded, extended and high memory. Version 6.0 brings additional power and capabilities to QEMM-386's Optimize program — which automatically configures memory and loads terminate and stay resident (TSR) programs and device drivers in high memory; adds

new ROM detection and utilization technology to QEMM-386 — which will deliver many PC users up to 115 kilobytes additional high memory; adds support for the "Suspend-Resume" feature common to many battery-powered laptop PCs; adds support for the Chips & Technologies SCAT Shadow RAM memory; and, gives Windows 3.0 enhanced mode users 8K - 24K more memory for DOS.

"The result is a more powerful, easier to use QEMM-386 that makes available more memory than previously thought possible," said Theresa Myers, Quarterdeck's president and CEO. "Version 6.0 senses memory utilization patterns and requirements and responds in a variety of new, more powerful

ways. The maximum memory gain to a power user could total an additional 211K of high memory."

Features new to Optimize include: The ability to process embedded batch files in a user's Autoexec.bat file. Previously, users wanting Optimize to see and process TSR load statements were required to include them directly into Autoexec.bat. This is no longer true. Users who like to keep their batch files small and organized by function will find this feature helpful; "Squeeze," a new capability that can temporarily increase the high RAM region in high memory during a program's load and initialization. This feature is help-

ful for programs that require more memory while they are initializing than they do once they are resident; Optimize now can automatically exclude portions of high memory accessed by device drivers and TSRs. This avoids conflicts with hardware that previous versions failed to detect; Users can now create "response files" that QEMM-386's LOADHI programs can use to get information about where and how to load programs high. This feature is valuable for network users who load TSRs from public batch files on the network.

Optimize now lets users view, browse and play with the list of device drivers and TSRs that the program has relocated to high-memory — allowing users to perform "What-if?"

analyses with their memory configuration.

STEALTH TECHNOLOGY

Additional high memory provided by QEMM-386 version 6.0 results from a new feature called Stealth. Quarterdeck's new "Stealth" technology hides a PC's ROM code, and makes its memory addresses mappable as High RAM, which is then usable for other purposes.

Until December 31, 1991, registered QEMM-386 and QEMM 50/60 users may upgrade, from any previous version, for a \$30 fee. QEMM-386 version 6.0 is now available at software stores around the country.

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AMROC's hybrid solid liquid fuel shows best of both worlds

by Ron Hess
Space Technology Writer

A recessed economy and an expensive, unpredictable American space program have sent aerospace firms searching for a cheaper, more reliable mode of transporting equipment into space. Many companies are returning to the old, reliable, and predominantly solid-fueled rockets, such as McDonnell Douglas' Delta and General Dynamics' Atlas rockets to lift industrial payloads into space, thus exposing the potential for commercial space programs.

Unfortunately, the reliability of the solid fueled booster is questionable, mainly due to the results from the 1986 Challenger accident. But, it seems that American

Rocket Company (AMROC) has a safer solution to solid fueled rockets, a hybridized solid-liquid fuel. This answer has been around since the 1940's, but has only recently proven its potential.

Hybrid fuel systems, as its name implies, is a mixture of the qualities of both solid and liquid propellants. Hybrid fuels are relatively safer than solid fuels, and less expensive than its liquid counterparts.

Hybrid fuel propellants are non-explosive, as compared to the highly volatile solid fuel stacks. The result is higher worker and third-party safety, which lowers costs by reducing insurance fees. Hybrid fuels are also less harmful to the environment than solid fuels. Hybrids emit the same by-products as li-

quid propellants: carbon monoxide, carbon dioxide, and water vapor. Solid fuel exhaust produces hydrogen chloride, which acidifies the environment, and aluminum oxide particles, which do not affect human life, but do compress to form debris in low Earth orbit.

In addition, hybrids are not affected by cracks and faulty O-rings. Once ignited, hybrids only burn where the fuel is oxidized, and may be shut down if necessary. The only significant disadvantage of hybrid rockets is that they do not produce as much thrust as solid rockets.

AMROC supports its choice of hybrid fuels based upon the safety factors and the low launch expenses, which will hopefully make them more competitive in the commercial launch market. American Rocket Company uses a polybutadiene fuel, which can be processed in ordinary industrial mixers without expensive explosion-proof processing equipment and automated facilities.

The cross section of the fuel core is in the shape of a wagonwheel, with liquid oxygen oxidizer flowing through the ports between the spokes. The polybutadiene fuel is ignited by pyrotechnic charges, and the only combustion occurs where the fuel is vaporized and combines with the oxidizer.

AMROC has produced a polybutadiene fueled launch vehicle, called Aquila, which is capable of putting 2500 lbs into a polar orbit, and 3400 lbs into a low Earth orbit. The total liftoff mass is about 220,000 lbs, with four booster stages, with the first stage producing 400,000 lbs of thrust.

Projected launch costs are initially expected to be \$3850/lb, but will likely fall

below \$2500/lb with improved vehicles. AMROC estimates further cost reductions with the possibility of a rocket launch team requiring only 12 people.

Like the Delta, Atlas, and other low-cost launchers, Aquila is designed to serve a market that has yet to emerge. But if the hybrid system is capable of reaching its projected safety and cost efficiency goals, then there may be a new technology based for small launch vehicles.

Unfortunately, the success of hybrid propulsion depends upon funding, whether from the government or potential customers. The American Rocket Company has shown the potential for a safe, clean, affordable new rocket. The next step is to exploit this potential.

Unfortunately, the success of hybrid propulsion depends upon funding, whether from the government or potential customers.

Orbiter update...

Atlantis - STS-44/DoD - VAB

Work in progress:

- Shuttle Interface Test to verify critical connections between the vehicle elements and the launch platform.

Discovery - STS-42/IML - OPF Bay 3

Work in progress:

- Preparations to remove the shuttle main engines.
- Re-installation of the reinforced carbon carbon T-seals and panels on the leading edges of both wings.
- Open the payload bay doors.
- Functional test of the radiators.
- Thermal protection system operations.
- Leak and functional tests of the main propulsion system.
- Testing of the communications system.

Endeavour - STS-49/INTELSAT Reb. - OPF Bay 1

Work in progress:

- Leak and functional tests of the auxiliary power units.
- Preparations to install the power reactant storage and distribution system tank set No. 3.
- Rigging of the left external tank door.
- Checks of the main propulsion system.
- Inspections of the main propulsion system pneumatic system.
- Installing strain gauges on the wings.

