

Plastic and fiberglass tested for use as runway surface

The Air Force Special Weapons Lab at Kirtland AFB, New Mexico, has granted \$11,200 to A&M for extension of the work of a civil engineering research team in the area of soil stabilization.

The fatigue characteristics of a fiberglass reinforced polyester

material for surfacing expedient runways are being evaluated in the Materials Laboratory under the direction of Dr. W. A. Dunlap, Prof. Bob M. Galloway, and Dr. Jon A. Epps.

While the polyester material is the principal interest of the in-

vestigation, polyurethane foam for use beneath the polyester runway is also under construction, Dunlap said.

The work is an addition to a project for the same sponsors, funded in the amount of \$54,000, in which an index system for soil stabilization is being established.

"An engineer without specialized soil stabilization knowledge will be able to obtain several alternate schemes to solve his particular stabilization problem by using simple soil test data which will be available to him," Dunlap explained.

The tables would help the engineer in the field make decisions as to the kinds and amounts of stabilizers, if any, which should be added to the soil, and in what manner, for best results in a proposed runway, Dunlap continued. Climatological and construction factors are taken into consideration, and separate tables are provided for expedient and permanent installations.



SHE'S FOR REAL. Ann Sanford, 22-year-old beauty of Lakeland, Fla. soon will become the first coed to graduate from the University of Florida's Department of Building Construction. Ann, a blue-eyed blonde, is also the only woman even to be initiated into Sigma Lambda Chi, the field's national honorary scholastic fraternity. (AP Wire-photo)

Photo processes help electronics

Students at A&M's Institute of Electronic Science are finding they can be creative while learning modern electronic methods.

The Engineering Extension Service school trains technicians through its 18-month school at the Research Annex.

Instructor Onis J. Cogburn says the photo-lithography process for circuit boards was begun this semester to give the students a better understanding of current industry practices.

"It also has given each student pride in doing his own work from design through circuit board construction," Cogburn noted.

He expects 34 second and third semester students to complete the photographic course within the next two months.

Students begin with the circuit diagram and produce a crude layout from three to five times larger than actual requirements.

The crude layout is then precision drafted in blow-up size, similar to actual commercial production. Each student is responsible for all layouts and design techniques.

A hand-made copy stand and 4 by 5 inch press camera are used to make the reduction negative. The negatives are contact printed on copper circuit boards treated with Kodak Photo Resist Type 3.

The copper boards are presently developed in chemicals, but a vapor degreaser process is on order and will be used in the future.

Developed boards are treated with a dye before being etched by the standard copper etching process.

Cogburn pointed out most of the used photographic equipment will be replaced and other equipment, including an enlarger, will be added.

The photographic process makes circuit board size only limited by the size of the negative, Cogburn said.

Students at the electronics school have studied printed circuits for over six years and prior to the photographic process worked in groups on silk-screen processes.

CASH FOR USED BOOKS
WE BUY, SELL OR TRADE
Come Down Our Way, Trade Your Way
LOUPOTS

EXAMINATION AND CHRISTMAS BONUS
To show our appreciation for our student customers, we will give you one of our Super Burgers in a Thermo container and a Coca-Cola for a total of \$0.40 plus tax during the examination period, December 16 through December 21. This offer good at the MSC Snack Bar only. Good luck on the examinations!
"Quality First"

SHURFINE SUGAR
5 LB. BAG **49¢**

LIMIT 1 WITH PURCHASE OF \$5.00 OR MORE. EXCLUDING BEER AND CIGARETTES.

A. F. MELLORINE
ASSORTED FLAVORS
½ GALLON **37¢**

IF YOU HAVEN'T PICKED UP YOUR **"UNBEATABLE BONUS" CARD...**

HURRY-HURRY!
THE FASTER YOU COLLECT THOSE 24 'SILVER COINS' ...
THE FASTER YOU COLLECT YOUR **500 EXTRA S&H GREEN STAMPS!**

THEN... GO ON TO COLLECT **1,000-1,500 EVEN MORE**

There's no limit! Start today!

Remember! In addition to your 'Unbeatable Bonus'—bonus... you always get 3-way... every-day bonus values at ORR'S with: Unbeatable quality! Unbeatable prices! Plus—unbeatable S&H Green Stamps with every purchase!

COURT'S SADDLERY...

FOR WESTERN WEAR OR FOR YOUR MARE.

FOR SHOE REPAIR BRING IN A PAIR.

403 N. Main
822-0161

1970 TOYOTA
\$1830.00

BRAZOS VALLEY TOYOTA INC.

We Service All Foreign Make Cars

Cavitt at Coulter
Phone 822-2828

Wolf — Plain CHILI 15-Oz. Can 49¢	Breast 'O Chicken TUNA Chunk Light No. ½ Can 37¢
Budweiser BEER 6 Cans 99¢	Shurfine, Cream or Whole Kernel CORN 5 303 Cans \$1
QUANTITY RIGHTS RESERVED.	
WE REDEEM FOOD COUPONS	
Prices Good Thru Sunday Dec. 12.	
ORR'S RIDGECREST STORE OPEN SUNDAY 9 TO 6	
OLEO Corn Oil Lb. 29¢	Hunt's Fruit COCKTAIL 4 300 Cans 89¢
Get Set HAIR SPRAY 44¢	Shurfine, White CORN MEAL 5 Lbs. 39¢
Morton's, Frozen Assorted Meat DINNERS 11-Oz. 38¢	Shurfine, 3 SV. Cut Green BEANS 5 303 Cans \$1
Family Pack PORK CHOPS Lb. 49¢	Shurfine, Fresh BLACKEYES 300 Can 15¢
A. F. Sliced BACON 1-Lb. Pkg. 59¢	Shurfresh OLEO Lb. 29¢
U.S.D.A. Grade 'A' FRYERS Whole Lb. 27¢	Get Set HAIR SPRAY 44¢
U.S.D.A. Grade 'A' FRYERS Cut Up Lb. 35¢	Morton's, Frozen Assorted Meat DINNERS 11-Oz. 38¢

PEPSI COLA

3 6 10-OZ. BOTTLE CTNS. \$1

Limit 3 With \$5.00 or More Purchase. Excluding Cigarettes and Beer.

ORANGES	20 Lb. Bag	99¢
POTATOES U. S. No. 1 Russet	10 Lbs.	69¢
AVOCADOS	Each	19¢
ONIONS Yellow	lb	5¢

CAMPUS
NOW SHOWING "TRADER HORNEE" (Rated XX)

PALACE
STARTS TODAY
Walt Disney **son of FLUBBER**

QUEEN
LAST NITE—ADULT ART 7:15 - 9:15 P. M.
"DANISH & BLUE" (Rated XXX)

Skyway Twin
DRIVE-IN
WEST SCREEN AT 6:15 P. M.
"BLOOD THIRSTY BUTCHERS"
At 8:05 p. m.
"TORTURED DUNGEON"
EAST SCREEN AT 6:30 P. M.
"UP YOUR TEDDY BEAR"
At 8:25 p. m.
"2 IN A SLEEPING BAG"

CIRCLE
DRIVE-IN
TONITE AT 6:15 P. M.
"MOSQUITO SQUADRON"
At 8:20 p. m.
"McLINTOCK"

-Best in Bryan-
ORR'S
Super Markets

2 CONVENIENT LOCATIONS
200 E. 24th St. Downtown
3516 Texas Avenue Ridgcrest