

THOMAS BYRON KNOST

Professionally

- Thomas Byron Knost (TBK) is a retired Mechanical Engineer.
 - He spent 33 years (1964 to 1997) of his professional life in the employ of GE AVIATION, a business focused on Design and Manufacture of Jet Engines.
- During this time he was engaged in the following activities:
 - Mechanical Design of Combustors
 - Creation of Analysis Tools used in the Design of Jet Engine Components
 - Management of GE's Collaborative Engineering Doctoral Program with the University of Cincinnati
 - HR responsibilities in hiring Technical & Management personnel for GE Aviation
 - Creation of an Organization focused on the Management of the Lives of Rotating Parts in Jet Engines
 - Management of activities focused on the Certification of the CFM56 Jet Engine by the FAA
 - Design & Manufacture of the High Pressure Turbine Rotor for the CFM56-5 engine powering the A320/A340
 - Responsibility for specific Jet Engine Design Practices for GE Aviation
 - Supervision/Introduction of new materials & technologies into Engine Design & Manufacturing Processes

Educationally

- Over his 33-year career in Aviation he participated in both
 - Teaching and management of: The GE ADVANCED COURSE IN ENGINEERING (ACE)
 - This course was created for Thomas Edison, at the foot of Charles Proteus Steinmetz, in 1923
 - It continues to this day, as it approaches its centennial mark
 - This course was generated to fill a vacuum in engineering education relative too:
 - Understanding of Engineering Science & Applied Math Methods in Engineering
 - Appreciation of the need to be able to quantify real solutions to difficult engineering problems in a timely manner
 - Effectively employ teamwork in the solution of technical problems
 - Effectively be able to communicate solutions to technical problems to management
 - Effectively be able to manage & evaluate others in their solution of technical problems
 - During 1967-95, TBK has been an Adjunct Professor for the Aerospace Dept at the University of Cincinnati
 - Basic under grad Engineering Science courses
 - Graduate courses in Advanced Mechanics Topics
 - Books & Symposia on the Design & Manufacture of Jet Engines for
 - NASA,
 - Technical Orientation for new employees,

- Adult Ed for GE customers, e.g. Military personnel,
- HS students and others interested in Jet Engines
- Since retirement, he has been working on three technical textbooks:
 - Applications of Calculus of Variations in Engineering Science
 - Applications of Tensor Analysis in Engineering Science
 - A Treatise on the Theory of Thin Shells

Personal Motivation to Form TBKSF

Beginnings

- Born in Cleveland, Ohio in the Western Reserve, 1940
- My Father was a deaf man, who worked in & around furnaces
 - Had small furnace installation business with his brother
 - As a husband & father supporting his family, he worked in the Pressurized Casting business, maintaining furnaces for die casting
 - Born in Zanesville, Ohio, his father was a pharmacist
- Mother, housewife, managing a home of 3 children & a deaf husband
 - Born in Eastern Pennsylvania: Jeanette, Pa
 - Immigrant family, working as coal miners
 - Her family migrated to Cleveland to find work on the Railroad
 - Before marriage she worked as a maid for wealthy families
- My parents married in 1940, he was 35, she was 25 years old

My Personal Zeitgeist

- I inherited from my parents
 - My spiritual & philosophical nature (from my father)
 - My work ethic & no nonsense common sense (from my mother)
- Under their caring love, I was permitted the opportunity & freedom to create my life and become who I was destined to be
- From very early(say 5 years old), I knew what my job was
 - Go to school, study hard, learn as much as I could
 - Go to college to learn more, and make something of myself
- My educational goals were developed/engendered at the foot of my mother's brother, Donald
 - The only family member attending some college, he was an accountant for Standard Oil of Ohio
 - WWII vet, serving in the Philippines during its occupation by the Japanese

My Education Path

- Attended Euclid Park Elementary School(K-6)
 - My 5th grade science teacher, Mrs. Whitesell, once told her science class: "That one day, she expected to see Kenneth Klivington & Tom Knost names in the newspapers having accomplished something in science."
- Attended Collinwood HS (7-12)
 - CHS was a Vocational HS, with courses of study over a wide range of disciplines:

- Academic as well as, Secretarial, Home Eco, Technical Vocations (auto mech, electricity, wood working: pattern making-cabinet making-carpentry; printing, foundry, sheet metal work, drafting & others) to be selected as courses of study after 9th grade
- I wanted the college prep route, my mother wanted me to get vocational training since she knew they could not support a college education for me.
- I completed both routes, I trained to be a draftsman, and I took the academic prep work
- Some of my CHS accomplishments included:
 - In the 9th grade, winning the competition for top Social Studies Student
 - NHS in the 11th grade
 - Became the 3rd overall student in a graduating class of 270 (very large for that time)
 - My personal goals had been, from very early days, to study: Math, Astronomy or Nuclear Physics
 - While personally prepared for the rigors of College, nothing had been done to prepare for its actuality; I was headed to a job as a draftsman.
 - After HS graduation, our HS guidance counselor, Mr Neumann, who I knew, but never had met, called me to say he knew of my situation and wanted to ask if I'd be interested in taking a scholarship given by a local firm, Harris-Seybold Inc (a major firm engaged in design & manufacturing of high speed sheet fed offset lithographic printing presses). I said yes!
- The Harris- Seybold Scholarship Test:
 - Basically a math test. I had much fun taking it. I hoped that I had done well?
 - It turns out that I came in 3rd again; however the first two people had better scholarship offers from Case Institute of Technology & MIT.
 - So on one bright summer day, I received a call from Mr. Neumann, to ask me if I would be interested in receiving this 5 year Mechanical Engineering Scholarship at the University of Cincinnati? Needless to say, I said YES !!!!!!!
 - This Scholarship was a full ride: Tuition, Board, Books; plus since this was a CO-OP school, it included a co-op job at Harris-Seybold
- It is this opportunity that my TBKSF is modeled after.
 - While I can not offer co-op jobs, I believe I can arrange for consideration of that through the GE Corporation
- After receiving my BSME in 1963 at UC, wanted to do Grad School.
- Therefore I stayed at UC, received a MSME in 1964
- By 1970, while working at GE, I had completed my academic PhD work, and had completed work on my thesis, a GE work assignment.
- Job & family demands, plus some immaturity, led to me not receiving a PhD
- Today I am writing my PhD Thesis

CONCLUSION

- My life provides an outline for my 501c3
- Ultimately my 501c3, TBKSF, will have adequate funding for an active participation in support of Engineering careers

- My net worth is currently over a million dollars which will be donated at my death
- I am desirous of get things going now while I am alive so that my interests will be achieved before I have departed
- While I will probably be the main financial supporter, we will endeavor to engage others in support of my vision
- Until TBKSF can amass funds at the \$200K level, it will be limited to funding support of educational activities managed by others; such as secondary schools and charitable foundations run by Universities
- Once we attain fully functioning status, we hope to able to actively support K-12 projects