STS-42 Solid Rocket Boosters-VAB High Bay 1

Work in progress:

- Stacking of the right forward center segment.
- Transfer of the right forward segment to the VAB.

Arianespace to launch INTELSAT satellite next week

by Greg Rezendes
Space Technology Writer

Arianespace has scheduled the launch of their 47th Ariane mission for Tuesday, October 29, 1991. This mission will carry the INTELSAT VI F1 telecommunication satellite into a geostationary transfer orbit over the Atlantic Ocean.

The Ariane mission will be launched from Ariane launch complex nr 2 (ELA 2), in Kourou, French Guiana. The time of launch will be between 6:07 p.m. and 6:41 p.m., or between 8:26 p.m. and 8:59 p.m. EDT.

This mission will use the three stage Ariane 44L lifting vehicle with its four solid strap on boosters. This will be the eighth launch of the most powerful versions of the Ariane 4 family. It will lift the 4260 kg satellite into position for its five motor stages to achieve its proper position over the

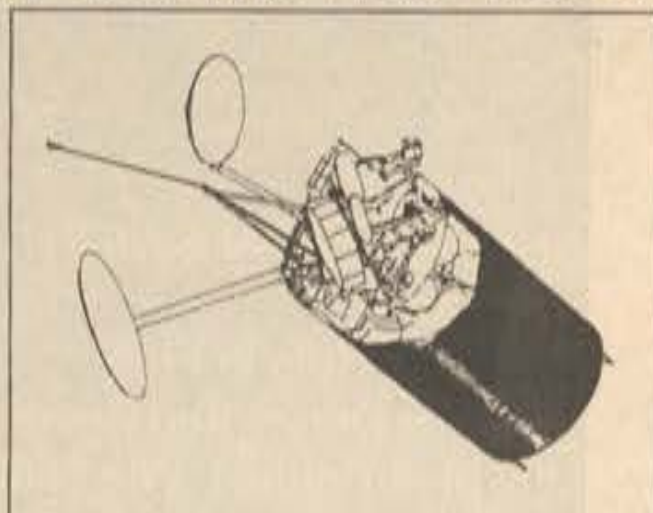
Atlantic.

The INTELSAT VI F1 built by Hughes Aircraft Company for Intelsat will provide international communications from its position over the Atlantic.

The International Telecommunications Satellite Organization (INTELSAT) is the non-profit cooperative of 121 countries that owns and operates the global communications satellite system used by countries around the world for international communications and by almost 40 countries for domestic communications.

Arianespace is a private corporation created by the European Space Agency (ESA) in January 1980. They are entrusted in producing and launching operational lifters.

After this launch, Arianespace has 32 more satellites which will be launched for an estimated \$2.4 billion. Of these, the United States has only three to be launched.



Communicating...

This graphic depicts what the telecommunications satellite will look like in space.

Fiery object most likely a Soviet rocket, scientists say

PORTLAND, Ore. (AP) - Experts say a fiery space object that caught the attention of many Oregonians Thursday night most likely was a spent Soviet rocket body re-entering Earth's atmosphere.

Dick Pugh, a meteor expert and high school science teacher, said the object flew west from central Oregon and probably disappeared over the Pacific Ocean.

Air Force Maj. David Griffard, a

spokesman for the U.S. Space Command, said Friday that the object most likely was the spent rocket body. It was on a trajectory through northwest Canada, Washington, Oregon and California, but apparently made an abrupt right-hand turn as it slammed into the atmosphere over Oregon, he said.

"It was bright or brighter than a full moon - in some cases it just lit things up like broad daylight," Pugh

said. "One person reported that the inside of their car just lit up."

Some observers in the Portland area associated the display with a minor earthquake that occurred 12 minutes later.

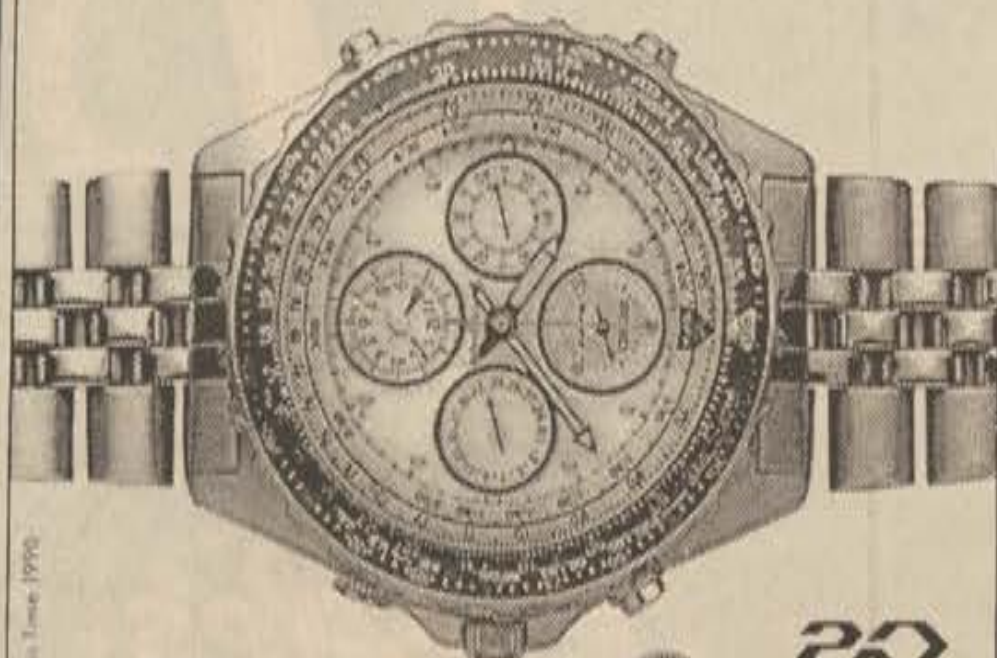
"My phone at home went crazy last night," said Bruce Spainhower, director of the Kendall Planetarium at the Oregon Museum of Science and Industry. "Any meteorite of suf-

ficient size to shake the ground that way would not have been seen by just a few people. It would have lit up the entire sky and made a tremendous hole in the ground."

