



EA

Executive Achievement

By MarEx Staff

**Chairman of the Board,
Thordon Bearings**

George "Sandy"

Thomson

“Sometimes things just work out right.”

I wanted to be an aerospace engineer,” George “Sandy” Thomson said, remembering his college days during the 1960s at Northrop University in Inglewood, California. “My mentor was a senior engineer who was absolutely brilliant, and we played in a band together. I really thought I had found my place in life because I didn’t want to be involved in the family business. However, the dean of the school talked me into going from aerospace to mechanical engineering because he said there would be many more opportunities, so that’s what I did. In fact, I did my final mechanical project design on seals for pumps.”

PLANTING THE SEEDS

The family business Sandy Thomson referred to was founded 100 years ago this year by his grandfather, Army Major George J. Thomson, and his brother William, who opened an industrial distribution business in Hamilton, Canada. Later the brothers took on a partner named Earl Gordon and changed the name of the firm when it incorporated in 1916 to Thomson-Gordon Ltd. By 1936, the company was involved

in manufacturing a variety of applications for industrial engineers, and it flourished.

The son of the founder, Sandy's father, graduated from Pratt Institute in New York with an architectural degree, but he had completed his studies during the Great Depression and could only find work as a commercial photographer. He soon answered his father's summons to help run the business in Canada, which he did for the next 30 years. The evolution continued in 1967, when Sandy took the reins of the company from his father, George J.V. Thomson.

During its early days, the company was very successful at repackaging mechanical and engineering supplies. The firm had a broad selection of product offerings and expanded often, but in a little corner of the plant Sandy was working on his non-metallic bearings concept. In fact, Sandy and production foreman Arnold Lange were coming up with a number of ingenious uses for newly discovered polymers and soon began solving bearings problems with an entirely new type of sealing system.

In 1990 Thomson incorporated Thordon Bearings and also bought a Russian deep sea salvage steam tug, Rudokop, and converted it into a floating showcase for the company's marine bearings and seals. Over a 14-year period, the tug visited more than 200 international ports. It was crewed by six Eastern Europeans and captained by Thomson himself. Although the vessel was finally sold in 2007 to Norwegian interests, it was used with great success to introduce shipowners to Thomson's radically new approach to sealing bearings.

DRIVING THE DREAM

Sandy Thomson's work with seals for pumps and bearings took place while he attended college. "My grandfather didn't do very much with seals in his day, although he did do some seal manufacturing. Most of his business was selling supplies to industrial and marine engineers. I used to travel with him when I was a boy, and we'd visit huge boiler rooms and I was fascinated by their complexities."

Sandy's dad also looked at synthetic polymers but felt the science was too complex for him. He actually thought it was too complicated for Sandy as well, but the young Thomson envisioned three products that could be made from polymers. One was a flexible machinery mount. Another was a flexible coupling for a shaft, and the third was a rubber bearing for pumps. "So I came up with the idea of using an elastomer blend to work as a pump bearing and our first customer was a Canadian steel company," Thomson explained. "Our elastomer bearings worked much better than the rubber bearing in vertical scale pit pumps, which were pumping scale water out of the pits. Then it hit me: Why not use my new bearings on propeller shafts for ships? While the company didn't enter into the maritime markets for a few more years, I knew we had a winner."

At the time the company did not have a testing facility for the new polymer bearings. So a few years before entering the maritime market, Thomson worked with a couple of senior engineers



at a local steel plant to test the new product: "These engineers bought our polymer bearings and put them into places even I thought they didn't have a chance to work, and they didn't, but the cost was covered in the plant's maintenance budgets. We did a lot of testing and I give those engineers a lot of credit for helping us in our early days."

