

MATRIX

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A PUBLICATION OF **THE SANMAR GROUP**

COMMEMORATIVE ISSUE
35TH ANNIVERSARY OF
SANMAR ENGINEERING



Sustained Global Partnerships

The Sanmar Group

Chemplast Sanmar Limited

- Trubore Piping Systems

TCI Sanmar Chemicals SAE (Egypt)

Cabot Sanmar Limited

Sanmar Speciality Chemicals Limited

- ProCitius Research
- Organic Chemicals
- Phyto Chemicals

Sanmar Shipping Limited

Sanmar Engineering

Flowserve Sanmar Limited

BS&B Safety Systems (India) Limited

Xomox Sanmar Limited

- Xomox Valves Divn.
- Pacific Valves Divn.

Tyco Sanmar Limited

Sanmar Engineering Services Limited

Sanmar Foundries Limited

- Sand Foundry
- Investment Foundry
- Machine Shop

Matrix Metals LLC

- Keokuk Steel Castings Company (USA)
- Acerlan Foundry (Mexico)
- NEPCO International (USA)

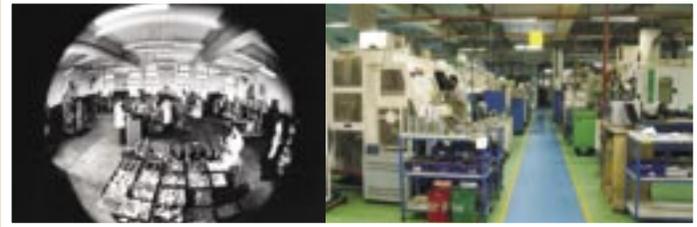


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Sanmar Engineering is 35

The Sanmar Engineering we see today is a well-integrated, synergistic group of engineering companies serving the process industry—in India and abroad.

Its journey started in 1976—a small beginning, with a small number of enthusiastic engineers, at a small workshop at a distant outpost of the city of Madras (now Chennai).

35 years down the road, it is time for us to look back—with pride and satisfaction, with gratitude, with warm memories of the great teamwork that has shaped that beginning into the successful international partnership it is today—professional, dedicated, globally competitive.

**Durametallic India (DMI)
(today Flowserve Sanmar)**

Two business enterprises came together in international collaboration back then—a path-breaking initiative by N Sankar in India and Durametallic Corporation (DMC) in the USA.

To everyone involved in the journey that began in July 1976, it has been the coming together of two



Durametallic India (1977)



Flowserve Sanmar (2010)



Sanmar Engineering, Karapakkam.

“families”, strong in team spirit and camaraderie.

If the young team that N Sankar, a 27-year-old industrialist in the making, had gathered around him was the Indian “family”, Durametallic Corporation, a world leader in mechanical seals, was the American “family” based in Kalamazoo, Michigan.

The late Paul Jackson and Raymond Battilana, Jim Ware, Clark Halbert, Tom Haan and Bill Adams are some of the outstanding men who struck life-long friendships with Sanmar.

It has been a story of repeated success, of sustained growth and expansion, a constantly widening range of products, making the group the only supplier of the whole gamut of engineering

solutions for its target consumers in the hydrocarbon, chemical and energy sectors; a story of the trust and confidence generated by the first joint venture leading to successive repetitions of the experience, by the goodwill Sanmar earned from each of its partners; a story of technical, managerial and marketing excellence, but also one of enduring relationships, of friendships that have survived the



Durametallic India early days



BS&B Safety Systems (India) (2010)



An aerial view of Sanmar Engineering at Viralimalai



Sustained Global Partnerships

changes of ownership and migrations of personnel inevitable in a globalising scenario.

It has been a story of a highly principled joint venture philosophy that has evolved organically through honest, transparent communication based on respect for intellectual property rights, and a clear understanding of the need for the joint ventures and the roles and mutual obligations of the partners.

Yes, it was a small beginning, all right. But the youthful visionaries behind the venture were clear that the first product had to be high-tech, and not

made in India; that there should be a foreign collaboration with world leaders in the particular technology—preferably American, as Sankar, who had studied in the US was familiar with American business practices.

Sankar and SR Seshadri, a young veteran of Chemplast, zoomed in on mechanical seals as the product with which to launch their new venture. It was a key component required in the process industry. It was a high-tech product, hitherto imported. It fitted the bill perfectly.