Man-made debris ranging from large rocket boosters to small satellite parts re-enters Earth's atmosphere almost every day, Griffard said. He said the space command tracks 6,900 pieces of orbiting debris.

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Brothers of the Wind

by John E. Luke
Clubs Writer

Brothers of the Wind (BOW) held their annual cookout at the Embry-Riddle barbecue pit on Friday. BOW is a club with an interest in advancing the role of minorities in the aviation industry. The president is Eboni Wimbush, Vice-Presidents are Tony Velasquez and Michael Portelli, Treasurer is George Bowles, and Secretary is Carlos Salzer.

BOW held its annual picnic to help bring the club together and encourage potential members to join. At the picnic, hamburgers, hot-

dogs, soda, chips and potato salad were available. Members were very satisfied. The pumpin' sound system was also invoking hip-hop dance moves by several of the members.

BOW has several committees within the club to serve the needs of the membership. BOW may be the club for you, find out more about it by attending a meeting!

BOW meets on Thursdays at 1:30 p.m. in room E-611. At the next meeting, President Sliwa will be the guest speaker. Members are preparing special questions to ask Sliwa specifically about minority issues.

Army R.O.T.C.

by Erin Slaney
R.O.T.C. Writer

Army R.O.T.C. has a busy schedule this month! Along with the many educational labs, including First Aid, Individual Tactical Training (ITT), and Drill and Ceremony, Eagle Battalion has scheduled a field training exercise for the MS III class to be held at Camp Blanding on the weekend of the 19th. This exercise will involve platoon tactics, qualifying on the M-16 rifle and an opportunity for the MS III class to experience leadership in a field environment with

cadets from other universities.

Also, the following weekend of the 26th, the MS I and MS II classes will participate in an exercise to be held on campus. This training will include land navigation, ITT and water safety.

Exercises like this provide excellent training for basic skills, enhance class bonding and offer early opportunities to lead fellow cadets.

Army R.O.T.C. involves more than classes. If you have any questions concerning the program, please stop by Eagle Battalion located in M building.

Rugby Club

by David Hannigan
Club Mobile Home Driver

Due to a brain fart, last week's article was not submitted on time. But here it is one week late with so much to say. West Palm Beach started dropping like flies after the first game two weeks ago. The old men could not take the constant pounding thrown at them by the 'Nuts. Returning grunt Chuck May combined with the unstoppable Pager to give the 'Nuts a 10-8 victory. Subs were brought in on both sides as eyeballs burst open and collarbones cracked. The Modyes also showed great pride and determination as they stomped on West Palm in the second game. The game-winning try was scored by McFadden as he continues to show his stuff. On to bigger and better things. Last weekend the road trip to Tampa was a great success. Although the team lost the game, the 'Nuts scored left and right at the Yucatan Liquor

Stand. High scorers of that game were Jack Shield, Pete Padilla and a player that wishes to remain anonymous. Pete liked Tampa so much, he decided to stay with the fat chick for the whole weekend. Seeing as how Pete didn't have the money for the bus, Chuck "Greyhound" Hitchow did the disgusting thing and returned to Tampa to give him a ride home. Watch for Pete to be sucking up to Chuck in the next few weeks. Gabe had his kick blocked in an attempt, but walked away unscathed. By the time this is out, the 'Nuts will have already traveled to the State Championships and hopefully brought back a prize. But come on out and see us stomp on Gator guts as we play the University of Florida on the 26th at Jackie Robinson. Well, sorry to give such a "quickie," but it is time for my afternoon nap. As you move on to the comics section, I leave you with this thought: BE KIND TO ANIMALS, KISS A RUGBY PLAYER.

SCAT

by Americo G. Matera
SCAT Secretary

The answer to last week's question is: The TPE-331 is a fixed turbine and the PT-6 is a free turbine. The TPE-331 must be started at low blade so that the load on the starter is reduced. The trip to Orlando is

still on for this Friday. Consult the bulletin board for details. The question for this week is: A fuel truck is servicing a Cessna 172. How should the aircraft be grounded and from which points? Question submitted by Gene Zastera. If you would like to submit a question see me at the meetings.

Rotoaract

by Dan Karger
Club President

A new club is forming at ERAU. Rotaract is the college division of Rotary International. This club has strong ties to the businesspeople of the community. Seeking to unite the strengths of the established business community and the college community, this club hopes to provide ERAU service and community service.

This international club gives the ERAU student a means to develop his or her business skills and make contacts through activities and fund-raising events with business people and aviation industry personnel. Currently, the club is looking for some ambitious individuals to work on our ERAU Homecoming/Rotaract Fly-in project. Start making contacts now! For more information, contact Dan at 788-4366 or Box 5681.

Alpha Eta Rho

by Matt Hopkins
AHP Historian

Greetings to all brothers and pledges of AHP. I'm sure you are all having a productive week. The temperature has finally started to cool down a bit which definitely makes life more enjoyable. At least I think so.

The Football team's loss last week was quite a downer, but everyone played extremely well. We will get back on track I'm sure. Maybe if Scott utilizes his solo flex and transforms himself into a lean, mean, fighting machine, he can be our secret weapon. I think that's a fabulous idea.

The pledges are doing well as can be expected at this point. They

deserve a special thanks for volunteering for White Face Day last week. It was a great pleasure to see them band together for a very important cause. Their car wash this past weekend was also a success. Keep up the good work guys. They only get better with time.

I'd like to extend a late congratulations to Alumni brother Scott Roper who recently landed a job with Delta Air Lines. It is good to see a positive sign for the future of ERAU students. We haven't been seeing to many wonderful future outlooks recently. Hopefully, this all will change. All we can do is to continue to strive for excellence and be confident that it will pay off. Until later my friends, this is your happy historian signing off.

Soaring Club

Jason Tobin
Club Correspondent

The Embry-Riddle Daytona Beach campus now has an officially recognized Soaring Club! The Student Government Association (SGA) sanctioned the re-birth of the previous "Glider Club" at its weekly meeting on Tuesday, October 8, 1991.

The initiative to re-launch the Club began during Summer Term "A," 1991, when Aaron Williams (CS) and Drew Pearce (ACM) discussed John Rollins to serve as Faculty Advisor. Posters, an article in the Avion, and surveys circulated throughout various classes during the summer semesters generated a positive response for re-activating the Club.

