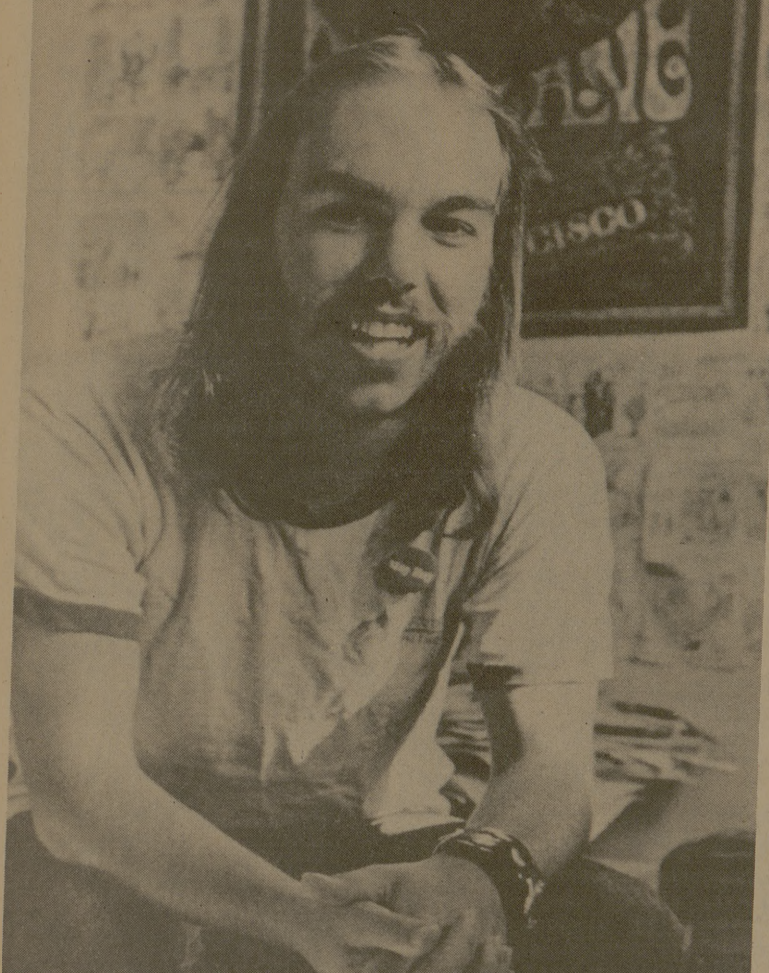


# School protection, class roll-taking may change through NASA research



SMU MANADA QUEEN this spring is Kenneth Benson Jr., 22-year-old political science major. He campaigned against the eight women contestants as a write-in candidate last week and polled about 40 per cent of the vote. He will reign over SMU's spring festival. (AP Wirephoto)

PASADENA, Calif. (NASA)—An alarm system that shows a potential for keeping small school disorders from becoming big ones, and a computer that keeps attendance records have been developed by the National Aeronautics and Space Administration's Jet Propulsion Laboratory here.

Both are a part of NASA's Office of Advanced Research and

Technology's effort to use aerospace techniques as practical solutions to public problems.

The mobile alarm has been tested at the John F. Kennedy High School in Sacramento, Calif., since the beginning of the school year. Officials say it has been a significant factor in the prevention of major disorders.

Each teacher can alert the principal's office by activating an ultrasonic device the size of a fountain pen. The device uses no batteries and can be operated from any place in the building.

The system can record any number of assistance requests simultaneously.

The alarm system has also provided quick response to accidents such as helping a student welder whose glove caught fire, another whose hand was cut by a bandsaw, and another who had an epileptic attack.

A second project undertaken by the NASA JPL team could make classroom roll call as obsolete as inkwells in the schoolrooms of America.

A small computer similar to

equipment used to monitor radio signals from outer space has been adapted by JPL engineers to relieve teachers of the tedium of taking attendance. The "Automated Attendance Accounting (AAA) System" is being tested at the same Sacramento high school. If proven feasible this semester at Kennedy High, the AAA system could usher in a new push-button era for school teachers.

Instead of making time-consuming roll calls and written reports, each teacher pushes buttons on a small keyboard that electronically records absentees in the school's accounting office.

