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THE AVION

THE AWARD-WINNING NEWSPAPER OF COLLEGE AVIATION
EMBRY-RIDDLE AERONAUTICAL UNIVERSITY

Volume 29, Issue 2

May 24, 1978

FAA: AFTER YOUR MONEY

By Jonathan Bailey

The F.A.A. is after your money again; not just pilot's money but maintenance technician's money also. The F.A.A. has just issued a Notice of Proposed Rule Making pertaining to fees for airman and maintenance technician certification tests.

Some of the largest fees proposed are aimed towards mechanics. For example, the Airframe Mechanics practical test would cost \$354.00 and that is Airframe ONLY. Powerplant tests would cost a further \$267.00 and should one fail the test on the first try one must pay again for a re-test.

For each written test a mechanic must pay \$32.50 and airman will pay \$17.00 and for the first time this includes private pilot candidates.

The following is a list of test fees for maintenance technicians and airmen.

MAINTENANCE TECHNICIANS	
1. Each written test, other than for an Inspection Authorization	\$32.50
2. Each practical test administered by the FAA for a flight crewmember other than a Pilot	\$440.50
3. Each Inspection Authorization issued under Part 65.91	\$252.75
4. Each RENEWAL of an Inspection Authorization issued under Part 65.43	\$121.50
5. Each practical test administered by the FAA for an Airframe rating for a Mechanic certificate	\$354.50
6. Each practical test administered by the FAA for a Powerplant rating for a Mechanic certificate	\$267.00
FOR AIRMEN	
1. Each Written test	\$17.00
2. Each issuance of a Student Pilot certificate	\$10.00
3. Each practical test administered by the FAA for a Private Pilot certificate or additional rating on that certificate	\$113.00
3. Each practical test administered by the FAA for a Private Pilot certificate or additional rating on that certificate	\$113.00
4. Each practical test administered by the FAA for a Commercial Pilot, Airline Transport or Flight Instructor certificate, or additional ratings on that certificate	\$167.00
5. Each RENEWAL of an unexpired Flight Instructor certificate under Part 61.197	\$60.50

ERAU HOLDS 30th DAYTONA BEACH GRADUATION

Embry-Riddle Aeronautical University's 30th Daytona Beach graduation was held at 9 a.m. April 22. Commencement ceremonies were held outside, adjacent to the Gill Robb Wilson Aeronautical Science Center on the main campus.

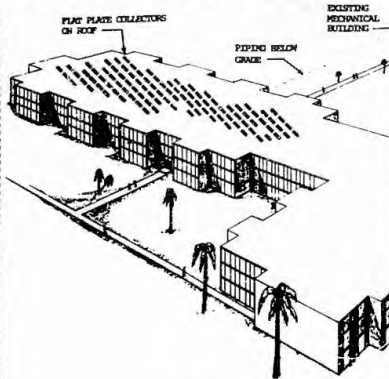
A total of 201 persons, including six women and 13

Master's degree candidates from the University's Miami Graduate Center, received degrees.

Dr. Fine W. Davis, longtime associate of the University and a member of its Board of Trustees was the guest speaker. He is President of Winn-Dixie of Montgomery, Inc. Operator of Winn-Dixie supermarkets.

A reception in the E-RAU University Center followed.

DORM GOES SOLAR



By Jonathan Bailey
News Editor

Embry-Riddle joined the ranks of the energy conscious when installation of a solar hot water unit was completed two months ago.

The system was paid for by a grant of \$89,700 provided by the Federal Department of Housing and Urban Development. It consists of a group of one-hundred flat-plate type collectors arranged on the dorm roof facing the south. Water is heated in the collectors and then circulated to a 3,000 gallon storage tank, located next to the tennis court, from which it is tapped off as needed. The tank will store water at 130-160 degrees for up to two days. The solar system is

also connected to the conventional, gas heating system in case there should be an extended period of cloudy weather.

As the system has only been in operation two months no figures are available on actual energy savings as yet. It is anticipated, however, that the system will provide 90% of the dorm's hot water and so save about 30% of the regular heating bill.

The system took nine months to design and install. The designers were Stottler and Stagg, Inc. and installation was completed by Carter Electric and D.W. Browning of Daytona Beach.

VARIEZE: POISED FOR FLIGHT

By Jonathan Bailey
News Editor

Mr. Bill Cook's Varieze is ready to take to the air after many long months of hard work.

For those of you who missed last trimester's article on the Varieze, Bill Cook is a local resident who has built a rather unconventional home-built airplane made from fiberglass and foam, powered by a 85-horsepower Continental engine and the tail is located in the front. This "tail" is known as a canard and this arrangement makes stalling virtually impossible as the canard stalls before the wing causing the nose to come down and air speed to build up again and so preventing the wing from stalling.

The engine burns three gallons per hour at a true Air Speed of close to 200 miles per hour. The airplane seats two in surprising comfort and has dual side-stick controls but only one set of rudder pedals.

At present Cook is busy going high-speed taxi tests at Deland Airport and working out the bugs of which there seem to be very few. The F.A.A. are expected within a week or two to inspect the airplane and certify it airworthy at which time the AVION hopes to report on what it is like to fly in a Varieze so keep your eyes open for more news.