The first objective in the plan to re-organize the Club was to assess the local availability of an airfield, tow planes, tow plane pilots, sailplanes and certified flight instructors. The Club was fortunate to discover not one, but two soaring operators in Volusia County located within a 30-minute drive from campus! Members were in the cockpits of Schweitzer 2-33s or a Blanik L-13 taking introductory flights within 24-hours after the first Club meeting on August 29, 1991!

The Club, which is for Embry-Riddle students, faculty, staff and their families, is already involved in many diverse, but related, activities. The Club has held 3 meetings, created a computer database for a roster of over 200 members, is evaluating the responses of its membership to a recently mailed 30-item questionnaire, revised its organizational By-Laws, and participated in the Fall Semester Activities Day.

The Club elected the following officers for the Fall Semester: Aaron Williams, President; Andrew Meyers, Vice President; Jason Tobin, Secretary; and Pete Zacagnino, Treasurer. Committees for Programs, Communications and Publicity, Training and Education, and Special Projects have been created for members to join and contribute to the Club's agenda of activities. An Advisory Committee of faculty and staff interested in the long-range planning and success of the Club has also been established. The current members include Dr. Ken Fleming (ABA), Dr. Paul Braim (HU/SS), Dr. "Skip" Smith (AE), Dr. David Kim (AE), Mr. Phil Reeves (AMT), Mr. Fred Mirgle (AMT) and Dr. Terry McGrath (AS).

Programs and activities planned for the future include joining the Collegiate Soaring Association for soaring meets/competitions with other colleges and universities, featured speakers known for their involvement and accomplishments in soaring, field trips to regional soaring sites, attendance at the Annual Soaring Convention in Charlotte, North Carolina, restoration of a Phoebe C sailplane for the Club's use as a static display and non-flying trainer, social gatherings and the design of a Club logo.

The Club's members continue to fly every weekend, and to enjoy a cost discount, with Precision Soaring at Edgewater's Massey Ranch Airpark and with Citrus Soaring at Deland's Bob Lee Airport. Additional information and details about the Embry-Riddle Soaring Club are available by contacting the club's Faculty Advisor, John Rollins, in A-202, or by calling

Clubs Policy

- All articles must be type-written, double spaced or on disk format (unformatted in Word Star or Microsoft Word).
- Deadline for submission of all club material is **Wednesday at 5 p.m.**, one week prior to publication.
- Photos may be submitted with club articles.
- All submitted material becomes property of the Avion with the exception of disks.
- The Avion reserves the right to edit all submitted copy.

Lambda Chi Alpha

by Nick Colella and Marc Fisher
Club Writers

Hey! The weekly countdown is six weeks left until exams. Yummie. This week is Greek Week and we're sure that Lambda Chi is kicking some butt. Be sure to come out and participate and cheer for us in the events. Last week was substance awareness week and we would like to thank Brain Farrel, Howdy and everyone else who took part in White Face Day.

Mini-conclave is November 1-3, so get ready for an all expense paid trip to the great outdoors. No showers! Expect to have some good food, mosquitos, and a lot of learning about Lambda Chi.

For the sports scene: Yes! The football team took its first victory of the season. Bill "The Howitzer" Moore threw for a total of 623 yards with 8 TD's and no INT's. Robbie "Rhino" Wetzig and Steve "Jump'n Jack Flash" Jehle combined their weights for a total of 139 lbs. to totally shut down the offense of the opposing team. Soccer is improving with each game under the close scrutiny of Coach "Dreamy Boy" Patrick.

Designated drivers for the week of Oct. 21-28: Rui "White Face" Pereira, Mark "Mr. Intramural...NOT" Hogan, Steve "The Mooch" Goddard, Barry "The Torch" Hill and Jeff "Woodwacker" Cook.

Mark "Tippy the Turtle" Raffa's Safety quote of the week: "Don't ruin scissors with your hands."

The top ten reasons why people didn't show up to Street Clean up.

10. Mark R. - Strange velcro accident (Information Classified).
 9. Mark H. - Writing his acceptance speech for "Athlete of the Month."
 8. Eric Q. - Free food wasn't served.
 7. Brent and Dan - needed another reason to show up at exec.
 6. Murf - was out practicing with the Kings.
 5. Shane - too busy trying to be "Dreamy."
 4. Vinny - too busy styling his hair.
 3. Keith Z. - too cool to pick up garbage.
 2. Eric S. - flight instructing at Top Gun.
- And the #1 reason why people didn't show up to Street Clean Up,

Management Club

by Kim Heidt
Vice-President, Management Club

The Management Club's last meeting featured Gerald Oppiger, President of the Lockheed Space Operations Corporation (LSOC), as guest speaker. Oppiger was informative about LSOC's role in the larger Lockheed Corporation and gave good advice on how to succeed in management. He also invited the club to tour the operation's facilities in Titusville next spring.

The next meeting will be on Wednesday, 23 October, in E-613 starting at 6:30 p.m. This is the last meeting to turn in semester dues (\$10). It will be a brief meeting to go over next month's schedule of tours and speakers and discuss fundraisers. After the business portion of the meeting is through, a video will be shown. Committees

will also meet at that time.

On Friday, 25 October, the Management Club will tour Simcom, a simulator company in Orlando. We will be leaving Riddle at 1:00 p.m. and will spend approximately two hours on the tour. More details about the tour will be discussed at tonight's meeting.

A big thank-you goes to everyone on the Industrial Files committee who helped send out letters to about 30 companies requesting annual reports, newsletters, brochures, etc. We should start receiving the material next week, and the files will be open by the end of October (just in time to be used for all of those reports due in mid-November!). For more information about the Industrial Files, contact Kim Heidt at tonight's meeting or through the Management Club box in Student Activities.

WERU

by John Luke
Club Writer

Steve Graff, president of the WERU Radio Station Broadcast Club, was the first to attempt "beat mixing." Before your imagination runs wild, let us tell you that "beat mixing" is the technique of mixing songs of similar beat speeds so that there is no apparent interruption in the playing of music. This is a part of the training activities to prepare WERU to go on the air, soon; hopefully.

Steve Weinreich from Total Entertainment told club members about equipment set up and various other aspects of being a disc jockey. He brought club music which was used to allow members to learn beat mixing. After Graff tried, many other club members volunteered to try to mix.