The computer stores the information each period and does an end-of-day compilation of the school's attendance. Frank Schimandle, Kennedy principal, says some teachers and office workers will be relieved of 10 to 14 reports daily. The AAA system is expected to save each teacher up to 40 minutes per day.

The experimental system can handle up to 128 classrooms and 3,000 students. Each of Kennedy's 76 classrooms has been

equipped with an AAA transmitter. Kennedy has 1,700 students and is steadily growing.

Here's how the system works: A compact transmitter in each classroom has keys numbered from zero to nine plus buttons for signal tardy students, transmission errors, or emergency calls. Each student has a four-digit number; each teacher has a book listing students and the numbers.

The teacher presses the numbers of absent students which are recorded in a central computer. The computer provides readouts of class attendance each period. One clerk can operate the complex in several days of training.

Each teacher and room has an identifying code number, says Principal Schimandle, believing that the system will also enable a closer check to be kept on absents and mid-day dropouts.

The AAA system was adapted from a basic small computer used in Mariner missions. JPL engineers supplied the complex software to record the design school data.

## LIBRARY

(Continued from page 1) history of Irish livestock," Dykes recalled. "After 25 years trying, he was still short by Volume 2."

Later invited to visit a shop dealing in Gaelic items as a must stop for his visit, Dykes spotted the total set and found it for sale.

In the same place he found a volume of "On the Ancient and Modern Races of Oxen in Ireland" by Dr. Sir William Wilde, father of the famous playwright Oscar Wilde. It was published in the proceedings of the Royal Irish Academy in 1858.

"I was afraid it would really be expensive, but asked the young lady at the counter—in my best Irish brogue—what the price might be."

Dykes obtained the Wilde work for three pounds (\$7.20).

## Duncan chef retires

James C. (Popcorn) Stewart hung up his apron for the last time Friday after 40 years service in Texas A&M dining halls.

Stewart, 68, was chef at Duncan Dining Hall.

Duncan manager Henry Wellnitz said Stewart "is the best cook in the state."

Popcorn, as Stewart was tagged by a student several years ago, began A&M food service work in June, 1924. He quit once, to try his hand at farming the Brazos County community of Smetana.

Food Service Director Fred W. Dollar, other university officials and Stewart's co-workers paid him tribute Friday and wished

the meats specialist a successful retirement.

During his tenure in Texas A&M dining halls, Stewart worked under Sbsa and Duncan—for whom the halls are named—Hotard, Penniston, Nugent and Dollar. He has been requested on numerous occasions to barbecue for groups meeting at Henry Clay's "Friendly Acres."

Stewart and his wife Daisy have seven children, now living in Alaska, Topeka, Kan.; Kansas City, Houston, and St. Louis. Sammy Charles plays outfield for the Arkansas Travelers baseball team.

# Coconuts may offset protein deficiency problem

Texas A&M researchers are developing a process to economically extract food proteins from fresh and dried coconut.

Funded by the U. S. Agency for International Development (AID) through the Texas A&M Research Foundation, the study is expected to help solve protein deficiencies for people in Asia

and Africa.

Heading the project is Dr. Karl F. Mattil, director of the Food Protein Research and Development Center at A&M, and Dr. Carl M. Cater, head of the center's Oilseed Products Division.

Responsibility for the study lies with Perry H. Quintio, on leave from the Franklin Baker

Co. of the Philippines, and Dr. R. D. Hagenmaier, assistant research chemist at the Oilseed Products Center.

Quintio, research and quality control manager for Baker's two Philippine plants, reports that technology is available to extract the protein but the processes currently are not economical. The

two plants process 700 tons of coconuts each day, he said.

He expects a pilot plant installed in the Oilseed Production Center here to provide the answer to the economic problems.

Process operations are expected to begin shortly, he said.

If the process is feasible, Quintio reports, an identical plant will be built in the Philippines. The extracted protein will be used as a food supplement in the Philippines.

Most of the Philippine coconut production is exported as copra or coconut oil. It is obtained by crushing the coconut meat and using an antiquated drying process, open air drying in most cases, or drying ovens.

Quintio has worked for the Franklin Baker Co., a subsidiary of General Foods, for the past 10 years. The chemical engineering and food technology graduate came to Texas A&M in January as senior scientist on the 18-month study.

When a protein process is de-

veloped, Quintio says the whole coconut will be used, except for the water.