ERAU GETS \$50,000 GRANT FROM CESSNA

By Jonathan Bailey

Cessna Aircraft Company, Inc. recently announced that it was making a grant of \$50,000 to be put towards the total cost of the new Engineering Science Building presently being built next to the Maintenance Technology complex.

Cessna president, Russ Meyer, announced the grant in a telegram to President Hunt. The grant will be paid over a 5-year period at a rate of \$10,000 per annum.

Site clearing for the new building began on May 1st after the construction contract was signed on April 27th. Com-

pletion date is anticipated by August 15th.

When completed the new building will house three wind tunnels including a smoke tunnel, a low-speed sonic tunnel and a high speed supersonic tunnel, a structures lab, a material lab and a forty-station aircraft design lab on the first floor and 15 offices for 30 faculty members on the second floor.

The building plans include parking for 300 cars. The construction contract is being carried out by the Dunlop Construction Company of Daytona Beach.

Schedule for Course Equivalency Examinations

Summer A & B College of Aeronautical Studies		
Aeronautical Engineering	June 8	July 28
Aviation Management	June 13	August 13
Computer Technology	June 8	August 10
Humanities and Social Science	June 6	July 25
Mathematics and Physical Science	June 12	August 6
College of Aviation Technology		
Aeronautical Science	May 31	July 26
Avionics and Electronics	May 26	July 21
Aviation Maintenance Technology	May 26	July 21

The procedure for making application to take the course equivalency examination is:

1. Fill out an application form at the Records Office and pay the fee of \$45 at the Cashier's Office.
2. Take the application form to the Division Chairman in whose division the course is offered for which the examination is to be taken three weeks prior to the date of the examination. A course outline and textbook references will be provided for each course in which an examination is to be taken.
3. Make an application with the Division Chairman for the exact time and place to take the examination.
4. After the examination is graded, the person who took the examination will be notified in writing whether he successfully passed the exam. If he passed the examination, he will be given the credit value, but will not be given a grade. The student's academic record in the Records Office will reflect "Credit by Examination" for the course.
5. Only one examination attempt shall be allowed for each course. If the examination is not passed, the student must enroll in the course and successfully complete it in order to receive credit.

THE RIDDLER???



This week's Trivia question is very easy. It goes like this:

The Riddler went to the bank and wrote a check. The bank made an error however, and gave him dollars for cents, and cents for dollars. When he got home he discovered he had exactly twice the amount he had written the check for. He had no cash prior to writing the check. How much was the check written for. Good Luck!!

No one answered the Riddler's easy question last week. The answer is Boeing offers nine versions of the 747 for sale.

However we did want to mention that the winner of Trivia last week was the winner of the E-RAU's Hairstyling and Spring Trimester was Tim Rice. Hairstyling shop.

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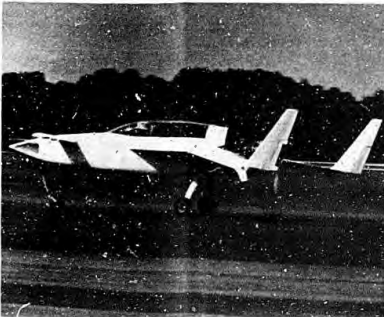
Somewhere in this paper is someone's social security number. If you find your number in this issue you are the winner of a free Miller T-Shirt, compliments of S.R.Perrott, Inc. Miller Distributors.

If your number appears, pick up your T-Shirt in the Avion Office.

W.E.R.U Radio Station Meeting CPR Thursday, May 25, 1978 at 5:00 PM. Open to any student.

DISCOUNT THEATRE TICKETS AVAILABLE

The Student Activities Office is offering Discount Tickets for the ABC Theatres for the benefit of the Will Rogers Memorial Fund for Medical Research. The tickets will be on sale for \$2.00 each and can be used at any ABC Theatre for any movie. The ABC Theatres in the Daytona Beach area are the Daytona Theatre on 176 North Beach Street and the Mall 1 and 2 Theatres located in the Sunshine Mall Shopping Center in South Daytona. The tickets are available to all students, faculty and staff.



VARIEZE DURING HIGH SPEED TAXI TESTS
photo by Bailey

OPINIONS

THE OPINIONS EXPRESSED IN THIS PAPER ARE NOT NECESSARILY THOSE OF THE UNIVERSITY OR ALL MEMBERS OF THE STUDENT BODY. LETTERS APPEARING IN THE AVION DO NOT NECESSARILY REFLECT THE OPINIONS OF THIS NEWSPAPER OR ITS STAFF. ALL LETTERS SUBMITTED WILL BE PRINTED PROVIDED THEY ARE NOT LEWD, OBSCENE, OR LIBELOUS, AT THE DISCRETION OF THE EDITOR, AND ARE ACCOMPANIED BY THE SIGNATURE OF THE WRITER. NAMES WILL BE WITHHELD FROM PRINT IF REQUESTED.

EDITORIAL

By Dick Butler
AVION Editor

Did you hear about John? He finished up his last trimester in the spring and showed up a graduation only to find out that he was still one class short. Fortunately, this never happened. My point in bringing it out is there is a real possibility that it could happen. How many of you are getting down to your last trimester and have not been over and spent some time with a counselor to verify that you haven't forgotten anything? I Graduate in June and went over shortly before the A term began and discovered that I needed one more class than I thought I did. It would be unfortunate to have to spend another trimester here for one class.

