

## **Gerald (Skip) Fehr Biography**

Skip graduated from Iowa State University (Ames, Iowa) in February 1966 with a Ph.D. in Ceramic Engineering and a minor in Industrial Engineering. He then joined Texas Instruments in the Hermetic Seals Department. The first task was to make a reliable hermetic package with the exact dimensions as the non-hermetic IBM SLT package. The seal path was only 20 mils wide, which is considered sufficient today, but not in 1966. Management experience at TI consisted of managing the Hermetic Seals Development group and the Beam lead Assembly operations.

In October 1968 Skip joined a start-up company called Intel as employee # 32 where he was hired to manage the Packaging, Assembly and Final Test Operations. His interviews consisted of a phone call with Dr. Andy Grove and later a weekend trip to the west coast where he interviewed with Dr. Grove, Dr. Moore and Dr. Noyce. The offer letter typed personally by Dr. Noyce (strikeovers and all) is still a prize possession. Memorable events included the development of the 18-lead package for the Intel 1103 memory device. Intel started as a Memory House and not with Microprocessors. A second event was the building and start up of the Penang, Malaysia Assembly Plant. On the first day of his arrival at the plant site a water Buffalo walked through the partially constructed building. Within 6 months, production volumes of Sidebrazed, CERDIP and Plastic packages were being shipped from Penang. Other Assembly operations were established in Mexico, Hong Kong and the Philippines. The IC assembly world was fairly small in those early days giving Skip an opportunity to regularly meet the same people either on the airplane or in the hotels during the plant visits.

His career also included stints at Fairchild and Burroughs Corporation, managing assembly operations. During his 3 years at Ranch Bernardo, California, Skip attained his private pilots license, which expanded the range of weekend trips to 500-mile range.

In 1981 Skip joined another start up (LSI Logic as Director of Packaging and Assembly) as employee #10. Here new challenges were presented, as LSI Logic required multiple styles of packages with constantly increasing lead count. In 1982, a potential customer visited the assembly operations and watched the wire bonding of 180 lead PGA (pin-grid array) package for several hours. The customer was so impressed with the production yields that he signed a purchase contract that afternoon.

During 1991 to 1993 Skip consulted for several companies. Consulting was quite satisfying to Skip, allowing him to set his own schedule while assisting 3 clients, leaving ample time for improving his golf game. During this time plans were put together and venture capital arrangements were made to launch IPAC, an IC assembly sub-contractor.

In 1993 Skip cofounder of IPAC. The work included helping to take the company public (NASDAQ) and later selling majority ownership to OSE. At the time of his retirement, Skip was Executive VP and Chief Technical Officer. During those years Skip also held several positions including VP Operations.

### **Key People in the Packaging and Assembly Industry in 1966-1970:**

Skip enjoyed association with prominent people in the industry during that era including:

- Pete Johnson - TI
- Tony Bianculli - RCA
- Werner Engelmeir - Bell Labs
- Billy Hargis - 3M
- Milton Kiver - EP&P
- Dick Spurr - Coors
- Vince Spadafora - K&S
- Frank (Pancho) Padillo - Motorola
- David Nixen - Rockwell

Most of these people attended JEDEC meetings at that time, as the semiconductor industry was still evolving. Normal meetings normally had 6-8 people in a small conference room at the EIA Headquarters in Washington DC.

### **Memorable events over the years:**

- Professional Achievement Citation in Engineering for 2001. Award from Iowa State University
- First day at TI Skip was introduced to the IC Department management with an urgent mission to solve the IBM package hermeticity issue. A few months later after a lot of work, Skip engineered the breakthrough that solved the problem, receiving an accommodation from both TI and IBM.
- Interviewing with the founders of Intel (Dr. Grove, Dr. Moore and Dr. Noyce) was a notable and exciting time for Skip. Intel's philosophy at that time was to hire young managers and let them grow as the job grew. No one realized how fast Intel was going to grow.
- Establishing the Intel Penang Assembly plant allowed Skip to bring his family to Malaysia. By the time Skip went to Penang the physical building was to have been finished. Imagine his feelings when upon his arrival there was a water buffalo walking through what was supposed to be a finished building. The schedule required building products in 3 months and volume production in 6 months. This meant getting walls on the building, getting the equipment through customs, hiring the people, training, getting the equipment established and functional. Little problems constantly presented themselves for Skip to solve. When the Air conditioning unit showed up, the electrical motors were too large to be allowed in Penang. The government changed the state law to permit Intel to start using them. It was an opportunity for Skip to not only work technical issues, but also deal with governmental issues.
- Start up of IPAC and working with the Venture Capitalist.
- Overall Skip's career has been very positive. The hardest times for Skip were planning and executing a few lay-offs that were required from time to time as the industry had a cycle of good times and bad.

### **Advice to new graduates:**

- When graduating, pick the industry in which you want to work and find your job. The longer you stay in an industry that you don't like, the more difficult it will be to change.
- Plan your career. What do you want to be doing in 20 years? What type of work? Do you want to be on the technical side? You then need to pick those experiences you will need to get you there. Do your best to insure that you gain experience in a timely matter.
- Don't be afraid to ask for the changes you need to reach your goals. This requires being reasonable and flexible. Re-evaluate your goals every few years to insure those are the goals you really want.

**Plans for Retirement:**

Skip wants to stay connected to the semiconductor industry. He hopes to accomplish this by doing part time consulting. Skip also enjoys volunteer work. He is presently the president of the board of directors of a local water company.

Hobbies include golf where he hopes once again to improve his game.

**Family:**

Skip has been married to the same lady for over 45 years. She just about has him trained. While she tolerates a weekly golf outing with me, she really enjoys the chatting with the friends who play with us. Skip and his wife, Teresa have been blessed with two sons who have given them four grandchildren (two boys and two girls ranging in age from 2 months to 16 years).