

busy senior at Bishop Kelly High School.

The daughter of D. J. Zigang, Systems Engineering, Mary Kay has taken a college preparatory course at Bishop Kelly in preparation for her plans to be an applied mathematician. She has taken all the mathematics and science

Drama Club and was the principal author of one of the plays produced this season. She also plays the 12-string guitar and has written songs for Folk Masses at Christ the King Church. In her spare time, she is a member of the Chess Club, Student Council, and Pep Club.

Mary Kay moved to Tulsa from South Bend, Ind., in June 1966, and her activities at Bishop Kelly have won her praise from Brother Bernadine, F.S.C., director of the school. "Mary Kay has good insight into problems," Bro. Bernadine said, "she can grasp concepts easily. She is one of the better girl scientists that we have ever had at Bishop Kelly. She does all things well—she is not specialized."

Gary is a sophomore at TU majoring in Chemical Engineering and is one of five engineering students to make the honor roll. His grade point average is a perfect 4.0. Gary graduated from Will Rogers High School.

Son of Employee on TU Honor Roll

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Future Reentry Problems Within Apollo's Scope

The ability of Apollo-derived technology to satisfy future system requirements was discussed by G. M. Hanley at an Interdivisional Seminar at the Tulsa Division Apr. 25.

Hanley, project manager, Man- ned Systems/Advanced Systems, Space Division, outlined the program for advanced manned earth-orbital and planetary reentry systems, including results of studies of spacecraft aerodynamic braking at Mars and Venus, Mars landing systems, and planetary return to Earth entry systems.

Although reentry into the Earth's

atmosphere from planetary flight occurs at velocities 50 percent greater than for the lunar mission, it was shown that the Apollo command module concept and technology can provide an adequate reentry capability. A system development program for simulating Mars and Venus reentry and landing conditions in the Earth's atmosphere prior to the actual mission was also discussed.

Hanley received his BS and MS degrees in Aeronautical Engineering from the University of Minnesota.

Norton . . .

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in departments of Quality Control since 1953. He was senior supervisor in charge of all second shift Quality Control activities at the Boeing Plant 77, Ogden, Utah.

Norton was associated with the Minuteman missile assembly and checkout from 1961-63. He was also Superintendent of Quality Control Preflight Operations at Renton Field, Renton, Wash.

A second feature, "Apollo: the Strength of a Nation," reports on technological progress forged by companies across the nation who are involved with the Apollo program, and how this newly-gained technology can be applied to other projects.

A story on the company's undersea workboat, developed by Ocean Systems Operations, is also highlighted. It is called "Newcomer in the Wet World."

Pioneering work of the Aerospace & Systems Group in the development of beryllium for aerospace uses is another feature article.

Additionally, "A Million Times Better," tells of Atomics International's new solid-state battery, and "Breakfast at Zero G," describes the food that astronauts eat in space.



PHOTOGS — The photographs that will appear in the *Skywriter* are the work of these three Tulsa Division photographers. Discussing a photo assignment are, left to right, Ace Mulliner, Mike Gordon and Frank Johnson. Photo is by Stan Szlichta, TD laboratory technician.