5-18-1988

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Embry-Riddle Aeronautical University

eagle
An Award-Winning Student Newspaper

Setbacks lead to slip in *Discovery's* launch

By Chip Zodrow
Space Technology Editor

The National Aeronautics and Space Administration (NASA) is nearing its return to the manned space program with the arriving launch of the Space Shuttle *Discovery*. The target date for the launch is set at this time to be no earlier than Aug. 22, but very near that date.

Over the past few weeks, the shuttle program has encountered both setbacks, which led to the adjustment in the launch date, and improvements. The major event was the explosion at the shuttle fuel processing facility in Utah. Only one person was killed in the blast that rocked the entire city. Overall, the disaster will not effect the program to any great extent, but it did hurt the Space Shuttle program's vulnerable image.

Also in the news was the test of the troublesome solid rocket boosters in Utah. Morton Thiokal states that the tests at this time appear to show that the redesigned boosters will be nominal for a launch in the near future.

But there is a "minor" problem with the booster's insulation bond becoming separated. The seal is in between the booster segments and assists in keeping the segments together and free from burnthrough. Much more of the data from the latest test must be analyzed before the booster is given the final passing grade.

In the case of the nozzle boot ring disruption and failure in the booster test held in the early part of this year, there have been no positive explanations to the separation and failure. This anomaly is another contributing factor the setback in the launch date, although the type of nozzle boot ring that failed in the test will not be used in the launch of *Discovery*.

The newly designed crew escape system was also recently chosen. The telescoping bailout pole will be used. It consists of a nine-foot pole for crew bailout under controlled conditions at or below 20,000 feet. This was chosen as a safer alternative to the tractor rockets for the emergency escape.

As of this printing, the roll out of *Discovery* to the launch pad will occur on June 15, the flight readiness firing of the orbiter's main engines will take place on July 10, and the payload will be moved to the launch pad on July 17. NASA spokesman George Diller mentions that these dates are expected to change, but not by more than a few days.

The primary payload for the upcoming shuttle launch, STS-26, will consist of the Tracking and Data Relay Satellite (TDRS).

The space program will benefit from the satellite by its capability to expand the region of space that will be covered by its relay of voice, communication, and data. The satellite arrived early Monday morning, and is presently undergoing final testing.

See next weeks Space Technology in the Avion for an exclusive report.

Professor Wang retires after 23 years with ERAU

by Phyllis A. Salmons
Associate Professor of Physics

One of Embry Riddle's most loved and respected professors, Ming Hsien (Ken) Wang, will retire this summer after 23 years of teaching in the Aeronautical Engineering Department. Professor Wang is one of the most fondly remembered faculty according to Engineering Alumni.

One of his former students, Rick Hebert, class of '86 says: "He has become somewhat of a legend amongst the engineering students, and the rest of Embry Riddle. He once told us during a lecture that in China if a student learns from an instructor, then the student always holds great respect for that instructor. I respect him both as a fine instructor and a wonderful person." One of his colleagues of the Engineering Department said: "When a former engineering student comes back to visit, the first person he or she looks up is Ken Wang."

Ming Hsien Wang was born in Leho, in China's Kiangsu Province. During the Sino-Japanese war in the 1930's, he was forced to leave his family and flee to the western part of China. After graduating from high school in 1938, Wang entered the Chinese National North-Western College of Engineering and received a Bachelor of Science in Aeronautical Engineering in 1942. He received his Diploma from the Nationalist Chinese Air Force Technical School (advanced class) in 1944 and served in the Chinese Air Force for 18 years.

When World War II was over, he went to Nanking to work in the Wing and Fuselage Assembly Department of the Chinese Nationalist Air Force First Aircraft Manufactory. Later he worked in the Design and Modification Department of the Chinese Nationalist Third Aircraft Manufactory and as the Head of the Aircraft Maintenance Division at the Headquarters of the Chinese Air Force. He taught at the Chinese Air Force Technical School in the areas of aero engines, engine dynamics and thermodynamics.

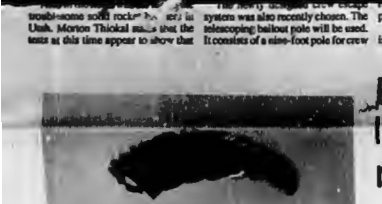
He met and married his wife in 1949, a few months before the Chinese Communists took over the government. As an employee of the National Air Force, Wang's position on mainland China was none too secure. When the order came to move to Formosa (also known as Taiwan) in 1950, the Wangs left mainland China, even though it meant leaving behind family, friends, and all their possessions. "Silver dollars we threw on the runway," Wang recalled. "To get as many (people) on the planes as possible, we had to throw everything away, including silver dollars. If you wanted money, you stayed on the runway - if you wanted life, you left on the plane."

Wang first came to the United States in 1953, when he was sent to attend the U.S. Ordinance School in Aberdeen, Md., for several months. Upon his return to Taiwan, he was an instructor at the Taiwan Provincial Taipei Institute of Technology in Mathematics. He also continued to serve in the Chinese Air Force until 1960.

After his honorable discharge as lieutenant colonel in 1960, Wang ac

See WANG page 6

Fire destroys local landmark chruch, nearly pastor also



By Martin F. Smith
News Editor

A devastating fire destroyed a church and bookstore at the corner of Volusia and Palmetto avenues Saturday night.

28 fire fighters from all six Daytona Beach fire stations responded to the largest blaze here in nearly ten years.

According to Assistant Fire Chief George Sewell, the call came at 8:46 P.M. Six trucks, including an aerial unit, responded to the alarm. Fire fighters from Holly Hill, Ormond Beach and South Daytona had to staff the six Daytona Beach stations to maintain response readiness.

Police blocked traffic on Volusia and Palmetto for several hours to protect the public and allow fire fighters space to contain the blaze.

There were no injuries in the blaze, however, the churches pastor, Eugene Mobley, was initially feared to have been trapped inside. Officials located Mobley a short time later.

The Christ the King Ministries church, 201 W Volusia, was one of Daytona's oldest churches. The Christian Book Nook, an independent business in the structure, was also destroyed in the blaze.

Fire fighter's were successful in their efforts to keep the blaze from spreading to nearby wooden buildings.

Golden Knights jump start Skyfest

By Chip Zodrow
Space Technology Editor

Most people ask, "why jump out of a perfectly good working airplane?" The Golden Knights will tell you that because it is the ultimate rush, or it's not a job, it's an adventure.

The U.S. Army Parachuting Team, the Golden Knights, jump out of airplanes for crowds throughout the entire world. Since their organization in 1959, they have performed up to 280 days a year in front of millions of air-show goers.

Spectators at this years past Skyfest were all given a taste of skydiving. Presently, the team has ten jumpers per show. Sunday's, show gave the crowd a sight of Sgt. Chuck Roberts making a "flag jump," Sgt. Jake Brown and Sgt. Nick Nichols making a "baton pass," Sgt. Ken High performing a "cutaway," Sgt. Ed Rivera, Sgt. Mark French, Sfc. Ben Currin, Sfc. Gary Mohler, Sgt. Bill Godwin, and Sgt. John Steele all making group jumps.

To make a safe and proper jump, the jumper must begin the process on the ground. All the gear must be checked and assessed that it will perform flawlessly, because at 12,000 feet, a skydiver does not need his/her equipment to malfunction.

The pilot, co-pilot, crew, and jumpers then climb on board the Fokker Friendship 27 and prepare to fly into the wild blue yonder. As the plane climbs up to 12,000 feet, one of the doors is left open for the jumpers to spot where the airport exactly is. Approximately 1,500 feet up, a streamer is dropped to test the direction and speed of the winds. From this rough, but consistenuly correct data, the jumpers direct the pilot to the left or right to line the plane up with the wind and the drop-zone.