The WERU disc jockey service

will be performing at several parties in the upcoming month; Sigma Chi, AFROTC and Lambda Chi Alpha, to state a few.

WERU Riddle Radio T-Shirts are now on sale. The club's T-Shirt has a hip-hop cool design of an antenna and was designed by Steve Graff and Todd Umbrecht last Fall. The shirts can be purchased from Logan Chalfant at room 257 of Dorm 1 for \$8.00 (\$6.25 for club members who pay dues). The shirts will also be on sale at club meetings.

The WERU Broadcast Club meets bimonthly, Wednesdays at 8:00 p.m. The next meeting is Wednesday, October 30. Come out and learn more about Riddle Radio! Anyone with any questions or ideas for the WERU Broadcast Club should contact Steve Graff at 760-7487 or box 6562. All are welcome to participate!

Rowing Club

by Ed Kohinke
Club Writer

The ERAU Rowing Eagles have gotten things off to a good start, with organized training sessions already happening and three boats ordered from the factory. Turnout has been good for the start-up practices, which are proceeding at an easy pace so that all who are interested in the club can keep up and improve through the season. Meeting at the tennis courts Monday through Thursday from 18.30 to 20.00 and from 06.30 to 08.00. Tuesdays and Thursdays rowers have done stretching, calisthenics, running and just a sample of ergometer work. This, with some weight training, is what most practices will consist of until the boats

are delivered late this semester. In addition, arrangements are being made with other Florida schools to use their equipment on some weekends.

Administratively, the club has become a guest member of FIRA, the Florida Intracollegiate Rowing Association, with club president Louis Cinquante attending the meetings as our representative. Permanent membership happens when a team gets voted in due to racing successes or to proven club stability over a two year period.

A trip to the Freshman Novice Regatta is planned for November 16, in which ERAU will be observing. Also upcoming will be a T-shirt sale and several other fund raisers aimed at chipping away at the large costs of the rowing equipment.

Safe Environment

Good EVENING, friends. Once again, I, Walter Thugspitter, have been chosen to be spokesperson for this abomination.



Today's cartoon has been... detained due to the use of cryptic phrases featured in a sketch portraying president George Bush at the opening of the Thomas harassment hearings.



The cartoon showed the president and first lady in Kennebunkport, viewing the opening discussions on T.V. Mrs. Bush then says: "Pass the Kielbasa, George, It's going to be a long one."



Little or no sexual overtones were intended. Gas is cheaper on the south side of town, and I fully support the Bush administration.



by the Committee to elect Reagan for-Ever

Top 10 reasons to eat at Morrison's

10. The cheerleaders eat there.
9. You are still trying to build a place setting for eight.
8. Housing has confiscated your microwave.
7. The "right turn only" makes the walk to McDonald's just too long.
6. They don't make the doughnuts.
5. Domino's wants a tip.
4. The imaginative ways they "rework" food.
3. The management is always courteous and apologetic.
2. The mailroom lost your "care package."
1. Green peppers, green peppers, green peppers.

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See Student Activities

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Beach Clean Up

The Alpha Psi pledge class to Sigma Chi will be holding a beach cleanup. Anyone who is interested contact Zach Bowers at box 7666.

Influenza Shots

On Wednesday Oct. 23 - 24 Health Services and the Human Resources Department will sponsor a reduced fee, on-campus clinic for students, staff, and faculty who wish to have this year's flu vaccination. Nursing staff from the Walk-In Medical Treatment Center will be at Health Services in the Student Center from 2:00 to 4:00 p. m. to administer flu shots for a fee of \$15.00. No appointment is necessary!

Become an Air Traffic Controller.

Embry-Riddle is sponsoring an FAA Air Traffic Controller Specialist Exam on Saturday, November 16 in room W-306 at 8:30a.m. **Take the ATC Exam** For more information please contact Marvin Smith at 226-6448.

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Calvin and Hobbes

by Bill Waterson



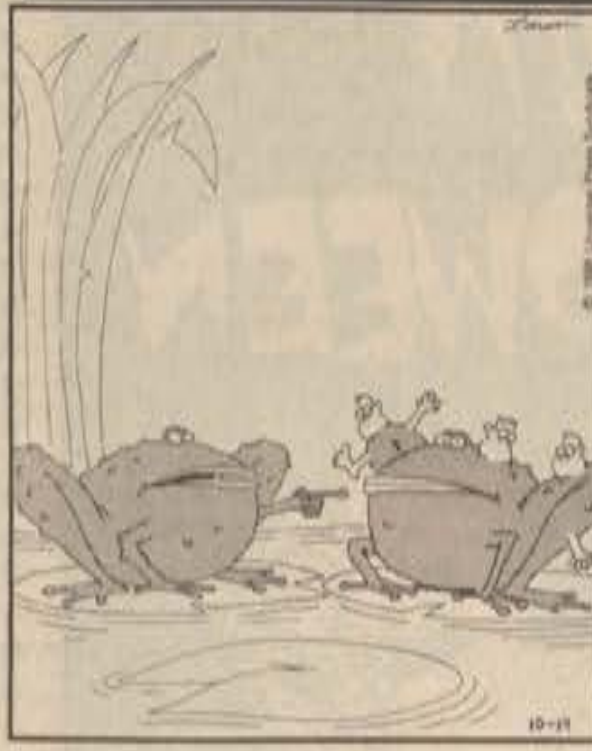
Mister Boffo

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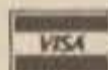
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Griffith is "Grande" on CD

by Jeff Ward
Special to the Avion

Nanci Griffith's newest release, *Late Night Grande Hotel*, is an excellent combination of keyboard, string and vibrant emotional vocals. Miss Griffith has a style and accent that this reviewer finds refreshing. It is becoming rare for an artist not to be compared to another and I can make no such comparison.

Phil Everly, one of the many musical guests, takes part in a dueling vocal for the first cut, "It's Just Another Morning Here." The vocal sounds like the old style country twang, but it is not hick music.

Through the complex lyrics of these songs, Nanci Griffith tells stories of love, sorrow and hard times. There is a little bit of comic relief too. One particular cut, "One Blade Shy of a Sharp Edge," is amusing. It includes the title line as well as "and you think that true love is around the bend; you've been around the bend since age 10."