I think, in looking back over my college career, that one of the best pieces of advice I could give the new student would be to let the counselors help you to plan your education. Perhaps by taking certain courses you might be able to qualify for an Associates Degree in your minor. You are paying for this service, it would be in your best interests to use it.

While we are on the subject, let me address a question to the Administration. Would it not significantly reduce the number of course substitutions and help to standardize the curriculum if the school were to require a student spend a session with his advisor or a counselor once or twice a year?

Dick Butler

FEEDBACK:

In order to provide Embry-Riddle students, faculty and staff with up-to-date information regarding the University's growth and development, The AVION will print questions and answers relevant to E-RAU operations, and planning activities. If you have a question, you may present it in person at the University Center Common Purpose Room near the main switchboard, on any Thursday from 8 to 9 a.m. and from 4 to 5 p.m. Embry-Riddle Marketing & Development representatives will be on hand during these times for personal discussion. Or visit or write to Marketing & Development, Administration Building, any time Monday through Friday, 8 a.m. to 5 p.m. Please call ext. 33, 334, 335 to arrange an appointment.

STUDENT'S QUESTION OR COMMENT

WHY DO E-RAU SECURITY STAFF MEMBERS ACT LIKE PRISON GUARDS? WE GET NO SMILES AND NO HELP FROM THEM? 374-66-6636

ADMIN. ANSWER OR COMMENT

John A. Fidel, Embry-Riddle Director of Administration, had this to say about the Security situation:

Positive steps have been taken to improve the efficiency, attitude and image of the former Security Department. This department, as it previously existed, was not in tune with the philosophy of Embry-Riddle. It was evident that the department not only must become more efficient, but also become more responsive to the needs of the students. In addition, it was essential that in carrying out their day to day services, the Security personnel better project the image and standards of the University to students, staff and the public.

The department was re-assigned to function within the Physical Plant management structure. This is organizationally consistent with universities of our size, and with our efforts to ensure continuity of services. The name was changed

to Department of Safety, with security and traffic recognized as inherent parts of "safety." An in-house and area advertisement search was made for a Director of the new department who had the qualities and management skills necessary to implement, manage and develop

at new Safety concept and program. Mr. Philip Bird was finally selected for the position. Mr. Bird, a graduate of Stetson University, with a B.S. degree in Business Administration, brings to Embry-Riddle a unique combination of administrative skills and experience, which includes an awareness of

individual needs and law enforcement.

In overall numbers, our Safety force has been reduced. This has been compensated for by an all-out effort to increase the efficiency and upgrade the professional skills of its personnel. We are still in the early stages of our operation under the new Safety concept. Students are encouraged to make recommendations or discuss any difficulties they may be experiencing in regard to the Safety program with Mr. Bird. Be assured you will find him both receptive and responsive.

ROVING REPORTER

Keith Kollarik

The AVION just published the results of a survey conducted by Marketing and Development. One section of that survey dealt with student comment on various things that have room for improvement at the school. The AVION's Roving Reporter question this week is:

If you could take President Hunt's place for one day what would be the first thing you would change for the good of the school?



1. "Decrease total number of students. Graduates are increasing while safety, professionalism and proficiency are decreasing due to unnecessary overload, not due to the instructors."

Jim Gorman, aero. Studies



3. "Establish major student engineering projects. Perhaps experimenting with modifications on some of our aircraft that have been donated to the Engineering Department."

Hal Scripka, Engineer



4. "Decrease the amount of money charged for living in the dorm."

Carlos Moreno, Maint. Tech

8. "I would hire an efficiency expert. I feel that the employee turn over rate is astronomical. There must be a better way."

Mike Jaworski, Aviation Mang.



7. "I would recommend that the expansion plans be accelerated to accommodate the rapidly increasing number of students."

Dave Johnson, Pro Air



5. "I'd publish a list of exactly where the tuition we pay is going."

Phil Perry, Maint Manager.



6. "Build a gym so we could have some sort of decent athletic program."

Leona Jordan, Engineering



2. "Put more money into the engineering department, instead of the Flight Line."

Oz Alfert, Engineering

IS CO-OPING FOR YOU?

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- POTENTIAL DEGREE CREDITS!
- TEST CAREER GOALS
- BRIDGE-THE-GAP BETWEEN STUDENT AND WORKING WORLDS

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- COOPERATIVE EDUCATION OFFICE UNIVERSITY CENTER

CONTACT

- WARREN A. MESSNER, DIRECTOR
- ROBERT BYER - CO-OP COORDINATOR EXTENSION 302/303

NOTE: STUDENTS WHO ALREADY APPLIED FOR THE CO-OP PROGRAM SHOULD COME AND UPDATE YOUR APPLICATIONS.

the avion staff

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Volume 29 Issue 2

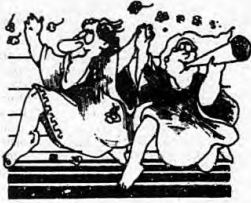
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Klyde Morris

we/ ole/zew/kl



TAKE TIME OUT



Since this weekend is a holiday weekend, and there are no classes on Monday, it might be a good idea to plan out your free time to enjoy it to the max!

