

# The Battalion

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Telephone 845-2226

## Apollo 13 Heading Back With Little Air, Power

By Paul Reecer  
(AP) Aerospace Writer

SPACE CENTER, Houston — The Apollo 13 astronauts carrying a diminished oxygen supply, fired their only working rocket Tuesday to start their disabled spacecraft on an arc around the moon and then back to earth. Their moon landing mission was canceled and they were more than 200,000 miles from home.

Astronauts James A. Lovell Jr., John L. Swigert Jr. and Fred W. Haise Jr. fired the descent engine of the small lunar lander, Aquarius, without which they would have been trapped forever in orbit of the moon.

Officials said the situation was "under control . . . We have a safe situation at the moment."

Christopher C. Kraft, deputy director of the Manned Spacecraft Center, said, "If the situa-

tion remains stabilized, there is no question that we can bring them back to earth safely."

A serious drop in electrical power Monday night signaled the beginning of the emergency. Mission Control said the command ship had a major leak from one of the super-cold oxygen storage tanks. What caused the leak was unknown. The impact of a meteor was considered one remote possibility.

The astronauts, fighting to keep enough air to survive until they return to earth, siphoned oxygen from the moon lander. The ruptured tank exhausted the oxygen from the command ship.

The moon lander, still attached to the command ship, was to have taken astronauts Lovell and Haise to the moon's surface Wednesday. Now it must keep the three spacemen alive.

"This is as serious a situation as we have ever had in manned space flight," said Kraft.

Friends and neighbors quickly gathered at the homes of Lovell and Haise.

Apollo 12 astronaut Charles Conrad went to the Lovell house to comfort Mrs. Lovell and her four children.

"She's pretty calm, but tense," said Conrad as he left the house on a motorcycle. In answer to a question, he said: "Sure, they'll make it. Of course, it's always a shame to give up a mission."

"I'm not saying another word until Jim gets back home," Marilyn Lovell told newsmen.

Astronaut Alan L. Bean went to the home of Haise. Mrs. Haise has three children and is expecting another in June.

Swigert is a bachelor and has no family here.

Officials said the Apollo 13 astronauts will depend on the small moon landing craft—docked to the command ship—as a life boat. It is providing them with oxygen and electrical power, both vital to survival in space.

Officials said Apollo 13 would have to circle the moon in order to return to earth. This path was faster than turning around and returning directly to earth because the spacecraft picks up

speed from the gravity of the moon. The moon's gravitational field will whip Apollo 13 around and send it back toward the earth.

The spacecraft is expected to land on earth sometime Friday.

Officials at the Houston Space Center, appearing calm but clearly concerned, said preparations were being made for the craft to land either in the Pacific or Atlantic Ocean depending on flight developments and that aid would be accepted in the Atlantic Ocean.

In their desperate journey home, the astronauts will ride with two spacemen in the command ship and one in the smaller lunar module. The astronaut in the moon lander must be always awake and alert to assure the systems continue to operate.

Oxygen is fed into the command module through a tunnel in the moon lander.

Uncontrolled gyrations, thought to be caused by the venting of the oxygen, caused the spacecraft

to toss and twist out of control from the ships of any nation. At several points after the emergency began.

It was several minutes before Mission Control announced the source of the problem: a critical leak in the super-cold oxygen storage tank of the command ship. What caused the leak was not known.

The loss of oxygen made remaining in the command ship impossible, and Mission Control began giving the spacemen procedures to follow for occupying the moon lander.

The lunar module on which their life depends is designed to support only two men but can accommodate three in emergencies. Never before have three depended on its limited electrical and oxygen supplies for survival in space.

The astronauts are expected to fire the descent engine of the moon lander as they pass be-

hind the moon. This rocket firing will break the gravity hold of the moon and start the trio homeward.

The spacemen probably will ride in the lunar module, until they approach the earth's atmosphere.

They may then return to the command module and use its small remaining oxygen and batteries to return to earth.

The lunar module is not designed to fly in earth's atmosphere and would dissolve in fire if they attempted to land in it.

The emergency developed first as a major loss of electrical power.

An oxygen tank supplying an electrical power cell in the spacecraft apparently ruptured.

Flight Director Glynn Lunney said oxygen pressure in the spacecraft was dropping alarmingly.