They knocked on the doors of some of the finest makers of mechanical

seals in the world. Their audacious exploration led them to Durametallic Corporation.

“Durametallic Corporation is a world leader in engineered mechanical sealing systems” wrote a chronicler, after the joint venture was born.

The chemistry between the two companies proved to be perfect. Their business values and spirit, as well as the management style, were similar. Soon an enduring bond of mutual trust and confidence was forged between the two.

A fortuitous decision to invest in some 14 acres of land at remote



Mr and Mrs PD Jackson, Durametallic USA, with KS Narayanan (1976)



N Sankar with PD Jackson during the inauguration of Durametallic Asia, Singapore (1982)



Flouserve Sanmar, Karapakkam

Karapakkam in the outskirts of Madras city came in handy. Durametalllic India came up in 1976—with 40 people on the shopfloor.

People driven by a passion for the product combined at Karapakkam to produce mechanical seals as good as those made in Kalamazoo. Along with N Sankar and N Kumar were the likes of SR Seshadri, R Sundaresan, R Ramachandran, each one a character—committed, confident, crazy about his work, with an incredible customer focus. The chemistry worked.

Going into production in July 1976, DMI made a profit in its very first year. Later MN Radhakrishnan, V Ramesh, KR Varma and others equally dedicated joined, making Durametalllic India synonymous with mechanical seals in India.

“The main strength of our collaboration lies in mutual trust and respect, and in our dedication to Sanmar being the best seal company in India. Talented staff from both Durametalllic and Sanmar complement each other’s strengths”: **James S Ware**, Chairman, Durametalllic Corporation

Dealer networks were the global norm in the industry, but DMI introduced direct sales to customers through an all India network that soon won excellent customer response.

Today, it is Flowserve Sanmar—after many changes in ownership through the mergers and acquisitions route—but it has never really looked back. It has grown into a large enterprise, with an enviable market share of engineered mechanical seals in India.

Remarkably, all subsequent capital infusion has been made from



Durametalllic 10th year celebrations (l-r): SR Seshadri, N Sankar, Jim Ware, KS Narayanan, R Ramachandran, S Ramaswamy, VS Dhandapani and N Kumar (1986)



N Sankar with JT Kenneally, BSE&B, USA, and WM Jordan, Flowserve Corporation, USA (1996)



Xomox Sanmar, Viralimalai



internal accruals, from the dividends declared year after year.

The Durametallic success encouraged Sanmar to venture into more joint ventures to manufacture similar products. By the end of the 1980s, it had added BS&B, Xomox, Geosource (Smith and Crosby) and Asco. By the next decade, Sanmar Engineering Corporation, a group of engineering industries serving the chemical, hydrocarbon and energy sectors was born.

Durametallic Asia

In 1982, DMC and DMI joined together to set up Durametallic Asia,

in Singapore. The entire technology was transferred from India by DMI, while the capital was provided by the US company. Gopinath and Seshadri were the two key people who moved to Singapore to man the new operation.

“It was a beautiful marriage. We had the technology, but we couldn’t invest overseas because of Reserve Bank regulations, while the US company could provide the money, but not the people to set up the plant, as that would have been too expensive.”

N Sankar

BS&B Safety Systems (India)

To expand its product range, Sanmar chose another niche product in its product matrix - rupture disks and safety equipment, critical for zero process leakage and plant safety, catering to the same core industry sector.

Like mechanical seals earlier, rupture disks were not then manufactured in India, and the project would save valuable foreign exchange.

BS&B Safety Systems Inc of USA were the pioneer and undisputed world leader in the field. Sanmar’s



N Sankar with J Hans Kluge during the signing of the Asco joint venture agreement (1988)



Foundation stone laid at Karapakkam for a new Control Valve facility. N Sankar with JJ Adorjan (1994)



Tyco Sanmar, Viralimalai

high reputation with Durametalllic Corporation made the tie-up with BS&B a seamless initiative.

BS&B Safety Systems India was established in 1981.

BS&B meets almost all of India's domestic requirement of rupture disks.

Once again pride and passion have ensured the continued retention of key personnel in the three decades of the JV's existence. Each rupture disk is virtually tailormade, and from R Venkataramani to its machine operators, every employee has become the possessor and guardian

of unique knowledge that goes into the making of rupture disks.