Here's some up and coming events and some personal recommendations for this weekend and the near future! Beach and beer is always good, but for a change of pace... P.S. BRING YOUR IDEAS UP TO THE AVION OFFICE.

By Gail Tworek

... This Saturday night at 8 p.m., Robert Palmer will be rockin' in concert at the Orlando: Jai-Alai Fronton. Also appearing is the Pousette-Dart Band and Henry Paul. Tickets are \$6 at the door or you can buy them in advance.

... The Student Government Association has scheduled several very good and very free movies for the summer trimester. Saturday, May 27, will feature the highly acclaimed and exciting movie "Marathon Man" starring Dustin Hoffman. The schedule for the rest of the summer is as follows:

- June 2 Death Wish
- June 16 Chinatown
- June 27 3 Days of the Condor
- July 7 Once Upon a Time in the West
- July 14 Fear is the Key
- July 28 Islands in the Stratos

TOP BRITISH EXECUTIVE VISITS RIDDLE CAMPUS

At the invitation of Embry-Riddle Aeronautical University, Mr. Grant Lockhart, British Leyland's Regional Industrial Relations Director of England and Wales, agreed to speak to management students at the Upper Heyford, England, E-RAU Extension Campus.

Mr. Lockhart's responsibilities in high level management span 14 locations and 35,000 employees, making him an ideal choice to explain some of the personnel problems facing management in a large, modern

and highly complex organization.

Mr. Lockhart talked to the class and students from City Colleges of Chicago and several base officials for two hours. He discussed such topics as collective bargaining, employee relations, grievance procedures and wage structures.

Mr. Charles Miller, Management instructor for the class, and Mr. Michael Castelli, E-RAU's area coordinator, organized Mr. Lockhart's appearance.

... Walt Disney World is always a good place to go to enjoy your free time, but, a special evening is coming up in the near future. On June 2 the Magic Kingdom will come alive with a disco extravaganza.

Well-known recording artists such as "The Tramps" (Disco Inferno), "BT Express" and Peter Brown, will perform and there will be dancing throughout the theme park. A single price ticket, \$7.95 in advance; \$8.95 at the gate if available, entitles you to unlimited use of the rides in the theme park and its transportation from 9 p.m. to 1:30 a.m. There will also be a fireworks display at 10 p.m. So, for not much more than the price of a concert ticket, you can see the great attractions of Disneyworld! In the Daytona area, tickets are available at Sears stores.



INTERNATIONAL STUDENTS CORNER



LIBYA: An Ancient And Modern Civilization

By Taher Zeglam

Libya is one of the Arab countries in the middle east located in the north of Africa. Egypt is on the eastern border, and the Mediterranean Sea is north of Libya. Tunisia and Algeria form the western border. Chad, Niger and Sudan form the southern border.

The population of Libya is nearly 3 million. The area is 2 1/2 times the size of the state of Texas. The capitol of Libya is Tripoli. The other two major cities in Libya are Benghazi and Sebha. Most of the people live by the coastal strip. Most of the country is desert, which is about 75% of the total area. The Arabic name for the desert is Sahara.

The major religion is Islam. Almost all Libyans are Muslims. Our religion, Islam, is based on the Koran, which includes the original Old and

New Testament. We believe in all the old prophets, messengers of God, Moses, Jesus Christ, and Mohamed. We see Jesus Christ and Mohamed as equal messengers of God with Mohamed only being the later messenger of God. We, the Muslims, the Christians, and the Jews all worship the same God.

Our national language is Arabic. This past year our National People Congress added the Arabic word Jamahira to our national name which means government of the people, by the people, and for the people.

Our recorded history goes back over 4,000 years. Many of the antiquities are still standing. Libya's archaeological sites are unmatched all over the world. They include ancient Greek and Roman theaters, baths, roads and buildings.

They are very interesting for the average tourist to see.

Our major export is oil. About 11% is exported to the United States, and other major oil export countries are Japan and West Germany. With the oil money we are also developing new industry, agriculture, and education.

The education in Libya plays a big role in our society. We have over 700,000 students going to school in Libya from elementary to secondary through university levels. There are about 3,000 Libyan students taking their education in the United States in different majors.

The Libyan students at Embry-Riddle take the friendship you have extended to us back to Libya. We hope you will visit our country so that we can return the hospitality you have shown us.

COMING UP NEXT: MAURITANIA.



IT WAS ONE OF THOSE CLASS/ROOM ROMANCES BETWEEN CLASSES!



GO DIRECTLY TO JAIL! DO NOT PASS GO DO NOT COLLECT 200 DOLLARS!



BEEN NICE MEETING YOU MR. AMOS. HOPEFULLY YOU'RE JUST LIKE KATHY DESCRIBED YOU - REALLY OUT OF IT!

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IT HAS ARRIVED!!
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DAYTONA REGIONAL AIRPORT

HELP GIVE VOLUSIA COUNTY'S SLOTH A HOME

HE HASN'T HAD ONE IN 150,000 YEARS

Your dollars will build an exciting exhibit wing at The Museum of Arts and Sciences in Daytona Beach.

To help get those dollars, the Junior Service League of Daytona Beach, Inc., is sponsoring a SLOTH JOGGER-WALKER-RUN -ATHON, on Saturday, June 3, 1978 from 9:00 a.m. - 4:00 p.m. on the beach - on a 20 mile stretch.