Moments later the astronauts (See Apollo, page 3)



IN TROUBLE—A model of the crippled Apollo 13 spacecraft. One astronaut is in the center section of the craft, and two others are in the Lunar Excursion Module (LEM), the lower portion of the vehicle.

## FDT Makes It Three With Saturday Victory

Texas A&M's Fish Drill Team made it three in a row last Friday, winning the National ROTC Drill Championships competition in Washington, D.C., for the third time in as many years.

It was the first time a unit has won the meet three years in a row. The 932 points racked up by the cadets was the best score by an A&M team at the meet and one of the top scores ever there.

The FDT's nearest competition, Pennsylvania Military College, scored 44 points behind, with 888.

Saturday, the fish reasserted their claim to the national title by taking first place in the Cherry Blossom Festival Parade of Princesses.

That night, they were the guests of the Washington Senators at a game against Boston. The cadets led 18 cars carrying festival princesses into the stadium.

A&M commandant Col. Jim H. McCoy called the team's double triumph a masterful feat reflecting hard work, well-drilled skills and outstanding leadership.

The opposition agreed. A mem-

ber of Penn Military College said right after the fish performance: "We didn't think we had any competition until we saw A&M."

Rutger's University's executive officer polled his team on how he thought A&M scored. The estimates ranged from 940 to 980 points.

A&M had a couple of bobbles. One fish caught a thrown rifle in cradled arms near the armory floor. Another let a spinning weapon strike hardwood of the 50 by 100 yard bunting-draped competition arena. His eyes were moist as the team left the field.

J. Malon Southerland, team adviser, said that the "tremendously complex sequence" devised and taught by the team's student advisers, headed by senior Richard Gonzales, played an important part in the FDT's victory.

Southerland described the sequence as "a combination of Northeast and Southern elements," assembled so that climactic portions are accented by freezes.

"The cessation of sound makes people—including judges—stop

talking or writing and focus on the team," Southerland said. Then the fish carried off the intricate throws, movements and manuals flawlessly.

"Rick (Gonzalez) is due credit for that," the sponsor declared. "He has the best knowledge of movements, manuals and that sort of thing of anyone I've been associated with."

The San Antonio senior is the only cadet with the team including upperclass advisors, who has not marched on a national championship.

Sophs David R. Calvert of Shreveport, Larry Larsen of Dallas, Burkett and Louis Ullrich of San Antonio and Carl Olsen of Panhandle marched with the 1969 champs. Hanes and Hamilton wore the black helmet and white ascot of the 1968 national titlists. Gonzales was right guide and "triple" thrower (three mid-air spins of the nine-pound rifle) of the 1967 team that was national runnerup.

"This year is much more than adequate compensation for my freshman year," Gonzales declared.

## Environmental Group Given Official Recognition, \$630

By Billy Buchanan  
Battalion Staff Writer

The Symposium for Environmental Awareness has been recognized by the Executive Committee of Texas A&M University as a bona fide student activity and the committee has given approval to the symposium's \$630 budget.

Dr. John C. Calhoun, Executive Committee member, said that the committee gave "very enthusiastic" approval of the symposium.

The budget will cover the various activities of the symposium through April 22.

The symposium is sponsored by the Forum for Environmental Studies, the student chapter of the American Institute of Architects.

Bill Voigt and Don Coon are coordinators of the Symposium and Joe Flores is president of the FES.

The program for the symposium is divided into three phases. The first phase consists of activities before April 22, the second phase consists of the activities concerned with the symposium's program in G. Rollie White Coliseum on April 22 and phase three consists of the activities of a study program that will be carried on by the FES after April 22.

The program April 22 will be

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highlighted by an address by Dr. Donald D. Dunlop, assistant and science adviser to the Secretary of the Department of Interior. Dunlop will present an overview of environmental problems on a national scale and discuss the program and policies of the Department of Interior and other offices and agencies.

Other speakers on the program will be Charles Bardon, executive secretary of the Texas Air Quality Board; Hugh Yantis, executive secretary of the Texas Water Quality Board; Howard B. Boswell, executive director of the Texas Water Development Board; and W. J. Cutbirth, director of administrative services of the Texas Parks and Wildlife Department.

Symposium members will present programs at Allen Military Academy and to a PTA group at Bowie Elementary School April 16, Janet Wall, co-chairman of the committee for presentation of programs at local schools of the symposium, said.