As the plane climbs, the tempera-

See KNIGHTS page4

Student Employment is beneficial for students

By: Richard F Beaumont
Student Employment

For the past few years, Embry-Riddle has offered a program for its students that saves the university money, allows the students to get some of their tuition back and offers valuable experience and training.

It is the Student Employment program.

Right now more than six hundred on-campus jobs are held by students. This program also helps students find a large variety of off-campus jobs offered by local businesses that are called into the office.

The program's office is located in the south-west corner of the first floor of Spruance Hall. It has a list of on-campus jobs in the office and bulletin board outside the door of off-campus opportunities.

The office handles most of the on-campus student employment, with the exception of Epicure Food service, Housing's Resident Advisers, and one or two other departments. A grade-point average of 2.0 or higher is required to work on-campus. Some sections may need special availability or basic abilities to work.

When I worked for Heating, Ventilation, and Air-Conditioning (HVAC), they needed me at any time between 9 a.m. and 5 p.m., Monday through Friday. They also asked if I was able to lift 100 pounds and had a valid driver's license.

The computer lab employs computer majors who work anywhere between 7 a.m. and 11 p.m., while physics lab instructors are mainly engineering majors. Many other on-campus jobs exist varying from test grading and secretarial duties in Spruance Hall and the Academic Complex to landscaping and lawn maintainence for the Physical Plant.

...more than 600 on-campus jobs are held by students. This program also helps students find a large variety off- campus jobs...

On-campus employment has benefits worth looking into. Right now most departments begin at minimum wage, but some will start at a higher rate in tougher jobs like grounds keeping. As of May 1, 1988, all on-campus jobs began at a minimum hourly rate of $3.75 per hour. The job training and experience itself can be a great benefit later in life.

Computer lab assistants learn to operate a network system much like the one used by many corporations and business offices today. I learned how to repair small problems in a single-unit air-conditioner, and how to trouble-shoot larger systems like the one in Dorm 1 as a result of my on-campus job.

The opportunity of securing an on or off-campus job is readily available to anyone who takes the time to visit the program office in Spruance Hall. The best time to apply is at the beginning of a semester before the best jobs are taken.

On-campus work can be fun, beneficial and convenient, and is a good idea for anyone who just needs a few extra dollars to survive each semester.

Inside this Award winning issue

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On-campus work can be fun, beneficial and convenient, and is a good idea for anyone who just needs a few extra dollars to survive each semester.

Inside the Avion this week:

[redacted]

Skyfest '88 was quite spectacular. With such performances as the Golden Knights, the Ray Ban Gold, and the Thunderbirds, how could it be anything less? And perhaps the most remarkable event was the rare public appearance of the B1 bomber.

Still, the coordination between the University and the Skyfest committee left much to be desired. The timing was only slightly better than last year's Skyfest. At least this year the bulk of the University population was still in Daytona to participate byt that was the only positive aspect of the timing of this year's Skyfest.

First of all, Skyfest was held during finals weekend. The University rescheduled the Saturday afternoon finals to Friday so that Riddle students would be able to enjoy the airshow. However, in rescheduling two details were overlooked. The first is that the University eliminated the study day.

Study day has always provided a bit of a buffer between the last class and the final so that students would have a chance to study without being forced to cram. Yet this year, students found themselves with less than 24 hours to learn the concepts presented in the last class and then prepare for a final which more than likely is cummulative. As a result, many students felt they had to sacrifice sleep for studying which in turn resulted in exam performance that was not as high as it could have been.

The second problem with scheduling exams on Friday was the same one the University had tried to eliminate: distraction. What the University seems to have forgotten is that one aircraft used for static displays have to be flown in and they usually do so the day before Skyfest starts.

The Riddle student is often found gazing at commercial jetliners that take-off and land several times a day. To an outsider, it must seem like mass hysteria when they see the entire campus stopped and staring because an atypical aircraft is at Daytona Beach Regional. Knowing this, it's not too hard to figure out how impossible concentration is when aircraft such as the C-5, the Harrier and the KC-135 are inbound during a final exam.

Surely there is a solution to this dilemma. Perhaps the University could have scheduled some of the finals on Sunday morning or the Friday that followed finals. Or another solution might have been to allow more of the instructors to exempt students from finals if they are satisfied with their grades and allow the "non-common" finals to be given during class.

[redacted]

To the Editor:

As is the case with most institutions and businesses, those associated with ERAU that have gripes and complaints are screaming the loudest. I think "pathetic whining" would more aptly describe the nature of the complaints I'm referring to (i.e. last issue of the *Avion*).

As a content member of the student body who is proud of this school, I would like to stand up and be counted. I get so tired of hearing this school put down because of a few inconveniences that don't suit that minority of students who can't seem to cope with the shock of leaving momma for the first time.

Granted, ERAU does have it's problems, but what university of any consequence doesn't? I have attended several universities in the past, and as a currently enrolled student here at ERAU, I would like to say the quality of the faculty, facilities, procedures, maintenance, and yes, even the food, is far above the average.

There are acknowledged shortcomings in some of these areas, but if you'll take the time to find out about what plans the administration has for the very near future, you'll learn these problems are in the process of being taken care of efficiently and effectively.

Our university isn't perfect by any means, but I think its about time the whimpering complainers out there wake up to the fact that any school or work environment you encounter is going to be somewhat less accommodating than the environment you experienced under momma's wing.

Very Sincerely,
Matt Anthony
Box 2572

To the Editor:

This report is a combined effort of the SGA Dorm Representative, Varun Nkore, and committee member Joseph Cobb. A brief walk-around inspection was done of Dorms 1 and 2 on Sunday, February 28, 1988. Surveys were also solicited from on-campus residents and recommendations from those surveys were also added.

As compared with previous Dorm Reports, many of the problem areas seemed to have been resolved. However, some of the persistent problems should be investigated further and attention brought to them.

Maids-While the overall opinion of the students in Dorms 1 and 2 is that the maids are doing a satisfactory job, it seems that there are a few maids that do not do an adequate job. The complaints are, that the basic cleaning points are neglected and a sub-standard job is done. Some students complained that the vacuuming was not done often enough and the bathrooms were not cleaned thoroughly. Another common complaint was that the maids don't wait long enough after knocking, and enter the room while students are still sleeping or getting dressed. These two problem areas are easy to remedy and should be inquired about immediately.

Pest Problems-The most complaints have come under this category. Ants seem to be a general problem in dorm 1 and roaches in Dorm 2. Many students feel that a more permanent solution should be investigated. Part of the problem is the fact that extermination is not done on a regular basis. It is only done when the problem is evident. These insects seem to bother most residents a great deal and a better solution should be found to resolve this problem.

Lounge Areas-Another problem exists with the lounge areas. The newly opened Dorm 2 lounge has received much criticism because it is too small to feel comfortable in. This lounge is often locked and should be kept open for specified times, and be adhered to by whomever is in charge of the lounge. Some students suggested that because of the small size of the lounge, it should be turned into a recreation room and games be provided. The Dorm 1 main lounge seems to be adequate, however, measures should be taken to make it more "homey." Perhaps new furniture and a rug would help. This lounge is also in immediate need of a new television, as the color often fades on the present one. The second and third floor lounges seem to be in good order except for several missing seat cushions that seem to have been taken and not returned.

General-The following items are general suggestions to the Department of Housing.

1. Better control and operation of the A/C-heat unit in Dorm 1. The heat is often on during hot weather and vice-versa.

2. The grass on the south side of Dorm 1 should be replaced with some type of grass that will not easily disappear with athletic play.

3. The stairs leading to the middle part of Dorm 1 are in bad shape. The metal corner strips should be replaced. The current strips are only half evident and loose and could cause an accident.