BS&B is committed to providing foolproof safety devices in critical applications in high tech industries—from Chandraayan, India's prestigious space project, to the Bhavini Fast Breeder Reactor Project at Kalpakkam, from India's power OEMs like BHEL or L&T to Los Angeles-based Bloom Energy.

The story repeated itself time and again, as Sanmar Engineering grew and evolved, with successive collaborations with world leaders in technology.

Xomox Sanmar

Sanmar Engineering launched Xomox (India) in 1982, introducing Tuffin valve manufacturing technology in India. The collaborator, Xomox Corporation, a world technology leader, was then a subsidiary of the renowned Emerson Electric Corporation.

Its enduring relationship with Xomox Corporation, USA—today, a subsidiary of Crane Co.—a global manufacturer of process valves and actuators has made Xomox Sanmar—located at Viralimalai, near Trichy—now an important



N Kumar, N Sankar, Julie Moran, Fisher Business Asia Pacific, KS Narayanan, Michael Keaveny, Commercial Consul, American Consulate (1995)



N Sankar with Charles F Knight, Emerson Electric Co., USA, during the 20th anniversary of Durametalllic India (1996)



BS&B Safety Systems (India), Karapakkam





Charles F Knight (Emerson Electric) and his wife Joanne Parrish Knight during their visit in 1996, seen here with N Kumar and N Sankar

base in the Asia Pacific region for sourcing fluorocarbon-lined valves and sleeved plug valves.

A joint venture with Pacific Valves, another subsidiary of Crane Co, the Pacific Valves division of Xomox Sanmar Limited offers the full range of Gate, Globe and Check Pressure Seal Valves to power stations and process industries involving flow control.

In 1983, the group launched the Smith Meter division of Moorco (India) Ltd, in collaboration with Smith Meter Inc. of the USA, pioneer and world leader in fluid volume measurement technology.

The success prompted Moorco to launch another division next year, Crosby India, in collaboration with Crosby Valve & Gage Co of the USA, one of the world's largest manufacturers of safety and safety relief valves.

Tyco Sanmar

Following the takeover of Crosby Valve by Tyco International, Tyco Sanmar was formed. Tyco International, USA., is a world leader in fluid control products, electrical and electronic components and medical disposables. It is the world's largest manufacturer and provider of fire and safety systems and services.

Tyco Sanmar Limited also inducted the Anderson Greenwood range of pilot operated pressure relief valves. The entire range of Anderson Greenwood and Crosby pressure relief valves is available from a single source - Tyco Sanmar Limited. The Tyco Sanmar facility at Viralimalai was dedicated on February 1, 2000.

Sanmar Foundries

Sanmar Engineering's foundry business, a consequence of the Group's efforts to meet its own requirements of castings, today comprises Sanmar Foundries Limited located in Viralimalai, India, and Matrix Metals LLC, USA. It is a major producer of castings in the world, with consolidated steel foundry capacities of 50,000 tpa.

Established in 1998, Sanmar Foundries has since expanded its annual capacity to 25,000 tons. It possesses the technology for manufacturing stainless steel turbocharger castings for high performance and high temperature applications in a variety of materials including Si Mo, Ni Resist and stainless steel.

The Group acquired Matrix Metals LLC, with a turnover exceeding USD 150 million, in 2007. The foundry provides end-to-end services to international customers

through a well-integrated operation including machining services. Its steel foundries at Keokuk, Iowa and Acerlan, Mexico are complemented by NEPCO, Houston, the trading arm with sourcing relationships across the world.

Matrix Metals

Matrix Metals focuses on speciality steel castings for flow control, locomotives/ transit cars, military, construction equipment, and track and oilfield equipment. The company enjoys longstanding relationships with its customers like Caterpillar, Fisher Controls, Emerson, Cooper Cameron, Hitachi, Komatsu, Flowserve, General Electric, EMD, Joy Global, Assess Oil and others. Sanmar's relationship with Matrix Metals has existed for several years with NEPCO placing products from Viralimalai in the US market.

It has been an eventful voyage of global partnerships between Sanmar and its collaborators. Through the many challenges and successes, close ties have evolved, transcending business. Mutual respect and transparency have been the hallmarks of these relationships.

And all through the 35 years one thing has not changed: the strength of the relationships binding Sanmar and its partners together.