About 1,500 posters depicting air and water pollution will be distributed by symposium members on campus and in the Bryan and College Station area this week.

Environmental displays by symposium members will be in the library through April 22 and in the Memorial Student Center April 19-22. These displays will depict various environmental

problems.

Several campus and civic organizations have passed resolutions in support of the symposium. Among those showing their support are the Student Senate, Civilian Student Council, Graduate Student Council, Battalion, A&M chapter of the American Fisheries Society, Texas A&M Wildlife Biology Association, A&M chapter of the Wildlife Society, student chapter of American Institute of Planners, Brazos Chapter of American Institute of Architects, and the Brazos chapter of American Institute of Planners.

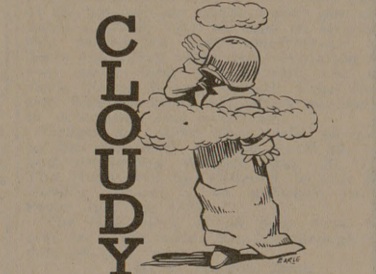
College Station mayor D. A. (Andy) Anderson has issued a proclamation declaring the week of April 19-25 as Earth Week and April 22 as Earth Day.

In his proclamation Anderson said that "environmental degradation in our nation has advanced to a point where the quality of continued human existence may be threatened."

He went on to say, "Our own community has a stake in the quality of the future to which we are committed by the very nature of our life."

Anderson ended his proclamation by saying, "I urge and encourage any and all local individuals and groups to cooperate in whatever measure they may be asked or in whatever measure

(See Environmental, page 2)



Wednesday — Cloudy, scattered afternoon thundershowers. Southerly winds 10-20 mph. High 82 degrees, low 66 degrees.

## A&M Student To Conduct Campus Polls

An A&M student has established a campus polling service.

Sophomore accounting major Julio Richer has founded the PEAR Association to conduct statistical research, polls and surveys on the A&M campus. According to Richer, the word PEAR is taken from the first letters of the phrase, "Resident After-Election Poll" and spelling them backwards.

To test his fledgling organization, he plans to conduct three polls within the next two weeks. In his first, Richer plans to concentrate on his home residence hall, Moses, working there from 7:30 p.m. to 10 p.m. Wednesday.

Next week he will conduct two polls, one will be before the general elections on April 22, and after on April 27. Richer says he still needs pollsters to help him in the election polls.

Results from all his surveys will be published in The Battalion.

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## Apollo's Primary Power Produced by 3 Fuel Cells

SPACE CENTER, Houston (AP) — The Apollo 13 spacecraft gets its primary power from three fuel cell power plants located in the service module that is attached to the cone-shaped command module.

Two of these fuel cells went out Monday night.

Each of the three fuel cell powerplants consists of 31 cells connected in series. Each cell consists of a hydrogen compartment, an oxygen compartment and two electrodes. One of these electrodes-or conductors-is for hydrogen, the other for oxygen.

Hydrogen and oxygen are supplied to the cell under regulated

pressure. Chemical reaction produces electricity, water and heat with the reaction being consumed in proportion to the electrical load.

There are byproducts, water and heat. These are used to maintain the drinking water supply and to keep the electrolyte at proper operating temperature.

There are three silver oxidizing storage batteries that are normally used to supply power to the command module during entry or after landing and they supplement the fuel cells during periods of peak power demand. The batteries are recharged as necessary.

An ultra-low temperature gas

storage system supplies the hydrogen and oxygen used in the fuel cell powerplants, as well as the oxygen used in the environmental control subsystem.

The system consists of storage tanks and associated valves, switches, lines, and other plumbing.

The hydrogen and oxygen are stored in a semi-gas, semi-liquid state; by the time they reach the fuel cells, however, they have warmed considerably and are in a gaseous state.

During high power demand or emergencies, supplemental power can be supplied from the batteries.

## State Department Official To Complete GI Seminar

The final program of the Great Issues Eastern European - U. S. Relations Seminar Thursday will feature Jean Tartter of the U. S. State Department.

Tartter will speak on "Eastern European-U. S. Relations" at 3 p.m. in the Memorial Student Center Ballroom, announced Great Issues Committee chairman Tom Fitzhugh.