"The Power Lines" has especially complex lyrics with a powerful, deep message. I think she is talking about a lost love who finds himself on the road with nowhere to go; however, I wonder whether or not I truly and thoroughly understand the entire meaning. "Hometown Streets" tells the story of leaving home and friends to achieve goals only to find out that what is needed to accomplish these goals are the friends that were left behind. "Down n' outer" is about someone who is broke and is trying to get a job but will not be granted an interview because of lack of dress clothes. "San Diego Serenade" tells us that we never really appreciate what we have until it's gone.

Overall Nanci Griffith proves to be a competent music writer and performer. While none of these tracks are destined to be chart toppers, they are good to listen to when you are with your main squeeze.



That country twang... Nanci Griffith does her best on *Late Night Grande Hotel*.

Other People's Money is not worth one dime

by George Clarke
Diversions Writer

I just had to see *Other People's Money*. It was highly touted in newspaper ads, and the amount of air time its commercial advertisements received rivaled the length of the Thomas confirmation hearings. Well, I finally saw it last Friday night. Was it as good as everyone says? More on that later.

Danny Devito plays Lawrence Garfield, a mean and ruthless corporate takeover guy. (At least he is supposed to be mean and ruthless - Devito never really projects himself as amoral). Garfield gobbles up companies for breakfast each morning, along with several boxes of Dunkin' Donuts, which are his fetish.

But he bites off more than he can chew when he tries to go after a small-town wire manufacturing company, headed by the stout and highly ethical Jorgy (Gregory Peck). The ensuing legal battle is a head-to-head fight between the opposing philosophies of each man; Jorgy's battle being fought by proxy - his daughter, Kate, serving as his lawyer.

Other People's Money is billed as a comedy. This is not quite true. I laughed maybe once - at a very sexist joke. (Most of the film's jokes are sexist - don't worry, I felt guilty later). There are light moments in every movie, and this one had no more than the average.

Other People's Money is not a romance, either. The two main char-

acters sit around and flirt the whole time. The most romantic part of the film is a scene in which Kate orders Garfield to grasp his own genitals and speak to them. The two kiss once. It isn't a big one, either. Not even any tongue.

Throughout the film there is a strong social comment against Japanese big-business. The social comment is relevant; the placement of it in this forum may not be.

On the plus side, the acting is good. Penelope Ann Miller, as beautiful as she is, plays a lawyer nicely. Devito is okay as a cutesie bad guy, although he must love cutesie bad guy parts, since they are all he ever plays. And hats off to Gregory Peck. He is getting up there in years, but he is

still one of America's best actors. He plays the part of a proud plant manager as if he was a proud plant manager all his life.

But the film just doesn't work. It is neither funny nor romantic nor philosophical. About all I got from the movie is the realization that Danny Devito, when fully erect, stands less than four feet tall. It would have been nice if maybe Kate and Garfield shared a romantic interlude together; perhaps she could have held him in her hands and whispered sweet nothings to him, as I often do with Yoda action figures. Yes, I wanted to sigh more. I wanted to laugh more. I wanted a lot more than I got. *Other People's Money* probably won't get any more of mine.

Other People's Money is billed as a comedy. This isn't quite true. I laughed maybe once - at a very sexist joke.

Rush should have slowed on their new album



Snake Eyes... Rush rolls the bones.

by Keith Towers
Sports Editor

With the release of *Roll the Bones*, a new album by the prolific

three-man rock group Rush, comes a lackluster performance from the band. The album is the first to be released since *Presto*, which was two years ago, and in that time, the group seems to not have had many great creative insights to contribute to *Roll the Bones*.

There are three songs to note that stand out from the rest of the crowd on the album. "Dreamline," the very first song on the album, is the song that will probably do the best as far as single releases go. More emotion is shown in this one song than in any other song in the album.

The lead vocalist, Geddy Lee, seems to be going through the motions, and does not perform with

feeling on any other song besides "Dreamline."

Another song of interest is "Where's My Thing (Part IV, 'Gangster of Boats' Trilogy)." This instrumental proves to be a nice variation in a monotone album. The track has a jazz quality, with a very good bass line and a nice beat is put out by drummer and group lyricist Neil Peart.

The last song to note is "Heresy," which has some stirring lyrics referring to the recent fall of Communism, and asking "All those precious wasted years; 'Who will pay?'" The beat is that of marching soldiers, and the guitar pumped out by Alex Lifeson is talented, yet Lee

seems to have no interest in making the song come alive with emotion.

The rest of the songs are just average Rush. They include songs with either disinterested singing or no profound meaning.

The hottest prospect of all of them is the title track, *Roll the Bones*, while all of the others will fall short of reaching any charts. These include "Bravado," "Face Up," "The Big Wheel," "Ghost of a Chance," "Neurotica," and finally "You Bet Your Life."

Only avid Rush fans should purchase this album, which before too long will be on the discount rack at K-Mart anyway.

Prince teams with The New Power Generation

by Brad DeMay
Photography Editor

Prince is up to his old tricks again. His new album *Diamonds and Pearls* is another exploration into any type of music that he has not done before. For this album Prince teamed up with The New Power Generation.

In this album there are a unique mix of beats, instruments and vocals. The first and probably best song on the album even has in it what sounds like a sitar. There is some good music in this album.

However, there are some things that don't quite work. The first and most noticeable fault is that the album plays like a radio station. The music style oscillates wildly from music that sounds like


current rap, to music that sounds like top forty and then to music that sounds like it came off of one of his solo albums. If you have the CD, searching for the music you are in the mood for

would not be so difficult, but if you have the tape searching around for that certain track could be annoying.

As an artist, Prince has always been socially aware, and it has been reflected in his music. This album is no exception to the rule. One thing that this album doesn't contain, that many other of Prince's albums have contained, is any outright controversial material.

In this album, there are a unique mix of beats, instruments and vocals.

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King plagiarized dissertation

BOSTON (AP) - Martin Luther King Jr. plagiarized the writings of others in his doctoral dissertation, but that act shouldn't tarnish the Nobel Prize winner's reputation as a civil rights leader, a panel of scholars said.

The panel also said its conclusions should not result in Boston University rescinding King's doctorate, adding that his work still has scholarly value.

King, who wrote the dissertation in 1955, was assassinated in 1968. He won the Nobel Prize for peace in 1964.