4. Some of the maintenance people will have to repair things in the dorms also come into the rooms too soon after knocking.

5. The vending room in Dorm 2 should be open after 11:00 p.m.

6. An ice machine would be a great service to the students in the vending areas.

7. The microwave ovens in both Dorms 1 and 2 should be replaced. This has been a problem area for the past two years. Many students complain that the microwaves leak radiation and make funny noises when using them. Worcester should be urged by the Department of Housing to replace the microwaves at once.

8. Access to condoms, either through RA's or machines should be available to all residents. With the current AIDS situation in the United States (and especially Florida), this would be and advisable move on the Department of Housing.

Respectfully submitted,
Varun NKore, RA
SGA Dorm Representative

Avion
Meetings
are
5pm
on
Wednesdays
Come.
Make
it
the
Avion
again

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The *Avion* is a division of Student Government and is funded by the Students of Embry-Riddle

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This week's staff: Chris "graduate" Legvold, Erica Foster, Kelli Young, and Phyllis Salmons.

The opinions expressed in the Editorial are those of the majority of the Editorial Board, and do not necessarily represent those of the university, the staff of the *Avion*, or the members of the student body. Opinions expressed elsewhere are those of the writer, who is identified.

Letters appearing in the *Avion* do not necessarily reflect the opinions of this newspaper or its staff. Letters submitted may be edited for brevity and may be printed provided they are not lews, obscene, of libelous. Letter writers shall confine themselves to a single topic. All letters must be accompained by the signature of the writer. Names may be withheld on request at the discretion of the Editor.

The *Avion* Editorial Board members are: Teresa Anderson, Chip Zodrow, Ben Brennan, Martin F. Smith, and Rich Clarke.

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The *Avion* is produced by a volunteer, student-journalist staff weekly throughout the academic year and bi-weekly throughout the summer. The *Avion* is funded through student government fees and advertising revenue.

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Riddle Road Runners

By Greg Janeczek

The Riddle Road Runners Car Club will be active during the Summer A and B terms. The club promotes interest in motorsports with an emphasis on safety.

Past activities include roadtrips to Don Garlit's Drag Racing Museum in Ocala, to the Malibu Grand Prix in Orlando, and participation in Super Cruise America. Club members enjoy various discounts with local merchants and Shop Nine, hosted by Bob's Auto Detail on Ridgewood Ave.

All students and faculty/staff with an interest in automobiles are invited to attend the next meeting at Mr. Gatti's Pizza Restaurant, located in the Volusia Point Mall on May 24 at 1830. Or contact Greg Janeczek, Box 1136; phone 426-0067 for more information.

Student Alumni Association

By Teresa Anderson

The SAA would like to welcome you to Summer '88. We're starting to work on ideas for the Summer and Fall and Homecoming.

Thanks go out to Sabrina, Denise, Wes, Manny, and Teresa for working at the alumni tent during Skyfest. We met lots of alumni, sold some hats and had a nice lunch.

Recently the SAA was invited to participate in the Space Coast Alumni chapter's kick-off dinner. Sherry, Sabrina, Jennifer, Mike , Wes, and Teresa all attended. President Tallman was the guest speaker and mentioned his impression of our efforts.

Our next event will be a chance to relax. We'll be having a barbeque in June tentatively the 19th. Sherry will let you know when the date is firm. Remember to bring a prospective member!

Don't forget--our next meeting will be tomorrow-Thursday, May 19 at 4 p.m. in the Alumni Relations Office.

RESEARCH

(continued from page 5)

The program's sponsor, the Office of Aeronautics and Space Technology, Washington, D.C., screened each proposal over a 6-month process that included a broadly-based national peer review followed by an internal NASA review.

NASA plans another competitive round to expand the participation and grow the program over the next few years to about 20 universities. Timing and rate of growth will depend on budget availability.

"This university-based center concept is an integral part of the strategy to rebuild the nation's space technology base.

We are making a special effort to reach out to the university community and make a long-term commitment for space engineering research partnerships between NASA centers and universities.

Biloxi Blues - review

By Kelly Young

Neil Simon has written a series of plays which are now being produced on the big screen. *Biloxi Blues* is the second story among of three from among this series. While all of Simon's stories follow a boys quest to be an author through his life memoirs, *Biloxi Blues* is a craftily written play with moral integrity. The story is set in 1945 and is about a young man who joins the Army and goes off to basic training in Biloxi, Alabama. The plot develops and evolves as the young man faces many trials and heart warming experiences on the road to full maturity. The movie itself is not as much about the gruesome training but more about the friendships that are bounded between people who have to rely on team work to survive. I don't want to give the entire story away but the comedy is laughable, the love is sweet, and the moral is good. *Biloxi Blues* is good movie to see to start the summer semester off on a light note.

Windsurf

By Mike Miller
Club Reporter

April 26 marked the 4th regatta in a series sponsored by Windsurfing of Port Orange. From the Embry-Riddle Windsurfing team, Mike Miller and Pan Bilodeau placed first and third respectively in a figure eight slalom course.

Joe "Gonzer" Collins and Al Wade participated in the Mistral speed trials held at Sunrise Park May 1. Joe and Al reached top speeds of 18.1 and 22.1mph. Top speed of the day went to John Duke of Orlando at 29.8mph.

Congratulations to our new member Sally Wolfarth who placed 4th in last Sundays Halifax Sailing Association regatta. top finishers for the club were Dan Bilodeau and Mike Miller placing 2nd and 3rd. Special thanks to Bill Dolan for taking photos and participating in his first competition.

Tonight is the start of the Sandy Point summer series. Most of you will be happy to know that the races will be divided into two classes, above and below 7.5m. Free food and beverages will be provided by Sandy Point. Remember every Tuesday night are the continuing wop races off of Dunlawton Ave. Both races begin approximately at 5pm.

Memorial weekend the club will be competing in Miami and taking advantage of a little T&A, for more information come to our meeting tommorow night in the Riddle theater (A109) an 1930. PFW, why? because Mai Tai said so.

NASA offers contest for students to name the new space shuttle

By Chip Zodrow
Space Technology Editor

NASA has announced a contest to name the newest Space Shuttle Orbiter. The new Orbiter, to come off the assembly line at Rockwell International in Calif., is expected to be completed by April 1991.

The name *Challenger* has been retired and is not acceptable for the contest. This is to recognize the crew that was lost during the 51-L accident.

The contest was initiated and authorized by Congress, and is only open to school children. The orbiter, designated OV-105, is expected to have a name that descends from an exploratory or research sea vessel.

The contest is presently open and will continue until Dec. 31, 1988. To enter, elementary and secondary school students will form teams and research a name. Each team must also have an adult team coordinator who must be a member of the school faculty.

There are two entry divisions. The first is kindergarten through sixth grade, and the second is the seventh grade through the 12th grade.

Students in the U.S. and its territories' schools, Department of Defense schools, and Department of State schools are eligible for the contest.

Winners from each state, territory, and agency will receive awards in March 1989, and the final winner will be selected in May 1989.

The $1.3 billion contract became effective in Aug., 1987 and was prompted to get the space program back to full strength after the loss of the *Challenger*. The construction is taking place at Rockwell's facility in Downey, Calif., while final assembly and check out will take place in Palmdale, Calif. Rockwell expects that the work will bring in a peak employment of 2,000 employees. Some workers will be reassigned from the B-1 project to complete the new orbiter.

Attitude Indicator

Give us your opinion.
What did you think of the movie Biloxi Blues?
Write it down.
Rate it from:

Excellent
Great
Good
Fair
Poor
Bad

We'll publish the results of your attitude!

Manned U.S./Soviet Mars trip not desirable, says State Department

Associated Press

BOSTON -- The United States should cooperate with the Soviet Union to explore the surface of Mars and set up a space training center in Antartica, but steer clear of joint manned missions to other planets, a State Department official says.