When Thordon Bearings entered the maritime market, its biggest client and supporter was the Canadian Coast Guard. While a couple of tugboats used the propeller shaft bearing, the company knew they really had to be proven on the next level of ships. "The Coast Guard came along and gave us a chance," reminisces Thomson. "I don't want to say it was easy, because it wasn't. I am a captain and an engineer and I know that reliability and dependability are important when sailing in the blackness of night in the ocean with a storm going on. You don't want something to quit working. Engineers are a conservative group, and it takes a long time and a significant track record to get them moving in another direction."

LONG LIFE AND ZERO POLLUTION

In the days when Thordon first began business, 95 percent of the ships in the world had propeller shaft bearings of white metal with stern tubes of oil for lubrication. At the time the systems were state-of-the-art and no one worried much about a seal leaking. In fact, marine vessels had very little environmental compliance issues to deal with. When Thordon decided to eliminate oil and replace propeller shaft lubrication with seawater, many thought the concept was going backwards. Thomson reminds us that shaft bearings were made of wood until the 1950s. More importantly, wooden bearings would only last for about five years. So companies began manufacturing white metal bearings and using oil as a lubricant to extend the life of the bearings.

While attitudes change slowly, today's environmental push has never been more comprehensive, and losing a few liters of oil a day from a leaking seal is no longer acceptable. Thomson points out that in 1998 Thordon installed a seawater lubricated propeller shaft bearing on Carnival Cruise Lines' Grand Princess. At the time the 109,000-ton ship was the largest cruise vessel in the world. Risk studies performed by the technical team of Princess Cruises-P&O in conjunction with the shipbuilder, Fincantieri, showed that very few drydocks could take a ship that size, and

any unscheduled repair to a stern tube leaking oil could result in big-time expenses. In April 2011 the Grand Princess was dry-docked at Grand Bahama Shipyard for extensive upgrades and modifications. The Thordon COMPAC strut and stern tube bearings were checked and found to be in exceptional shape – after 13 years of continual use.

Thomson says the bearings on the Grand Princess could be in great shape for 20 years, which is unheard of. “When we started guaranteeing 15 years of life for our seawater propeller shaft bearings, people thought we were nuts,” he said. “We’re not in the spare parts business, so we manufacture our bearings to last the life of the ship.” He further explained that the seals containing the oil for the metal bearings have got to leak because oil must pass through the lips in order for it to lubricate.

Governmental organizations have been increasingly strict about vessel operators reporting oil usage and require that accurate records be kept. Some companies are conscientious about these records and some are not. We’ve all heard about operators who fudge the records on oily water separators and use bypass tubes and have subsequently been fined millions of dollars for these environmental violations. When the stern tube seal on a propeller shaft begins to leak an engineer can simply turn it off while in port. When the ship returns to sea he can reopen the mouth for lubrication. Thomson’s reply is if a ship has a bearing that can last 15 to 20 years and doesn’t need oil, you’ve got a cost-effective, lifecycle advantage over an oil system.

Today the company has outfitted about over 2000 vessels with its oil-free, seawater-lubricated system. Thomson says the company has expanded to Poland and Saint Petersburg, Russia to complement the Canadian facility. We asked him why Poland? He replied that the country was the only nation in Europe that didn’t have a recession, and that it had a very good banking system as well. Additionally, for every million dollars of investment the company gets a \$600,000 tax break, and it has lots of clients in neighboring countries.

THE FOURTH GENERATION

Sandy Thomson is winding down a little today at the company. His new passion is an old one with him, film-making. He is working on documentary films and only spends a couple of days a week at the office. His stepdaughter, Anna Galoni, is a Polish-born epidemiologist by training and is now the firm’s Vice Chairman. She will eventually succeed her stepfather. In the meantime Terry McGowan, a non-family member, runs the company on a daily basis as President. Sure, Thordon has competitors, but Thomson says the family’s fourth generation can rise to the challenge because his company builds bearings to last: “While a competitor might want to change out a system in five or ten years, that is not our philosophy and it’s not good economics.” Sometimes things just work out right, and for Thordon Bearings and Sandy Thomson they couldn’t have turned out better.

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