A view of 'pouring' at Sanmar Foundries, Viralimalai and Matrix Metals LLC, USA



Major Events at



1976

Flowserve Sanmar (Durametallic) begins operations at Karapakkam, Chennai.

1981

BS&B Safety Systems (India) and Sanmar Weighing Systems commence commercial operations.

1982-83

Viralimalai manufacturing facility set up and Xomox begins operations.

Geosource - Crosby valve and Smith meter JV's formed and construction begins at Viralimalai.

1984

Smith and Crosby division commences commercial production of Smith Meters and Crosby Safety Relief Valves.

1988-89

Durametallic installs the bellow welding facility.

Sensortronics (Vishay) and Asco (India) commence operations.

1990

Durametallic moves from manual drafting to Autocad.

1992

BS&B gets ISO certification.

1994

Xomox Sanmar adds Fisher Control Valves to its range. Fisher begins operations at Karapakkam.

Sanmar Engineering

2011

Sanmar Engineering - 35th Anniversary.

2008-09

Xomox Sanmar - Silver Jubilee

Matrix Metals LLC, acquired in the US.

Xomox Sanmar inaugurates Pacific Valves Division.

2006-07

BS&B Safety Systems (India) - Silver Jubilee.

All products get Reliance JERP contracts.

Inauguration of SR Seshadri Training Institute

Inauguration of Fisher Sanmar's valve facility at Karapakkam.

Eisenwerk Erla, a foundry unit in Erla, Germany acquired.

2002-03

Sensortronics Sanmar begins operations as JV with Vishay Transducers.

Sanmar Alloy Castings name changed to Sanmar Foundries.

FMC Sanmar manufacturing assets converted as Sanmar Foundries Machine Shop.

Xomox becomes part of Crane Co.

2000-01

Dedication of Tyco Sanmar at Viralimalai. Sanmar Engineering Services commences activities.

Sanmar Industrial Systems merges with Sanmar Engineering Services.

Inauguration of state-of-the-art Investment Castings facility at Viralimalai.

Sanmar Engineering Corporation - Silver Jubilee.

1998-99

Sanmar-PTI Filters commences commercial production.

Sanmar Alloy Castings establishes itself as a major supplier of castings.

Formation of Tyco Sanmar as Crosby range is separated out from FMC Sanmar.

1996-97

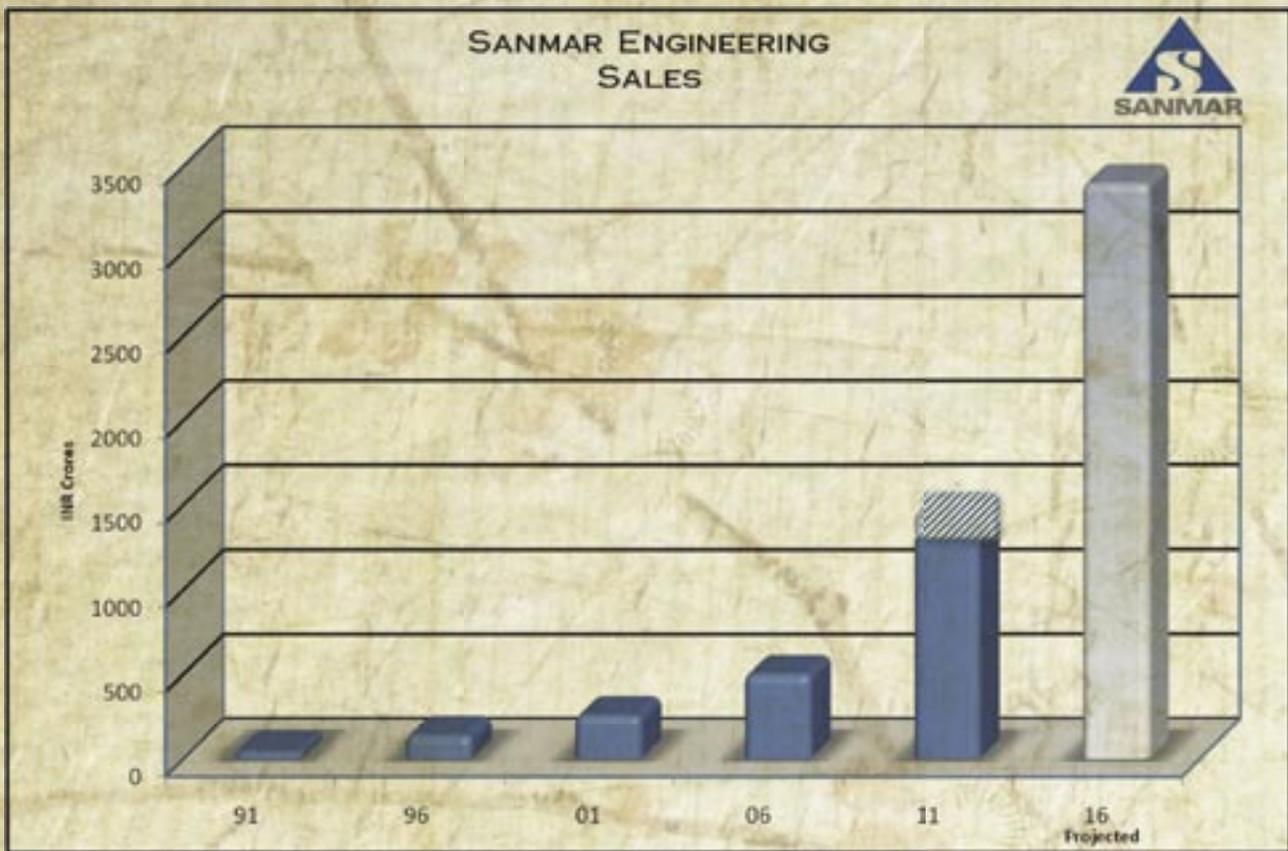
Contract for Reliance Jamnagar refinery for all products and services won.