Michael Michaud, acting U.S. deputy assistant secretary for science and technology affairs, told a space writers' conference Monday the United States shouldn't commit itself to joint crews and crafts with the Soviets because "politics drives programs and not the other way around."

Recent improvements in U.S.-Soviet ties may not survive the 1990s if the historically cyclical nature of superpower relations holds true, he said. A manned mission to Mars could take 20 years to carry out.

"If that is the case, does it make sense to make a moon base or a Mars mission the central part (of U.S.-Soviet space ties)?" Michaud said in a panel discussion at the 50th annual Aviation-Space Writers Association conference. "I don't think so."

But he said the two countries could cooperate to send a rover to bring back samples of Mars' surface, build an international center to study the physical requirements of living in space, regulate space debris and establish procedures and hardware for space rescue.

Last year, the United States and the Soviet Union agreed to cooperate on 16 projects in space science.

"The agenda in front of us is so dazzling but so expensive that we may be frustrated in trying to realize it on our own," Michaud said.

Panelists called for the United States to step up cooperation with Canada, Japan and its European allies in all space fields, including a 40-year effort to build a joint space station and the commercial development of space.

"If we want to do a moon base or a Mars mission we will have the cooperation before us with our European and Japanese allies, and a model to build on," Michaud said.

Long-range plans adopted by the National Aeronautics and Space Administration call for creating a scientific base on the moon around the end of this century and a manned Mars mission early in the next.

Since the 1986 explosion of the space shuttle Challenger, NASA has begun re-tailoring its space exploration goals amid criticism that the country lacks a national policy on what it wants to achieve in space.

"You're starting to tie the entire agency together in a long-range process," said Alan Ladwig, director of program support and special projects at NASA. "Maybe you thought that's where we were all along, but I don't think so."

Long-term projects in NASA's $11.5 billion budget request for fiscal 1989 include developing hardware for a space station to be built by 1992, increasing the number of space shuttle flights after trips resume in August, continuing space science programs in astronomy and planetary research and the $100 million Pathfinder project to develop technology for a Mars mission.

"The longer you wait to push away advanced technology as an advantage, the longer it will be to establish these goals ... and

we'll watch the Russians go and do it," Ladwig said, calling for Congress to approve the funding request.

Professor Sean Solomon of the Massachusetts Institute of Technology's Earth, atmospheric and planetary sciences department said the government needs a commitment to space and science programs to attract students to the field.

"The crisis in the planetary sciences didn't begin with the Challenger accident. It was there to begin with," Solomon said. "It hasn't been two years but 10 years since the last planetary science expedition by the United States was launched."

INTELSAT V planned launch by Arianespace from French Guiana

By Chris Legvold
Special to the Avion

An INTELSAT V satellite was planned for launch early this morning from French Guiana by the Arianespace group. At press time, the Ariane Flight 23 launch was still in the countdown stages.

The launch is from the Ariane Launch Site at the Guiana Space Center, near Kourou, French Guiana.

The ARIANE 2

An ARIANE 2 launch vehicle was used to insert the payload. The vehicle was used due to its suitability to the payload requirements (the INTELSAT V has a lift-off mass of 1998kg). It has a useful load of 2175kg, as opposed to the ARIANE 1's load of 1850kg, or the ARIANE 3's load of 2700kg.

Arianespace is also producing an ARIANE 4 version, with payload capacity of 4200kg. The first launch of this version is scheduled for next month.

The ARIANE 2 is 49m long and weighs 220 tons on lift off. Its first stage is powered by four single axis swiveling Viking V engines using 145 tons of a liquid propellant mixture. It produces 2700kN of lift-off thrust.

The second stage uses the Viking IV engine burning 34 tons of the same mixture. It is gimbal-mounted with two axis of freedom, giving pitch and yaw control. Roll control is provided by auxiliary jet feeds. It produces 785kN of thrust in a vacuum.

The third stage uses a HM-7B, 63kN thrust engine. It burns 10.7 tons of liquid hydrogen and oxygen. The third stage engine is also gimbal-mounted providing similar axis control.

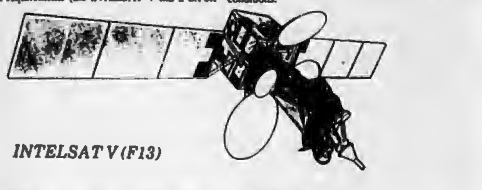
Mission specifications

The first and second stages lift the payload up to a perigee altitude of 463km. At four and a half minutes after launch, the third stage will insert the satellite up to an altitude of 35,784km.

A near-geostationary positioning will move the craft to a final altitude of 35,788km at 307 degrees East, at about 37 hours after launch on the fourth apogee. Its speed will be stabilized to 11,066km per hour.

The entire mission will be completed at about 75 hours after the apogee maneuvering when the solar panels will be deployed.

The three windows for the launch ranged from 11:43pm to 1:34am, and were approximately 17 minutes each with about 30 minutes between them. The launch was to take place in the earliest possible window considering weather conditions.



INTELSAT V (F13)

The INTELSAT V

The INTELSAT V-A (F13), a communications satellite, is to be used for telephone, television, and data transmission purposes. The INTELSAT version V is one of the largest models of commercial communication satellites built, and F13 marks the third satellite launched by Arianespace this year.

The launch will place the satellite in a near-geosynchronous orbit to enable it for use by INTELSAT. The International Telecommunications Satellite Organization (INTELSAT) is a non-profit cooperative of 114 countries that owns and operates the global communications satellite system, consisting of 13 satellites over the Atlantic, Pacific, and Indian Ocean regions.

The telecommunications provided are used around the world for international communications and by more than 30 countries for domestic communications. The U.S., through its signatory, COMSAT, holds the largest share of 26.4 percent.

The satellite weighs 1188kg (after apogee motor fire) and its main body volume is 5.9 cubic meters. It has 38 transponders, 15,000 simultaneous telephone circuits, and 2 color television channels. Its expected life span is seven years.

Chris Legvold is a former Editor-in-Chief of the Avion.

Soviet nuclear powered spy satellite will fall to back to Earth this summer

Associated Press

WASHINGTON -- The Soviets have lost control of a nuclear-powered military spy satellite, and two American experts said Friday it will shower the Earth with radioactive debris.

The satellite, Kosmos 1900, "has been in a steadily decaying orbit for the last month. If nothing is done to correct its orbit, it will decay" and re-enter the Earth's atmosphere, said Maj. Alex Mondragon, a spokesman for the U.S. Space Command, in Colorado Springs, Colo.

Tass, the official Soviet news agency, reported that Kosmos 1900 has a nuclear power plant aboard and would fall to Earth in August or September, but that the radioactive material on board would not present a danger.

However, two American experts on the Soviet space program, James Oberg and Nicholas Johnson, said it was unlikely that the radioactive material would burn up on re-entering the atmosphere, as Tass implied.

"It is a certainty that the radioactive debris will come down. The question is where," said Johnson, author of the annual study, "Soviet Year in Space." He said it was

See SPY, page 5

KNIGHTS

(continued from page 1)

ture of the wind blowing in the open door nears 40 degrees. Considering the windchill, it gets pretty chilly for the passengers riding in the very back of the plane. In fact, I think I am still numb.

Once the proper altitude and direction is obtained, it is time to jump. The team makes final adjustments to their rigs and mentally prepare for the upcoming jump. The "flag" jum

and dives until he is above the landing spot, where with a little flare of the parachute, he comes into a text-book landing.

The plane circles until it is back on jump-run. Now the "baton pass" team prepares to jump. The goal during their free-fall is to pass a baton between the two of themselves. Once again the distinguished team demonstrates its precision.