"While Dr. King was at fault for failing to cite sources accurately and fully in many parts of the dissertation, this fact does not detract from his enormous contributions as a leader in the civil rights movement and as a symbol of accomplishment and vision for all people," the committee said in a report released Thursday.

The group recommended a letter spelling out its findings be placed with the copy of King's dissertation in the university's Mugar Memorial Library.

The full report also will be filed there. BU Provost Jon Westling has accepted the committee's recommendations.

"While Dr. King was at fault for failing to cite sources accurately and fully in many parts of the dissertation..."

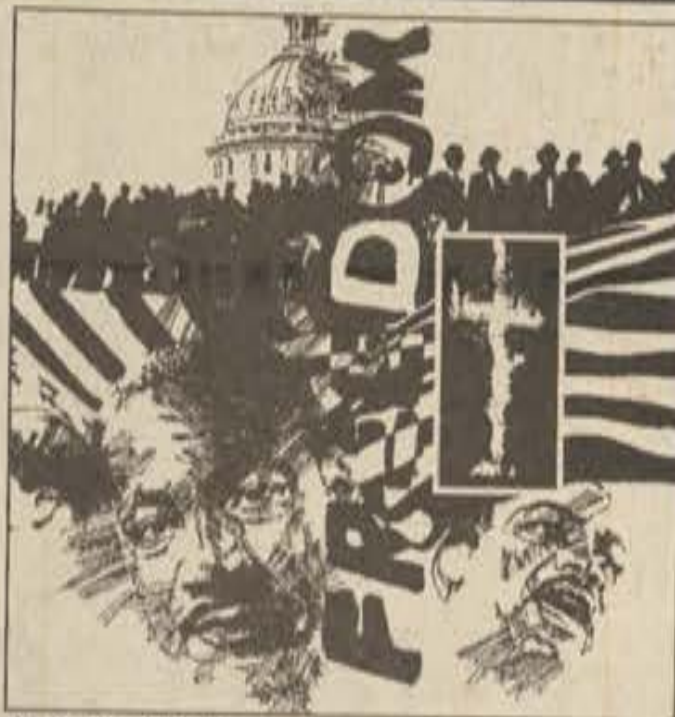
"I think it is so good to get this behind us," said John Cartwright, Martin Luther King professor of social ethics at BU and a committee member.

The report said King "plagiarized in the dissertation by appropriating material from sources not explicitly credited in notes, or mistakenly credited, or credited generally and at some distance in the text from a close paraphrase or verbatim quotation."

Cartwright said the committee refrained from speculating about why King did not properly attribute some material.

The committee was established by the university in November 1990 to determine whether plagiarism allegations against King that surfaced earlier that year were true.

King wrote "A Comparison of the Conceptions of God in the Thinking of Paul Tillich and Henry Nelson Wieman" in 1955 as part of his requirements to attain a degree of doctor of philosophy.



Not so great...
A committee has found that Martin Luther King Jr. plagiarized his dissertation.

Gekas tries to limit death penalty appeals

WASHINGTON (AP) - An amendment intended to limit federal death-penalty appeals while expanding capital punishment to a handful of additional crimes has been endorsed by the House.

The amendment, sponsored by Rep. George Gekas, R-Pa., was added to the chamber's omnibus crime bill Wednesday, 213-206. The amendment was supported by President Bush and state Attorney General Ernie Preate Jr.

In a statement released by his office, Gekas said the amendment would "curtail those appeals and bring swift and certain judgment to the convicted, coldblooded killer where a jury has already found him guilty of murder." The House Wednesday began considering dozens of amendments to the crime bill; the debate was expected to continue today. Gekas' proposal would extend the federal death penalty to sexual abuse and child molestation cases that result in death; murder in the course of committing a drug felony; and gun murders in violent federal crimes. It also expands the definition of a drive-by shooting that would be subject to the death penalty.

Another provision would require death-row inmates to file federal post-conviction appeals within 90 days after exhausting their state appeals, a change intended to clear impediments to executions. Other changes would allow the death penalty to apply in certain cases when a defendant showed a "reckless disregard for human life." The bill previously required the act to be intentional before the death penalty could apply.

Earlier Wednesday, Preate, speaking after a ceremony at the White House, said the Democrat-drafted bill would "obliterate" the state's death-penalty law unless amendments from Gekas and others were approved.

The House crime legislation would ban 13 types of assault-style weapons, authorize spending \$1.1 billion for state and local police and apply the death penalty to 48 federal crimes.

Bush has favored the Senate's legislation, which would provide more aid for police and apply looser standards for 51 capital crimes. Like the Gekas amendment, the Senate version would allow executions without requiring prosecutors to prove defendants intended to kill their victims.

The Gekas amendment also was consistent with the Senate version in limiting to 90 days the period in which death-row inmates could file federal appeals challenging their state convictions.

Shoshone-Bannock Tribes protest nuclear shipment

PORT HALL, Idaho (AP) - A third shipment of nuclear waste from Colorado reached Idaho early Wednesday en route to the Idaho National Engineering Laboratory, but the shipment was turned back at the edge of the Fort Hall Indian Reservation.

Police officers of the Shoshone-Bannock Tribes stopped the truckload of radioactive waste at the reservation boundary.

Tribal Officer Ira Waterhouse Jr. issued the driver a citation for violating a tribal resolution adopted in January banning nuclear waste shipments until the Department of Energy reaches agreement with the tribe on how the shipments will be handled.

Marvin Osborne of the Fort Hall Business Council, said the Shoshone-Bannock Tribes wanted to force the Department of Energy to pay attention to the resolution.

"They sort of made us mad and a little upset for ignoring us. They thought they could push us around," Osborne said. "We turned them around. We wanted to cite them and stop them, let them know we're dead serious."

The 550,000-acre Indian reservation in eastern Idaho is southeast of INEL, a federal nuclear research installation. Interstate 15 runs through the reservation north of Pocatello.

The shipment was from the decommissioned Fort St. Vrain nuclear power plant at Platteville, Colo., operated by Public Service Co. of Colorado.

After the state lost legal battles to stop the shipments, two truckloads entered the state earlier this month.

The tribes filed a federal court lawsuit on Tuesday, contending the shipments violated property right terms of the

federal government's 1869 treaty with the tribes, provisions of the National Environmental Policy Act and the Indians' constitutional rights.