Tartter's will be the last seminar of the four-part series which had earlier programs by Marjan Oslnik, Yugoslav Embassy counselor; Yuli M. Vorontsov of the Russian Embassy and Dr. Zdenek Matejka of the Czechoslovakian Embassy.

Fitzhugh said all persons—students, faculty-staff and area citizens—will be admitted free to Tartter's talk.

Tartter, 45, is currently assigned to the Office of Eastern European Affairs of the State Department and is in charge of Polish-Hungarian - Czech economic affairs.

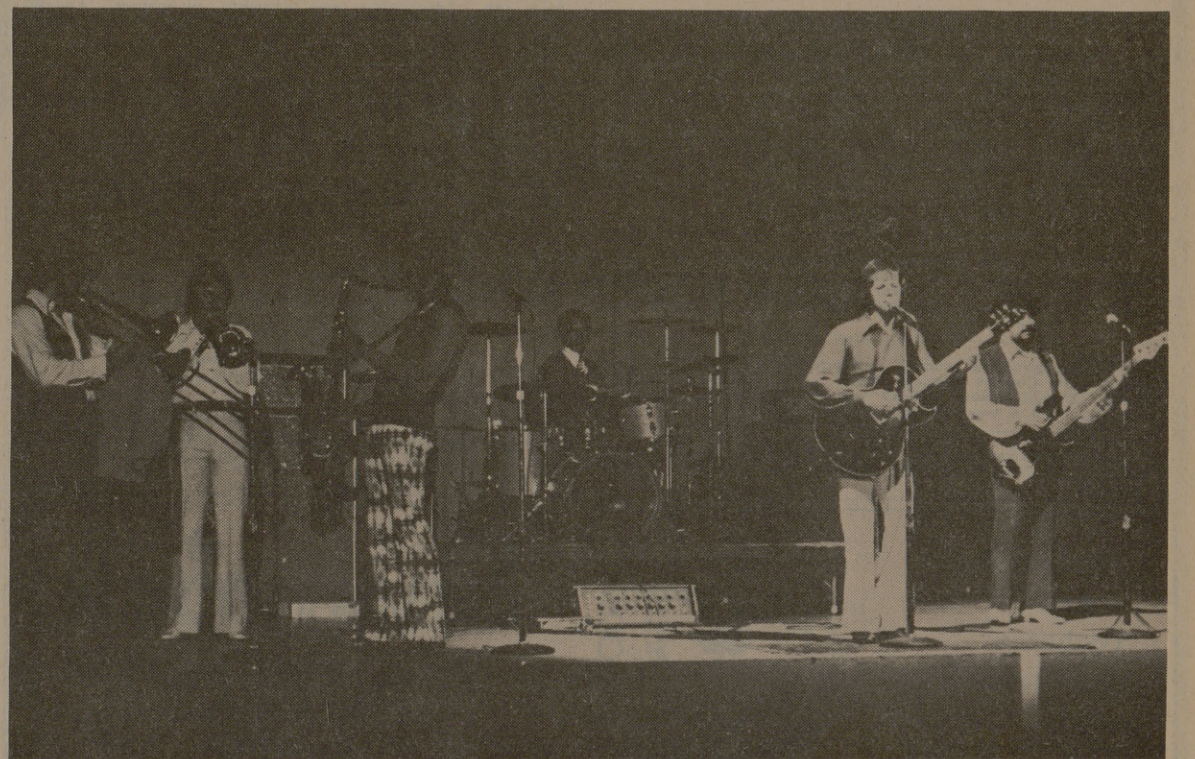
He served in the U. S. Army in Europe and the Far East in the mid-1940s and in 1948 received an undergraduate degree from Brown University.

Since joining the Department of State, Tartter has served as vice consul in Austria, Scotland and Canada. After an assignment

in Washington, D. C., he was a member of the U. S. delegation to NATO, working on the defense committee.

Tartter was in charge of Swiss-Benelux economic affairs during 1963-67. During the first year he attended the Armed Forces Staff College at Norfolk, Va. From 1964 to 1967, he was concerned with European community affairs.

During two-year assignment to the U. S. Embassy in Warsaw, Tartter visited Hungary and Czechoslovakia, returning late last year to his present position in Washington.



MONDAY SPECIAL—The Spiral Staircase plays Monday night in G. Rollie White Coliseum to a small, primarily high school-aged audience during a Town Hall Special Attraction performance. (Photo by Robert Boyd)