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Once the proper altitude and direction is obtained, it is time to jump. The team makes final adjustments to their rigs and mentally prepare for the upcoming jump. The

"flag" jumper spots the plane into its final approach and then with a salute bails out. He disappears from sight very quickly. The final speed that a jumper attains is 120 mph, and if the jumper goes into a "track" or dive, he/she can obtain 180 mph.

The skydiver is now flying and can adjust his/her flight path with subtle movements of the body and arms. This first jumper has donned a U.S. flag and smoke canister to make him more observable to the crowd that is over two miles below him. He free-falls for 60 seconds and then deploys his black and gold parachute.

With the parachute canopy above the jumper, he turns

and dives until he is above the landing spot, where with a little flare of the parachute, he comes into a text-book landing.

The plane circles until it is back on jump-run. Now the "baton pass" team prepares to jump. The goal during their free-fall is to pass a baton between the two of themselves. Once again the distinguished team demonstrates its precision.

The plane again circles and gives the opportunity for another jumper to show off his stuff. This time the skydiver opens up his canopy after free-fall and then cuts it away after a few seconds of flight. A second, or backup canopy, is deployed and the jumper is again in a state of controlled descent.

The plane again circles and allows two more sets of jumpers to demonstrate their skills. Group free-falls are demonstrated and again thrill the crowd.

The Golden Knights are acknowledged as one of the greatest performers in modern day air-shows. They demonstrate flying in its most natural state, and the skill and talent of the U.S. Army.

Astronaut selection now a bi-annual process

National Aeronautics and Space Administration

NASA announced plans to conduct astronaut candidate selections on a 2-year cycle and has scheduled the next class of candidates for 1990. Previously, NASA has selected astronaut candidates as needed, with selections the last 10 years occurring in 1978, 1980, 1984, 1985 and 1987.

The 2-year process will moderate the demand on resources required for candidate selection and training while maintaining the manpower levels necessary to meet mission requirements.

The next selection cycle will begin July 1, 1989, the cutoff date for applications. Applications received after that will be eligible for consideration in the next cycle. Nominees also will be submitted by the military services at the same time. After 6 months of screening, medical evaluation and interviews, selections will be announced in January 1990 and candidates will report to the Johnson Space Center in July.

The selection process will begin again in July 1991 with the cutoff for applications to be considered in the 1992 selection. The number of selections made every 2 years will be based on projected requirements.

NASA will continue to accept and review applications from the general public on an ongoing basis. Applicants for the Astronaut Candidate Program must be citizens of the United States.

Air Force releases Stealth bomber and announces first flight this summer

Department of Defense

The Secretary of the Air Force announced today that the first flight of the Advanced Technology Bomber, or B-2, is currently scheduled for this fall. On its maiden flight, the B-2 will launch from its final assembly facility at Air Force Plant 42 in Palmdale, Calif., and land at the Air Force Flight Test Center at Edwards AFB, Calif., where flight testing will be conducted.

The initial flight of the B-2 will highlight the return of the flying wing design to military aviation.

The Secretary of the Air Force Edward C. "Pete" Aldridge, Jr., said, "the first flight of the B-2, which has enjoyed bipartisan Congressional support from its inception, will represent a dramatic leap forward in technology and the achievement of a major milestone in our Nation's Strategic Modernization Program."

The President's decision and the Congressional support to develop and procure 132 B-2's with an initial operational capability in the early 1990's following the deployment of 100 B-1B's, was based on the need to redress the strategic imbalance between the United States and the Soviets. While the acquisition of 132

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likely to fall in the ocean or in a sparsely populated area.

"We will know the date a few weeks before, but we won't know the exact time or general area until a few hours before," Johnson said. The orbit of Kosmos 1900 covers the Earth between 65 degrees south and north latitude, excluding only Antarctica in the south and a swath in the north bounded by the inhabited areas of Alaska, Greenland, Scandanavia and Siberia.

Johnson and Oberg said the satellite is believed to have a system to eject the reactor core so that it would burn up rather than reach Earth. But that safety system did not activate after the Soviets lost contact with Kosmos 1900, between April 10 and April 14, Johnson said in an interview.

"You could set that system up on a fail-safe system" to eject as soon as the satellite stopped working, he said, "but it would have activated shortly after the malfunction."

Neither Tass nor the U.S. Space Command spokesman described the mission of Kosmos 1900, but Oberg and Johnson said it was a RORSAT, an English-language designation which stands for Radar Ocean Reconnaissance Satellite. They are used to monitor the movement of U.S. warships.

Two other Soviet RORSATS have fallen to earth.

In January 1978, Kosmos 954, powered by 110 pounds of uranium, re-entered the atmosphere and spread radioactive debris across Canada. The crash was then redesigned to allow the reactor to be jettisoned so that it would not have the protection of the satellite body as it re-entered the atmosphere and thus would be more likely to burn up.

One of the newly designed RORSATS, Kosmos 1402, dropped from orbit on Jan. "1, 1983 over the Indian Ocean, and no radioactive debris is known to have fallen to Earth.

In the case of Kosmos 1402, said Johnson, "the core was ejected very shortly after the malfunction," in contrast to the current situation.

A top Soviet space scientist, Roald Sagdeyev, told a news conference in Washington that Kosmos 1900 was designed so that the radioactive material would vaporize and remain in orbit. But he said he had been in the United States for several weeks and did not have fresh information on Kosmos 1900.

Sagdeyev, who is director of the Soviet Space Research Institute and an adviser to Soviet leader Mikhail S. Gorbachev, was appearing with the private Federation of American Scientists to urge a ban on nuclear reactors in orbit.

Sagdeyev and Frank von Hippel of the American federation said that the proposal was aimed largely at crippling the U.S. "Star Wars" program, which many scientists say would use nuclear reactors to power lasers and other exotic weapons to knock down intercontinental ballistic missiles.

Sagdeyev said the only knowledge he had of the RORSAT program came from what he read in Western publications.

The Tass announcement, made available by the agency's office in Washington, said that "the artificial earth satellite Kosmos 1900, with a nuclear power plant aboard, was launched Dec. 12, 1987.

"According to competent Soviet organizations, radio contact with the satellite was lost in April 1988. The satellite is continuing in its oriented flight, and the main service systems are functioning according to the program.

"The satellite will fly in orbit until August-September 1988, after which it will cease to exist. The satellite Kosmos 1900 has systems insuring radiation safety on completion of the flight," Tass said.

The Soviets have launched about 50 RORSATs. Two of them have fallen to earth, Kosmos 1900 is on the way down, while Kosmos 1824 remains in low orbit. The remainder have been boosted into higher orbit where there is less danger they will fall, according to Oberg and Johnson.

Oberg and Johnson said the Soviets apparently have developed a new type of ocean reconnaissance satellite, a follow-on to RORSAT, one that uses solar rather than nuclear power.

The development of a RORSAT replacement that does not rely on nuclear power would explain the Soviet decision to call for a ban on reactors in orbit.

"They are willing to give up something they are about the scrap in return for something we have not built," said Oberg.

NASA selects nine universities to conduct space research

National Aeronautics and Space Administration

NASA announced the selection of nine universities to conduct long-term research into promising areas of space engineering and technology.

This year's selection of University Space Engineering Research Centers includes new opportunities for university specialization such as Mars mission technologies, extraterrestrial materials, in-space construction and large space-based observatories.

The university-based centers are eligible to receive up to $500,000 for the first year and may grow to over $1 million a year for a minimum of four years. The centers support NASA's goal to broaden the nation's engineering capability to meet the critical needs of the civilian space program.