Sponsor: must be signed up to pledge money for each mile you participate in the -ATHON. For further information contact the Museum at 255-0285.

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CORRECTIONS IN LAST WEEK'S AVION

In the Media Center Security System story last week a couple errors were made that need correction. First The radar units at the airport were blocking the pick-up system when the unit was installed in the library, not while it was in transit. And the water fountain which was

also causing the unit to not pick up book signals was removed, not relocated.

New filters were put on the system and it is now working properly.

Also, the young woman featured in the picture of the Security System is Gina Grisafi, a student assistant in the library, sorry, Gina.

BOTTLE & CAP BAR BEER WINE PIZZA

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1 TO 4 P.M.

MON. THRU FRI.



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"SOMETHING TO DEPEND ON"

For a view of God's law as something practical, unchanging, and available to help in every situation, plan to attend this

FREE LECTURE ON CHRISTIAN SCIENCE

Daytona Beach Community College Humanities Auditorium (corner of Second Ave. & White St.)

8:00 p.m. Tues., May 30

(Mark it on your calendar!)

CIVIL AIR PATROL MARKS 36 YEARS OF SERVICE

If you crash-land in your small private plane (or a large one, either), get lost while hiking in some mountain wilderness, or your child wanders away from a vacation camp, who will come looking for you—or him?

Well, you answer, lots of people—the police, local volunteers, and, er, well, lots of people.

Chances are that among the searchers will be the dedicated members of Civil Air Patrol (CAP), the official civilian auxiliary of the United States Air Force which celebrated its 36th anniversary last year.

They probably will be up in the sky in small airplanes, looking for you. They will also be part of the ground search teams scouring the countryside.

Each year, Civil Air Patrol pilots and observers, assisted by scores of ground team members, fly three out of every four flying hours spent in the United States on search and rescue efforts which the Air Force Rescue and Coordination Center (AFRCC) directs.

They have been performing these aerial search and rescue operations—a lot more humanitarian efforts—since the dark days of WWII.

CAP was established on Dec. 1, 1941, one week before the Japanese attack on Pearl Harbor. The organization was the result of worry and efforts on the part of hundreds of aviation-minded private citizens who could foresee war coming and wanted to contribute their aircraft and efforts in the nation's civilian defense efforts.

During the war, its members flew patrol missions off the Atlantic and Gulf Coasts, looking for enemy submarines; conducted border patrol duty along the Mexican border; acted as civilian couriers carrying mail, light cargo and passengers, thus saving the time and expense of military planes; towed targets for aerial gunnery practice; and flew hundreds of aerial search missions.

In 1946, rather than see such a useful organization die, Congress chartered Civil Air Patrol as a non-profit, humanitarian corporation whose members would be all volunteers. In 1948, Congress made Civil Air Patrol an official auxiliary of the Air Force and gave the Air Force authority to help it conduct its activities and lend it a degree of assistance.

In the first 10 months of this year, the men and women of Civil Air Patrol have conducted 695 emergency service operations (missions). This is one higher than the 694 missions recorded in all of 1975, the highest figure in recent years.

No one knows what is the record number of searches or lives saved for the war years and the earlier postwar years since no official records exist for those years which are comparable to those being kept today.

In 1975, Civil Air Patrol was credited with saving the lives of 57 persons through its search and rescue operations, the highest in recent years. So far this year, 45 persons owe their lives to CAP efforts.

But these 45 have been saved while flying fewer sorties (7,859 in the first 10 months of 1977) and expending fewer flying hours (14,752) than in 1975. In addition, Civil Air Patrol crews have located their search objectives 393 times this year.

These statistics indicate increased efficiency on the part of Civil Air Patrol and the reasons are varied. Sophisticated new search techniques, developed in cooperation with the Federal Aviation Administration (FAA) and the AFRCC have contributed to it. So have the stepped-up training efforts of Civil Air Patrol and its members.

The FAA, Civil Air Patrol and the Rescue Coordination Center have developed techniques to utilize satellite photographs and computer-recorded radar data to speed up aerial search efforts. The techniques are effective and have shortened the time spent on searches where it has been possible to use these techniques.

In addition, intelligence-gathering efforts which seek to give a picture of the crew on crashed airplanes and predict what they might have done have contributed to increased efficiency.

So, as Civil Air Patrol observes its 36th year of service to community, state and nation, its members point proudly to its record of emergency services and to the hundreds of lives it has saved over the years.

But, it expends its life-saving efforts in other ways also. This year, for example,

it has been involved in saving lives during the late winter blizzards in Colorado and in rescue efforts in the canyon flood disaster there, in Johnstown, Penn., and more recently in Toccoa, Ga. In addition, each year CAP crews perform many mercy flights, airlifting needed human blood, sera of various kinds, and patients who need to be moved to better medical facilities.

When Civil Air Patrol members proudly tell you of their organization, they begin by telling you of its life-saving efforts, since that is the mission for which it is most famous.

But there are others, its aerospace education mission for example.

Civil Air Patrol has been responsible for helping inaugurate courses on aviation and space-related subjects in hundreds of schools across the nation. And each year, it sponsors aerospace education seminars in colleges in every state, to help train teachers in how to teach these subjects.