He estimated the average coconut has 27 per cent of its weight in the husk, 30 per cent water and 43 per cent coconut meat. The husks are used for fuel by the farmers.

Approximately 70 per cent of the dry coconut is coconut oil. The copra, once oil has been extracted, still has a high protein content but it is usually used as livestock feed in most countries.

Quintio hopes his process will benefit people unable to afford high-protein foods.

He explained the coconut food protein would be sold as a food supplement to food producers and the Philippine public. An example is protein supplement in baby food.

Dr. Carl M. Cater, head of the Oilseed Products Division, Food Protein Research & Development Center at A&M, said he is optimistic an economical process will be developed.

## April boosts B-CS rainfall total to 6 inches

Six-month rainfall totals in the College Station and Bryan area crept to around the six-inch mark during April.

Early May changed the situation and, according to the long range National Weather Service outlook, the trend will continue during the next 30 days.

The outlook calls for near normal temperatures and moderate precipitation of about four inches between mid-May and mid-June. The period should be predomi-

nately humid and cloudy, with above-normal morning temperatures and below-normal afternoon highs.

The area drained by Burton, Wolf Pen and Bee Creeks received 1.05 inches last month, the average of 34 observers in a Texas A&M rainfall runoff study.

The top measurement within the watershed was 1.10 inches in the 300 block of Brookside and 1000 block of Wind Road. A 2.01 gauging was made at Steep Hol-

low, 1.26 at Harvey, 1.23 at Kurlen and 1.18 at Easterwood.

An April low of .83 inch was recorded at Bizzell Hall on the A&M campus, in the 1000 block of Edgewood and 1100 block of South Winters.

May 9-11 thunderstorms including varied size hail produced between three and four and one-half inches of rain here.

April temperatures averaged 68 degrees, slightly above normal. The range was from 37 on April 7 to 88 on April 26 and 27.

# Remote weapons system designed by aero senior

A weapons system designed to move the foot soldier away from the direct path of flying lead but keep him in battle contact has been proposed by a Texas A&M engineering student.

Dudley C. Wilson's idea is a remote-controlled hovercraft mounting a variety of automatic weapons.

He calls it RAMPARTS, for remote amphibious air raft for tactical support.

The senior aerospace engineering major of Tulsa, Okla., said current technology can remove the soldier from the heat of battle and place him in a protected but not necessarily isolated location.

Wilson believes his remote weapons platform will increase the soldier's confidence and willingness to fight.

"War is waged for control of people and land," he added. "If it must be fought, it must contain the human element, otherwise a battle would be a meaningless, expensive junk heap."

Wilson noted that military applications of hovercraft is not

new. The Army's 8½-ton operational SK-B hovercraft gunship carries a crew and gunners for four machine guns and a 7.62mm minigun.

He researched and designed a lighter, more maneuverable and controllable vehicle. Its crew would be replaced by remote equipment, the majority of which would be located in the control position.

Transistorized cameras for battle situation display, sensors, actuators and communications gear would be carried on the 18-foot-long craft. Designed around a 350 horsepower air-cooled piston engine, it would be 12 feet wide and have a 6½ foot silhouette.

Wilson envisioned a two-turret weapons system in which a variety of machine guns, small cannon or grenade launchers would be interchangeable.

He used only a moderate amount of armor in his hovercraft design, employing thrust fan housings, ammo boxes, engine and self-sealing fuel tank to protect remote equipment and lift fans.

RAMPARTS has a four-hour, 40 knot operating capability under Wilson's design parameters and could reach areas inaccessible to land or water vehicles.

"The hovercraft is as effective over water as land," the Squadron 11 cadet commented. "Snow, desert, marsh, ice flows and rice paddies could be negotiated. With its 40 knot speed, RAMPARTS could quickly overtake surface ships or land vehicles."

In day or night river patrols, the craft might precede a command gunboat to detect or engage enemy forces, he added. The same procedure could be used with an armed helicopter, which would be most visible and eluded by hostile forces, giving RAMPARTS a surprise element.

Dr. Charles A. Rodenberger, aero engineering professor for whom Wilson wrote a report on the design project, called it "a very innovative concept."

In it, Wilson applied his engineering ability outside his own immediate field of interest. An Air Force ROTC cadet, he will be commissioned in the Air Force upon graduation.

# The Battalion

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