The Centers are:

The University of Arizona, Center for the Utilization of Local Planetary Resources;

Th University of Cincinnati, Health Monitoring Technology, Center for Space Propulsion Systems;

o University of Colorado, Boulder, Center for Space Construction;

o The University of Idaho, Very Large Scale Integrated Hardware Acceleration Center for Space Research;

o Massachusetts Institute of Technology, Center for Space Engineering Research Focused on Controlled Structures Technology;

Te University of Michigan, Center for Near-Millimeter Wave Communication and Sensing Technology;

o North Carolina State University at Raleigh and North Carolina Agricultural and Technical State University, Mars Mission Research Center;

o The Pennsylvania State University, Center for Space Propulsion Engineering;

o Rensselaer Polytechnic Institute, Intelligent Robotic Systems for Space Exploration.

The nine centers were selected from 115 proposals submitted last November to NASA in response to the agency's program announcement.

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STEALTH

(continued from page 5)

B-2 bombers was originally estimated to cost $36.6 billion (FY81$), the Air Force is reevaluating cost estimates for the program as a result of current and projected fiscal constraints. When that process is completed later this year, the Air Force will release those updated figures. The acquisition of the B-2 ensures our capability to effectively penetrate Soviet defenses well into the 21st century.

The Air Force has previously announced that Whiteman AFB, Mo., would be the initial operating base for the B-2. Initial construction to support the aircraft's beddown at Whiteman AFB is scheduled to begin later this year. In addition, the selection of the Oklahoma City Air Logistics Center, Oklahoma City, Okla., was announced in February as the primary depot facility for the B-2.

The first flight of the B-2 this fall will represent a major achievement in an aggressive and highly successful development program.

Skyfest draws record crowds

By Martin F. Smith
Staff Reporter

More than 50,000 people attended the fifth annual Daytona Beach Skyfest airshow on Saturday and Sunday, April 16 and 17. Skyfest '88 featured an unusual number of unique acts including over 60 different types of military aircraft. The A-10 Thunderbolt II, F-14 Tomcat, F-15 Eagle, F-16 Falcon, C-5 Galaxy, C-141 Transport, P-3 Orion, AV-8B Harrier and a variety of rotorcraft were among the aircraft featured in the largest display of military aircraft in the southeast U.S.

The highlight of Saturday's show was a rare appearance of the B-1 bomber. The B-1 made two low speed passes in the landing configuration before departing with a high speed fly-by. Witnesses stated that the B-1 suffered an engine failure during the high speed pass. The B-1 is supersonic and replaces the aging B-52 bomber, which was produced in 1957. Production of the B-1 was canceled by the Carter administration, but revived by Ronald Reagan.

Another point of the show's was Bob Hoover's aerobatics. The maneuvers he performed might be considered a real yawner for anyone flying an aerobatic airplane such as the Pitts Special, or the F-16 Falcon, but Hoover performed some truly amazing feats in two business transport aircraft.

Hoover's first appearance featured a Shrike Commander. The aircraft is the piston version of the same aircraft recently acquired by the Daytona Beach campus for executive travel. Hoover's aircraft are normal production models with no modifications for the aerobatics he performs.

Crowds cheered as Hoover demonstrated eight point rolls just 500 feet above the runway, first with both engines and then with one shut down. He demonstrated the stall characteristics of the aircraft by diving to the maximum allowable airspeed and then pulling the aircraft up to a 90 deg nose high attitude until zero airspeed was reached. Hoover then pushed the nose over, passing through level until the nose was pointed nearly straight down and then recovered gracefully. Hoover's finale in the Shrike Commander included shutting both engines down while flying downwind over the runway and returning to land dead-stick, rolling to a stop at the center of the show without restarting the engines. Hoover then performed a series of equally impressive aerobatics in a Sabreliner business jet.

Another existing act featured wingwalker extraordinair, Johnny Kazian. Kazian is credited with bringing this lost art back to airshows some 29 years ago. Wing-walking faded into oblivion after the barnstormers of the '20's. Kazian has dozens of film credits to his name and has even doubled for such notables as Robert Redford and Lee Majors. Unlike others who who call themselves wingwalkers, Kazian actually rides the wing of the 600 horse power Waco mystery ship unethered. To this he says, "others are merely wing riders." A camera mounted on the rudder of the Waco shows the view seen by Kazian and pilot Jim Franklin as the plane performs a series of loops, rolls, spins and tail-slides.

When asked about the safety of such stunts, Kazian replied that airshows are much safer today than when he started out due to increased pilot proficiency. He also reminds all involved that complacency can still lead to accidents. He said that he survives by occasionally reminding himself that wing-walking is as dangerous each time he performs as it was 29 years ago. When asked about the most exciting moments in his career, Johnny said that one of the most difficult moments was when he was forced to ride a plane to a crash-landing, off airport after the engine was lost. He also recalled a time when a large June bug struck his knee during a performance, leaving it swollen for days.

It was surprising to learn that his biggest perils don't come from losing his footing on the wing. He says that he's always holding onto something, so his footing is less important. He says that the oil used to make the smoke soon trailing the aircraft frequently leaves the wings oily. He recalled the memory of his good friend, Art Scholl, who died while performing an inverted spin during the filming of "Top Gun." Kazian said, "Only Art knows what happened. I'll ask him about it when I see him."

The U.S. Air Force Thunderbirds performed their usual razzle-dazzle show on Sunday. A reception followed the performance at a local banquet facility. The pilots of the Thunderbirds were present, as well as such dignitaries as U.S. Representative Bill Chappell and U.S. Air Force Undersecretary James McGovern.

Aircraft Maintenance Staff Sergeant Mike Millard viewed it all from a distance. Millard is one of more than 40 people responsible for insuring that the show takes place. According to Millard, there are about 120 people enlisted for two-year tours with the Thunderbirds. He says the tour usually travels with about 60 people consisting of two support teams. People like Millard who work the thankless behind-the-scenes jobs are largely responsible for the success of the shows. Because of their efforts, the Thunderbirds have never had to cancel a performance for maintenance reasons. Millard's work began at 17:45 on Saturday. He helped coordinate fueling and other tasks, informing outside support groups of the Thunderbirds' itinerary. Millard remained on duty until the after show duties were performed on Sunday before a brief tour of ERAU facilities before leaving Daytona.

Skyfest also featured performances by the Rayban Gold aerobatic team as well as the Eagles aerobatic team. These two teams raced around the U.S. Army's Golden Knight parachute team during opening ceremonies both days.

WANG

(continued from page 1)

cepted a position as Associate Professor of Physics at the Taiwan Provincial Taipei Institute of Technology. He worked there for one year before returning to the United States in 1956.

Initially, he worked as a Civil Engineer designing tunnels for the New York City subway system while attending graduate classes at night at the City College of New York. He was granted a scholarship at West Virginia University where in 1964 he completed a Master of Science in Aeronautical Engineering.

Meanwhile, Mrs. Wang and the couple's children were still living in Formosa. "She insisted that I find a job first before bringing them here."

Professor Wang began teaching at Embry-Riddle Aeronautical Institute in 1965, shortly after its relocation to Daytona Beach from Miami. When he joined the faculty, the campus consisted of rented buildings with no air conditioning and no carpet. The total student enrollment was approximately 200.

In the 23 years, he has seen Embry Riddle become a world renowned university with a current enrollment of over 13,000 students (including Prescott and International Campuses).

He taught numerous courses in the Aeronautical Engineering Program including Statics, Solid Mechanics, Strength of Materials, Aerodynamics, Aircraft Structures Fluid Mechanics and Applied Differentials.

He served as the Department Chairman of the Engineering Department for two years and as a member of the Curriculum committee for 12 years. He served in the Faculty Council, Tenure Committee and as an advisor of Aeronautical Engineering majors.