But, most of all, Civil Air Patrol is proud of its program of leadership development and motivation for young people—its cadet program. When some young people are told about CAP's cadet program, they may shy away from an organization which has friendly ties to the military. But after they become a part of it, they think its wonderful.

Civil Air Patrol sponsors a training course in aerospace education as part of its cadet program. In addition, it sponsors a variety of special courses and encampments for its teenage members—many of these being in cooperation with the Air Force.

The top-level such activity is the International Space Exchange. Under this program, which the Air Force helps sponsor, young members of Civil Air Patrol, accompanied by adult escorts, visit approximately 22 foreign nations which participate in the program. At the same time, Civil Air Patrol is host to like numbers of foreign cadets who visit the United States during this annual summer program.

So, if you get lost out there in the wilderness, if you little plane crash-lands and you survive, take heart. Civil Air Patrol volunteers will be out there looking for you. And when you see that small plane with the CAP insignia fly over, cheer up, help is near.

Then, while you are recuperating from your traumatic experience, they will tell you how important it is for Americans to understand the importance of aviation and space developments and about the cadet program. If you listen long enough, you may find yourself getting proudly involved.

After all, if you have helped establish a 35-year record of service to the nation, you have reasons to be proud.

DELTA ROCKET EXPLOSIONS PROBLEM SOLVED

KENNEDY SPACE CENTER, Fla.—When Bob Denaburg of KSC's Malfunction Investigation Staff first saw the bits and pieces of Delta 134 spread out on the floor of Hanger A1 on the Cape, he knew how the "king's men" must've felt when they were given the job of trying to put Humpty Dumpty together again.

But Denaburg and his colleagues had a much more difficult task than the royal entourage of the well-known nursery rhyme. They weren't dealing with eggshells, but the recovered remnants of America's workhorse Delta rocket.

And somewhere among all that shattered and twisted debris were clues that might reveal why Delta 134 and the European Space Agency's Orbital Test Satellite took a \$42 million plunge into the Atlantic shortly after liftoff last September 13.

"It was obvious from the start that we had our work cut out," said Denaburg, a metallurgical engineer. "After the Delta pieces were reassembled jigsaw-puzzle style, we were asked to join in the search for telltale signs... critical samples... that would lead us somewhere, hopefully to a solution."

The Malfunction Investigation Staff, headed by Drew Evans, is KSC's counterpart to TV's fictional gunshoes, Columbo, Kojak, and Barnaby Jones. "There's really not a whole lot of difference between us and them," Evans jested. "They deal with people and we deal with hardware. But the process is the same."

Evans' band of superleuths works out of offices and labs located in KSC's Operations and Checkout Building. At their disposal is approximately \$2 million worth of sophisticated test and analysis equipment which allows them to probe into the causes of just about any kind of material or component failure.

Even so, the Delta 134 case taxed the staff's expertise and resources, gobbling up over 300 manhours of effort and patience. The first clue was found on the battered remains of solid rocket number 1, one of the nine Castor IV strap-on solid motors used to impart added boost to the Delta.

Solid number 1 was of special interest to Bob Denaburg and the rest of the team because photographs taken during the launch phase had revealed a massive plume of fire emanating from the solid. Seconds after the plume appeared, a gigantic explosion ripped the Delta to shreds. Had solid number 1 ruptured, causing the explosion, or was the explosion the result of a failure of some kind within the Delta's liquid-fueled booster stage?

A check of solid number 1, fortunately, one of the eight solids recovered by salvage teams, revealed that it indeed

had ruptured. Furthermore, a number of hot spots, or heat affected areas, were found on the metal casing of the solid's aft section. "These hot spots were not normal," said Denaburg, "and indicated an uneven propellant burning problem for a liner failure."

Metallurgical examinations show a hardness difference between the metal of the hot spot areas and the surrounding casing, indicating that the casing overall may not have met material specifications. "This led us to believe that a heat treatment problem existed at the time the casing was fabricated," Denaburg added.

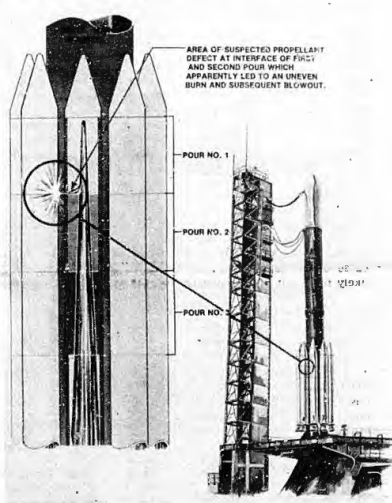
Additional metallurgical and mechanical properties tests of solid number 1 and the other seven recovered solids were conducted by the staff and their counterparts at other NASA centers and contractor organizations. It was confirmed by all testing groups that a generic heat treatment problem and some minor welding problems were inherent in the fabrication process. Corrective actions were immediately initiated in the manufacturing procedures.

There was still a "fly in the ointment," Denaburg pointed

out. The tests also confirmed that the casings, though not up to standard specifications, were materially sound enough to withstand the internal pressures generated by the burning solid propellant. "In other words, it was highly unlikely that the casings would rupture internally under normal burning conditions," he explained.