There was no immediate court ruling, but tribal officers accomplished the same thing, at least temporarily.

Idaho State Police said the waste shipment arrived at the Port of Entry checking station at about 1 a.m. After an 80-minute inspection, the truck was allowed to proceed north.

State Police said three men were arrested at Inkom they attempted to block the truck, one of them for the second time.

The men were identified by State Police as Bill Chisholm of Buhl, Will Small of Blaine County and Ron Folkings, Buhl.

All three were booked into the Bannock County Jail at Pocatello on a charge of failure to obey a lawful police order. Chisholm also was arrested Oct. 5 when the first shipment arrived.

The truck turned around at the Fort Hall Trading Post and went back to Inkom.

Steve Sherrow, coordinator of the shipping project for Public Service Co., who was in a car following the shipment, said it wasn't immediately decided whether the shipment would return to Colorado or seek an alternate route to INEL that does not cross the reservation.

Mark Severts, director of media relations for Public Service, said what comes next is under discussion. "We are discussing with the Department of Energy, the Nuclear

Regulatory Commission and Idaho State Police to decide what is the best thing to do," he said. "I do know they are looking at a variety of options."

Seeking an alternative route is under consideration, Severts said, but the route taken would have to meet NRC approval.

Joe Gilliland of the regional NRC office at Arlington, Texas, said the agency is monitoring the situation.

"We have an inspector in the area and we are being kept informed on the status of the shipment," he said.

Severts said Public Service feels it is being caught in a tug-of-war between two agencies.

"This is very unfortunate. Public Service is caught again between two feuding entities, the Department of Energy and the Shoshone-Bannock Tribes.

We are very convenient pawns for the Sho-Bans to force the Department of Energy to pay attention to their needs," Severts said. The lawsuit filed by tribal attorney Jeanette Wolfley seeks an immediate temporary restraining order and a permanent injunction against the shipments.

It also asks the court to order the Energy Department to conduct an environmental impact statement on shipping, handling and storing the waste.

The Energy Department and Public Service have said they plan to ship 247 truckloads of spent fuel rods, totaling about 300 tons of waste, within one year.

About 120 truckloads of waste shipped from Fort St. Vrain near Denver between 1980 and 1986 already is stored.

Police officers of the Shoshone-Bannock Tribes stopped the truckload of radioactive waste at the reservation boundary

The tribes filed a federal court lawsuit on Tuesday, contending the shipments violated property right terms of the federal government's 1869 treaty with the tribes...

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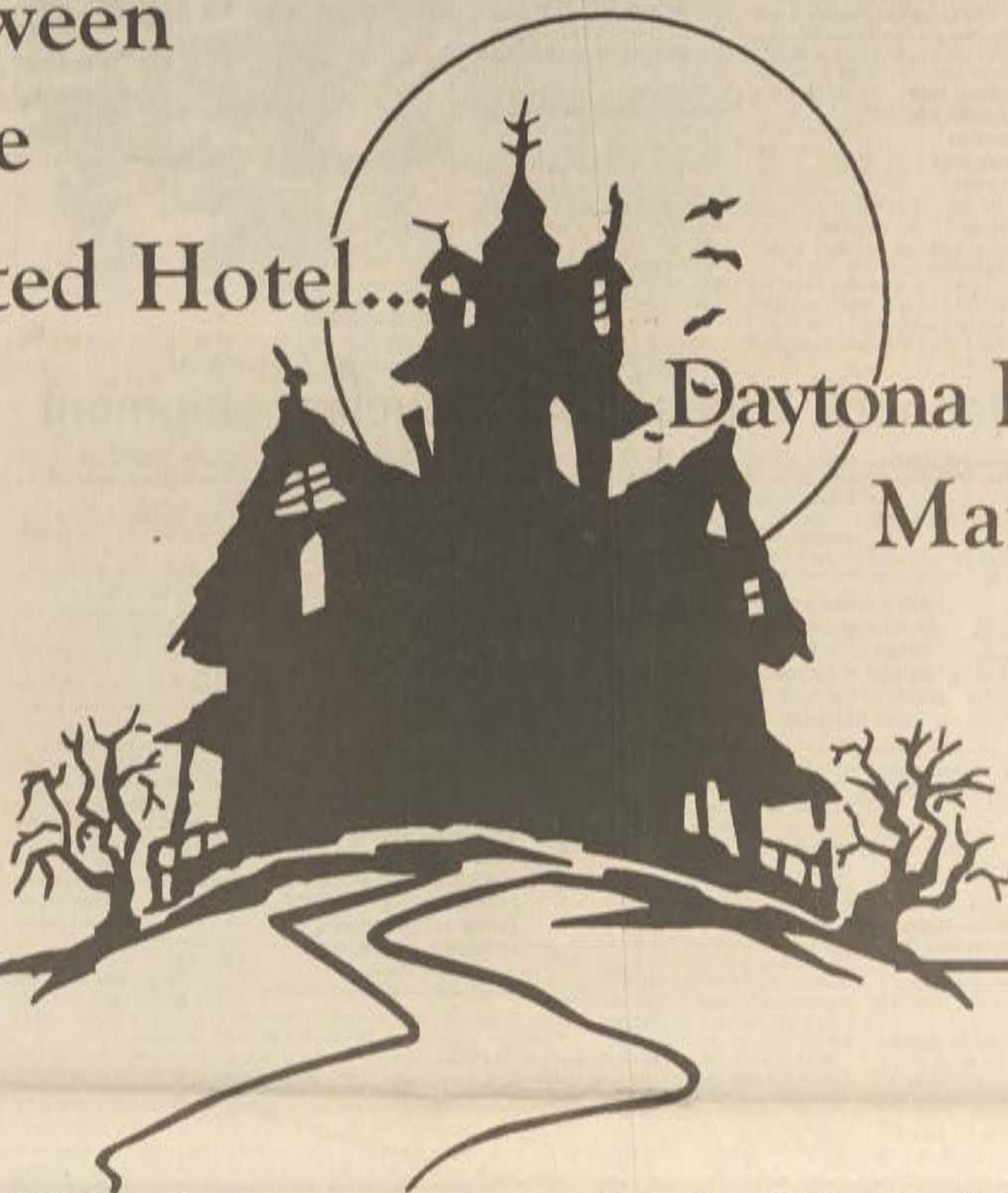


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