Students of Professor Wang are quick to mention the word "quality" when speaking of their instructor. Mr. Wang said: "Because I consider and emphasize the quality of our students, I am known as a hard grader. However the students have treated me fairly."

The students do indeed appreciate the quality of instruction as evidenced by an Award of Appreciation given to Professor Wang in 1974 by the Aeronautical Engineering Foreign Students and by the recognition as Outstanding Faculty in the Aeronautical Engineering Department three times in the past two years.

Professor Wang has been named in Who's Who in American Education and Leaders in American Science (1968-69) and Who's Who in the South and Southwest (1980-81). Professor Wang was honored by the University when he was named Professor Emeritus earlier this year. He will therefore always be considered a Professor at Embry-Riddle.

Former students appreciate the enthusiasm and humor Professor Wang brought to class. In one case, a student had fallen asleep in class and Professor Wang woke him and asked if he "had too much girlfriend last night." The class laughed for at least five minutes. Having taken one of Wang's classes, most students would attempt to enroll in another. Several alumni mentioned that the most unfortunate thing about his retirement is that future students will not have the opportunity to have him as a professor.

In reflecting upon his teaching career at ERAU, Professor Wang said: "My affection and fond memories will always remain here. I want to express my deep appreciation and thanks to all the people at ERAU with whom I have had the pleasure of working, past and present, as well as my dearest colleagues and staff whose memories will be with me the rest of my life."

After retirement, Professor Wang and his wife will move to Atlanta where they plan to alternate relaxing and traveling. One day he hopes to write a book about aircraft structures and become involved in the import-export business.

To Professor Wang: The University faculty, students, staff, administrators and alumni wish you the best of luck and a long, healthy, happy, and prosperous retirement! We will miss you more than you will ever know!

American Red Cross
Giving Blood Could Someday Save YOUR Life
Blood IS The Gift of Life

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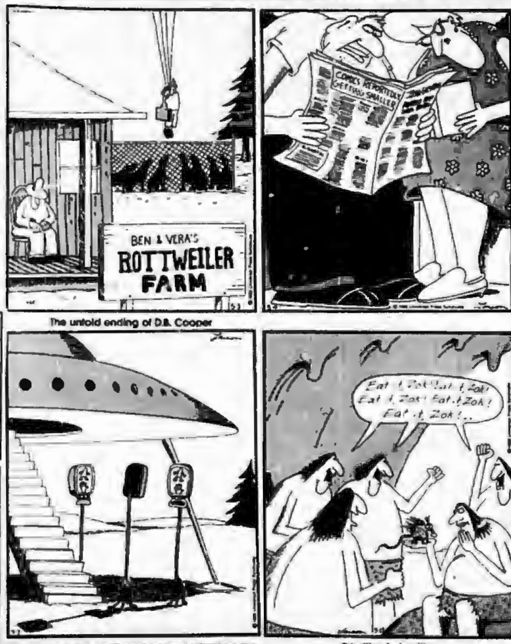
Garfield — Jim Davis

The Far Side — Gary Larson



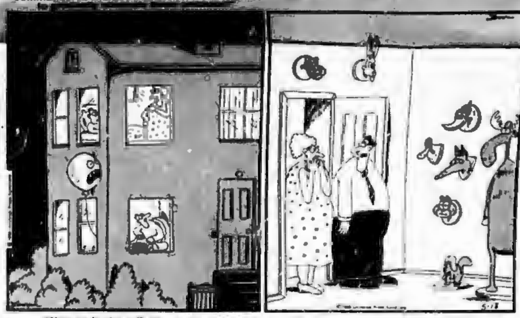
The untold ending of D.B. Cooper

"Our people are positioned on every street corner, commander ... Shall we commence with our plan to gradually eliminate these creatures?"

Primitive fraternities

Bloom County — Berke Breathed

[redacted]



"Our people are positioned on every street corner, commander ... Shall we commence with our plan

Primitive fraternities

"Now go to sleep, Kevin — or once again I'll have to knock three times and summon the Floating Head of Death."

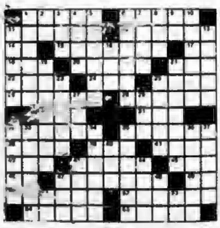
"Oh, for heaven's sake, Miss Carlisle! ... They're only cartoon animals!"

Shoe — Jeff MacNelly

The Puzzle

ACROSS

DOWN



[redacted]

Financial Aid

The American Society of Travel Agents (ASTA) Scholarship Foundation announces its scholarship competition for the 1988-89 academic year. Four scholarships are offered for undergraduate students having at least a 3.0 g.p.a. with a degree emphasis in travel and tourism. The deadline for applying is June 10, 1988. Applications are available at the Financial Aid Office in Sprunce Hall.

Experience Plus

The Counseling Center is looking for "non-traditional" students who are interested in getting together with other such students to join their group called "Experience +" here at ERAU. A "non-traditional" student is defined as someone who initially entered college after a break of four years or more from academic studies. The purpose of this group is to form a supportive social network as well as to discuss issues that effect the non-traditional student. If you are interested, please leave a copy of your work/class schedule with them in the Counseling Center (located in the University Center) by Friday, May 19 so that they can decide a time for the group's first summer get-together.

Contact Lynne Norris or Patty Ruddy in the Counseling Center at 239-6035 for further information.

Seminars to increase your studying effectiveness

Begin your semester right by sharpening your study skills. The Counseling Center will be facilitating three sessions so that everyone has an opportunity to work up to their academic potential. Through these informal sessions you will have an opportunity to receive valuable information and share ideas with other students.

If you are unable to attend the sessions at the time offered, please call 239-6035 and let us know that you are interested and when you are free or drop by the Counseling Center located in the University Center.

Please contact the Counseling Center and sign up one week prior to the seminar you want to attend.

Test Taking Tips

Tuesday, May 24 - 1350-1500 in the Faculty/Staff Lounge, second floor of the University Center. This seminar will help you to learn ways to prepare for tests, combat anxiety, and take exams efficiently.

Self Management and Motivation

Tuesday, May 31 - 1350-1500 in the Faculty/Staff Lounge, second floor of the University Center. Learn how to manage your time so that you can relax without guilt. Also learn how to get going when you get up and go has got up and went.

Lecture Note Taking

Tuesday, June 7 - 1350-1500 in the Faculty/Staff Lounge, second floor of the University Center. Get information on how to efficiently take legible, helpful lecture notes.

"Kick a Habit"

The Counseling Center will be holding a program to help you rid yourself of bad habits such as smoking, over-eating, phobias, procrastination, tardiness, worrying or unhealthy relationships. The group will meet weekly for four two-hour sessions, during the weeks of May 23-June 13.

Group size is limited. Interested persons need to make a reservation in the Counseling Center during the week of May 16-19.

Attention August Graduates

If you are interested in running for Senior Class President or Vice President, please schedule an appointment to meet with Laurie Renfoe, Senior Class Advisor, by Tuesday, May 31, 1988. Please contact the Student Activities Office at 239-6039 or stop by. The office is located in the University Center lobby.

Attention Pilots! This is for You!!

There will be an FAA Safety Seminar May 19 at 1930 in A-109. The topics of the seminar will be "History of Aviation" and "On Weather."

The Solution

[illegible]

HOT FAST 1979 TRANS AM--T-tops, [illegible], you have to see it! Call Nancy at 756-[illegible] after 6 p.m.

FOR SALE--The ultimate beach cruiser. 1964 Oldsmobile[illegible] 88, engine runs great, no smoke, p/s, p/b, body is in good shape, no dents, no rust, rides real smooth $375. Contact Tony at Box 1117.