New evidence uncovered by the Microchemical Analysis Lab shifted the search from the aft section of number 1 to the forward section where the propellant grain was housed. The evidence was in the form of metallic nodules found imbedded in the insulation material of solid number 4, which was mounted on the booster adjacent to number 1. The position of the nodules on number 4, sprayed out like buckshot, coincided with the section of number 1 where the second propellant port interfaced with the first. Moreover, the imbedded nodules were of the same metallic composition as the casing alloy of number 1.

Denaburg explained that the propellant for the Castor IV solids used on Delta 134 is



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The Vets will have their next meeting this Friday, May 26 at 7:30 p.m. in the CPR. All those interested in joining the Vets this tri should attend. Rumor Control has it that Dirty Dave will be buying after the meeting at Big D's in celebration of his birth.

That could be a first! Don't miss it!

A final reminder everyone interested in playing softball contact Bob Allen. Anyone knowing the whereabouts of 128 lbs. of air for balloon tires contact Bill Daley.

Top Hits of the week as picked by Vets at Random - Bill Dciley - "Cool, Clear, Water"; Dave Johnson - "I Could Have Danced All Night".

Reminder - Friday is Shirt Day.

This past Friday the Vets began their Summer Fling by hosting a TGIF. Everyone seemed to enjoy the Hot Dogs and Beer. Some of the crew used the time to brush up on their Frisbie skills. A job well done goes out to Dirty Dave Johnson and his committee for making the whole thing possible. A special thanks to Dr. W. O'Connor for slaving over the blazing coals to get the Hot Dogs out.

ROCKET EXPLOSION

Continued from page 4

poured like a thick pudding in three separate stages. On hardening, the propellant interfaces merge together into a homogeneous unit. "If they don't," said Denaburg, "a hairline crack might form at the interface. During burn, the crack can become the initiation combustion chamber. Pressure would build quickly and the casing could rupture at that point."

tween the propellant and motor case as extra protection against such defects. Also, procedures for mixing and curing the propellants have been revised, and contractor and government test, inspection and manufacturing surveillance have been improved.

New Castor IV motors incorporating these corrective actions were used for the successful launch of Delta 141 on May 11. Ironically, the payload was OTS-2, a replacement for the European Space Agency satellite lost aboard Delta 134.

The loop had been closed, largely due to the efforts of KSC's master sleuths.

"It appeared from the investigation that the possibility of a propellant anomaly existed on solid number 1 which probably caused a burn-through of the casing, exposing the Delta booster to extremely heat and igniting his liquid fuel."

The Review Board, after studying the technical evidence submitted by all NASA and contractor investigative groups, reached virtually the same conclusion. A final report issued by the Board stated that the cause of the failure was most likely the result of a propellant defect in solid number 1, due either to incomplete mixing and curing of propellant ingredients or introduction of contaminant, probably water.

As a result of the Board's findings, the design of the Castor IV solid rocket motor has been changed. Additional insulation has been placed be-

FRANKLY SPEAKING by Phil Frank



I KNOW WHY THEY'RE NOT PAGING THE VASSAR DUNNER - THEY DON'T WANT TO PAGE HER!

FORE!

By Jonathan Bailey

Are you pretty handy with a golf club? If you are then the Golf Team wants you.

The Golf Team is one of the few teams that remain active during the summer and at the moment it is short of players. There are seven openings on the team and if you are interested in joining, the Team would be glad to let you try-out. Try-outs are held every Saturday morning at 8:30 at the Daytona Beach Golf and Country Club. Contact Jim Singletary at Ext. 318 to make try-out arrangements.

It's a great opportunity to improve your game and do some travelling. The Team has meets at 16 Florida universities and colleges plus three or four local competitions so grab your clubs and get in on the fun. Fore!

Bowling News

By Burt Sills

The Riddle Bowling League will be bowling 7:00 Friday nights at Halifax Lanes, 660 Mason Ave. Students, faculty and friends are invited to come out and bowl, as there are still a few teams who need bowlers. The cost is \$3.50 per week with a small sanction fee the first week. Last week, Marilyn Sills bowled a

real nice 207, 503 series, and Tanya Baldauf a 177, 482. For the men, Jeff Marks took high game and series with a 224, 638 series. Also Doug Baldauf achieved a close second with a 221, 601 set. Please contact Box 3357 to sign up, no previous experience necessary.

Sigma Chi

By James L. Javurek

Would you believe that through our frivolous and fiery antics this past weekend, Sigma Chi has managed to carry on our tradition of unparalleled entertainment and Good Cheer? Yes folks, we really out-did ourselves this time. The sultan committee was out in full force for eight hours on Saturday, and that same evening we did a Sigma Chi power play and raided the ABC Lounge in South Daytona. Of course, our disco couple Tom and Chris were in the dance floor doing their thing, "YOWSA!"

That next morning, everyone was up bright and early (well, almost everyone and almost early) to begin an event that's bound to win us a meritorious achievement award for originality on the Gong Show . . . the "Sigma Chi Car Wash and Bar-B-Que". It seemed we washed half the cars in Daytona and a few of the brothers and little sisters as well.

But the good part really began with our cook-out back at the ranch. Everyone had a great time. We all caught some rays and really had some relaxation. I mean, how could you NOT have a lot of fun with a half barrel of beer and a spiked watermelon for dessert? Much thanks to Brian

Henrick for the fantastic job he did.

That's just a brief description of the fun we had this weekend. But about the great time we're having this upcoming weekend will be nothing short of wild. Friday night, we're going to explore "CASSADEGA"! Hey, that's right, we're going to get all the gusto we can out of life and get some kind of glimpse into the unknown. This should put hair on your chest.

As for Saturday night, we all plan on going to "The Last Moving Picture Co." in Orlando. We'll have their "BOOGIE SHOES". On this should prove out to be a very exciting weekend.

Interested in a fraternity but don't know who to talk to? Sigma Chis are all over the campus and are willing to answer any questions about social fraternities you might have. Simply stop one on the shoulder, or if there isn't a Sigma Chi in sight, stand on your head and kick your legs in the air. I'll tell you one thing, you'll get everyone else's attention and there's bound to be a Sigma Chi in every crowd.

We're located at 520 South Ridgewood and our phone is 252-2277. Feel free to get a hold of us any time.

MEDIA CENTER NEWS NEW HOURS!!!!!!

Remember the survey from the media center about weekend hours last trimester? The results were 3 to 1 to open on Sunday instead of Saturday. So, WE DID! The New Hours are from 4:00 PM - 10:00 PM - Sunday.

Don't forget, no more Saturday hours. After a good weekend of surf and sun, you'll be ready for serious Sunday studying. (Maybe!)

Stop by and check out some of the new books:

- Marathon: The World of Long Distance Athlete
- The Ghost of Flight 401
- Fell's Guide to Doubling the Performance of your car.
- Spitfire at War
- The Photographer's Handbook
- Non-Prescription Drugs and their Side Effects
- The End of a Presidency
- Understanding Gliding
- The Relaxation Book
- Out of This World: American Space Photography
- Crash

These are just a few titles of new and exciting additions to the collection. Stop by and find even more.



We have planned a big weekend over June 10-11. We are going to Disney World, and Busch Gardens. This should prove to be the trip of Term "A". Anyone who might be interested in coming with us, get in touch with one of the brothers, or come to the meeting Thursday night, 7:00 p.m. at Snappingh Woods Apt. 26. If you need a ride, that can be arranged too!

A left-wing group seems to have jelled in the heart of our fraternity. These sons of Leopold seem to have been sharpening up certain skills. Rumor also has it that their mad Finn leader may soon be escaping to the North.

Well, that's about it for now, a special hello to Chuck Timberlake, (see I remembered!) Glad to have you around. HEY SIGMA CHI, READY TO DO SOME PARTYING?

"CAPTURE THE SUN"

CONTEST NOW UNDERWAY FOR COLLEGE STUDENTS EASTERN

Students from Embry-Riddle Aeronautical University have the opportunity of winning a \$500 U.S. Savings Bond in the "Capture the Sun" contest now underway to promote interest in solar energy and to encourage energy conservation.

The contest is for the best working model or display or technical paper on a new way or method of using Florida's greatest asset - sunshine. In addition to the \$500 U.S. Savings Bond for the winner, there will be a check for \$500 for the college or the university.

There will be six runners-up. Each runner-up will receive a \$250 U.S. Savings Bond, and the college or university will receive a \$250 check. Deadline for entries is 5:00 p.m. Friday, July 7 and entries must be delivered to a local Florida Power & Light Company office. The best entries will be displayed at the Florida Solar Energy Center at Cape Canaveral.

There will be a separate contest for each of the Florida Power and Light Company's six geographical service areas. Counties include:

NORTHERN
Nassau, Baker, Columbia, Suwannee, Union, Bradford, Duval, Clay, Putnam, St. Johns, Flagler, Alachua and Volusia (that's our county).

NORTH CENTRAL
Seminole, Brevard, Indian River and Volusia (Southern portion)

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- FOR RENT - ROOMS**
- LARGE HOUSE for rent - 6 bedrooms, 2 baths - 2 blocks from E-RAI, plenty of parking. Call - 767-0555.
 - WANTED - prefer male - roommate for summer months - Call after 4:30 p.m. 253-7994.
 - ANYONE INTERESTED in subleasing 1/2 apt. or house for three people during most of summer. 972-1280 Edward.
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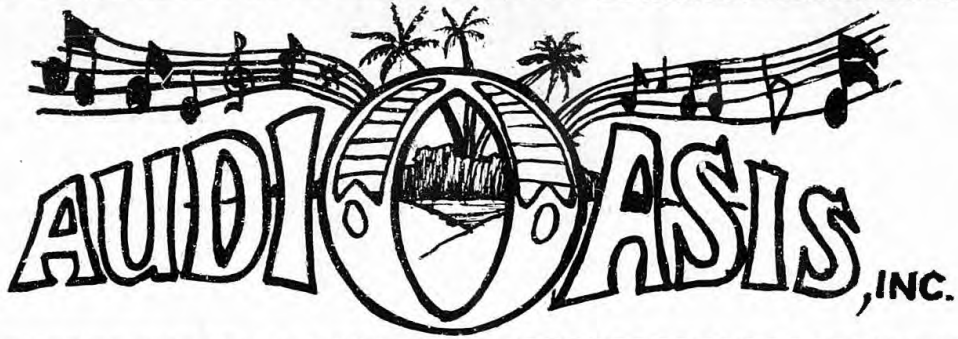
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