1984 NISSAN 4WD KING CAB--great condition, white, a/c, stereo. Never been [illegible]. $6500 obo. Contact Sarah at Box 1584 or 734-0168.

cycles for sale

FOR SALE--1985 Kawasaki Jet Ski 550, exc. running condition, all new paint, slightly modified and is faster than stock 650! Everything you need is included. $2000 obo. Contact Bob at 257-5610 or through Box 7255.

FOR SALE--1982 Yamaha XT 550, exc. condition, 5000 miles on new engine, extra tank and helmet $975. Call Scott at 767-0496.

FOR SALE--Honda CB650 Contact Ed Preston, CFI at ERAU flight line.

WANTED--used motorcycle cover and full-face helmet with visor. Please contact C. K. Ho at 760-3871 or Box 1324.

roomates wanted

ROOMMATE NEEDED--male or female to share 2 bedroom, 2 bath apartment at Airbase Apts. (Just south of Beville on Clyde Morris.) $247/month plus 1/2 utilities, $100 security deposit, close to school, swimming pool, free cable, tennis courts, private bath. Call Ron at 756-9318 or leave message.

ROOMMATE NEEDED--one non-smoking female needed to share bedroom in luxury two bedroom apt. 1 1/2 baths, your own laundry room, pool, jacuzzi, patio, tennis court, and lots of storage. Only $154 per month with very small deposit. You could pay more, but why? Call Vivienne at 761-9653 and leave message.

HOME FOR SALE--1984 Carlton mobile home (14x64) 2 bedroom, 2 bath. $15,000 or $500 down and assume mortgage. Call Patty (W) 239-6035 (H) 788-2274.

CONDO FOR SALE--2 bedroom, 2 bath condo, pool, carpeting, vertical blinds, all (5) major appliances, ceiling fans, 2 miles from school. Everything is new condition. Over 40% of condominiums is Embry-Riddle student ownership. $53,500. Call 767-7927.

HOUSE FOR SALE--beautiful big home, residential professional 8 rooms, 5 baths, rock fire place, beam ceiling, 4-100 year old oak trees, big corner lot, 2 car garage, furnished. Ideal for income and renting. Selling because of health. Call Lee at 258-5901.

HOUSE FOR SALE--home with hangar, only one year old, 2,000 sq. ft. of home, 1,700 sq. ft. of at Massey Ranch Air Park on taxiway. 3 bedroom, 2 bath, inside laundry room, extra-large kitchen, deck and more. $144,000. Call Dr. Baty at 239-6441 for more information.

ROOM FOR RENT--3 bedroom/2 bath/2 car garage, home in Willow Run is 1 1/2 yrs old incl. dryer, dishwasher, disposal, microwave, cable T.V., vaulted ceiling and fan, furnished with new furniture, have cat. Female preferred but will accept other. Contact Alicia or Jan at 756-1484 or Box 2516.

ROOM FOR RENT--furnished, only 1/2 mile from ERAU, rent includes: electric, water, heat, a/c, washer and dryer, micro-wave, dishwasher. No lease is required, only $210 per month. Call John at 257-1782.

ROOM FOR RENT --1 1/2 mile from University with bath and all utilities included, very quiet, private, big home for a non-smoker, $160/month, over the river on the mainland. Call Lee at 258-5901 evenings.

HOUSE FOR RENT--spacious three bedroom home, 19 1/2 ft. bedrooms, 6x4 ft. walk-in closets, large porch, dining room and cellar. 5 minutes from school. Call John at 253-1895.

miscellaneous for sale

FOR SALE--10 speed bike, good condition, needs some light repair, $40. Call Maryellen at 239-6626 or stop by room A-305.

FOR SALE--Sleeper sofa $200. Rocking chair $30. Call Mike at 761-5925 evenings or early mornings.

FOR SALE--One single bed and one drafting table. Call Dan at 253-1097

FOR SALE--Tamiya 1/12 on-road porsche 956 r/c car. Fully assembled, includes all ball-bearings, Novac elec. speed control Sanwa Attack 2 channel radio Tamiya 6-cell flatpak battery. Car as good as new, hardly ever run. $220 obo. Call Scott at 254-6854.

FOR SALE-- Commodore 64 with monitor and disk drive. Only $275. Call Dr. Batty at 239-6441.

1977 CESSNA 172--all IFR, current annual, 15 STOH, fresh paint, new interior, $27,500. Call Dr. Batty at 239-6441.

FOR SALE--Badger 150 deluxe airbrush kit $45. Sanyo's top of the line Ultra UR-70 high power am/fm cass. car stereo, too many features to list but includes Dolby b, c, dnr, and auto-reverse $125 obo. Call Scott at 254-6854.

FOR SALE--Pro Star flight computer, exc. condition $140. Call Mark at 761-2721.

FOR SALE--men's 10 speed, 25 inch Windsor all alloy, quick release front and rear, Sur tour comp V and Suntour V-GT. $125 obo. Call Henry at 253-4328.

FOR SALE--Compact refridgerator $75. Black Oriental-style desk $50. Bassett Dresser $30, Brown tone sofa $200, assorted lamps and matching end table for sofa. Call Jason at 767-3214 or leave message.

FOR SALE--mint condition 6 piece living room furniture set. Price negotiable at $250. Ask for Jeff at 761-2721.

FOR SALE--queen size waterbed with headboard $50. Call Tim or Eric at 679-5722 or reply to Box B-111.

FOR SALE--black cherry wood dresser with mirror $100. Call Mike at 761-5925.

FOR SALE--Four filing cabinets: 2 drawer, $35 each. Makes a great desk, will throw in desk top. Contact Janaine at Box 5669 or call 239-0420.

FOR SALE--new po[illegible] sauna steam bath, great for losing weight [illegible]. Se[illegible] vacuum cleaner without electric $12. Gypsy dance cassettes and records $9. Beethoven 5 symphonies $9. All new big puzzles $1.50 each. Call Lee at 258-5901 evenings.

FOR SALE--Zenith 26" color television walnut wood finish. Excellent condition, must sell, a steal at $150. Call Michael at 672-6564 after 6 p.m.

FOR SALE--get in shape, look good, weight system with bench, for sale, weights: 2-100lb, 2-50lb, 25's, 10lb, 5lb plates bench, curl bar, tricep bar, all for only $200 or can buy separate. Call John at 257-1782.

miscellaneous

NEED HELP IN MATH?--If you definitely want to pass Algebra, Trig., or Statistics this summer, get help now and secure a passing grade. Call Dan at 673-6492.

RESUMES FROM START TO FINISH--a complete writing service, word processing, consultations in writing, same-day service available, student discount, pick-up and delivery available, letter-quality printer. Call Harry at 253-4328.

FLIGHT INSTRUCTION--CFII,MEI looking for students wanting to get their license(s) without waiting. Reasonable rates. Call Rich at 761-1850.

FLY EVERY DAY--experienced flight instructor with all airplane ratings and all instructor ratings, will teach you professionally, multi-engine, commercial, instrument, seaplane, taildragger, high-performance, complex and aerobatic. Get your ratings fast at a low cost. Call Sig at 252-4275.

personals

M,

THANKS for everything including the flowers! You made me proud at Monaco. Now that you've graduated, this place won't be the same.

Love, S.

Staff

Thanks to all who helped me with the first issue. Next time we'll be even better!

Me

WES:

You finally did it. The university won't be the same without you! Congratulations and best of luck!!!

The Avion and Phoenix crew

Laura,

Thanks for being so understanding with me. I love you.

Yours, [illegible]

MULTI-ENGINE RATING IN

...quipment. You could pay more, but why? Call Vivienne at 761-9653 and leave message.

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The Avion and Phoenix crew

Laura,

Thanks for being so understanding with me. I love you.

Yours, [illegible]

For further information contact Major Dennis Fitzsimmons at building M on Campus or Ex. 6460

ARMY RESERVE OFFICERS' TRAINING CORPS