Sanmar Industrial Systems formed.

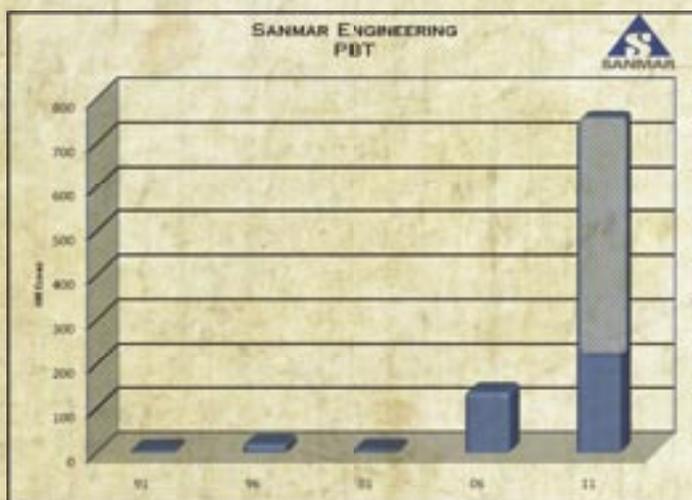


Sustained Global Partnerships

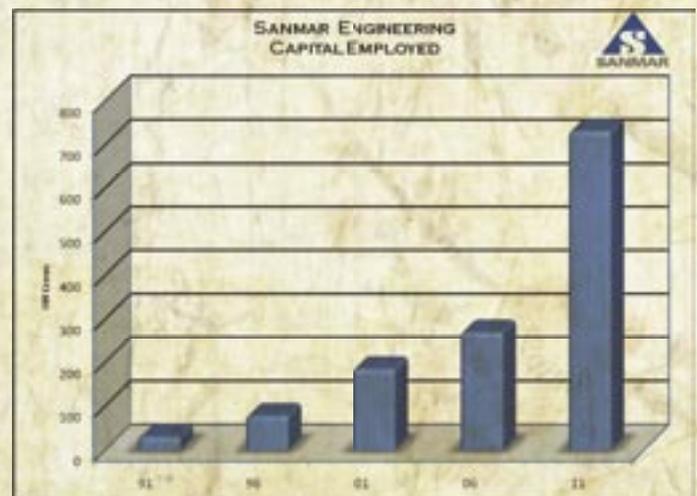
Sanmar Engineering - a memorable journey:



▨ -> Divested business



▨ -> Profit on Divestment (net)



N Sankar reminisces

N Sankar, Chairman of The Sanmar Group and founder of Sanmar Engineering, spoke to V Ramnarayan of Matrix about the continuous success story of the last 35 years. Excerpts:

The early days

Sanmar Engineering grew out of Durametall India, our first joint venture, with Durametall Corporation, USA.

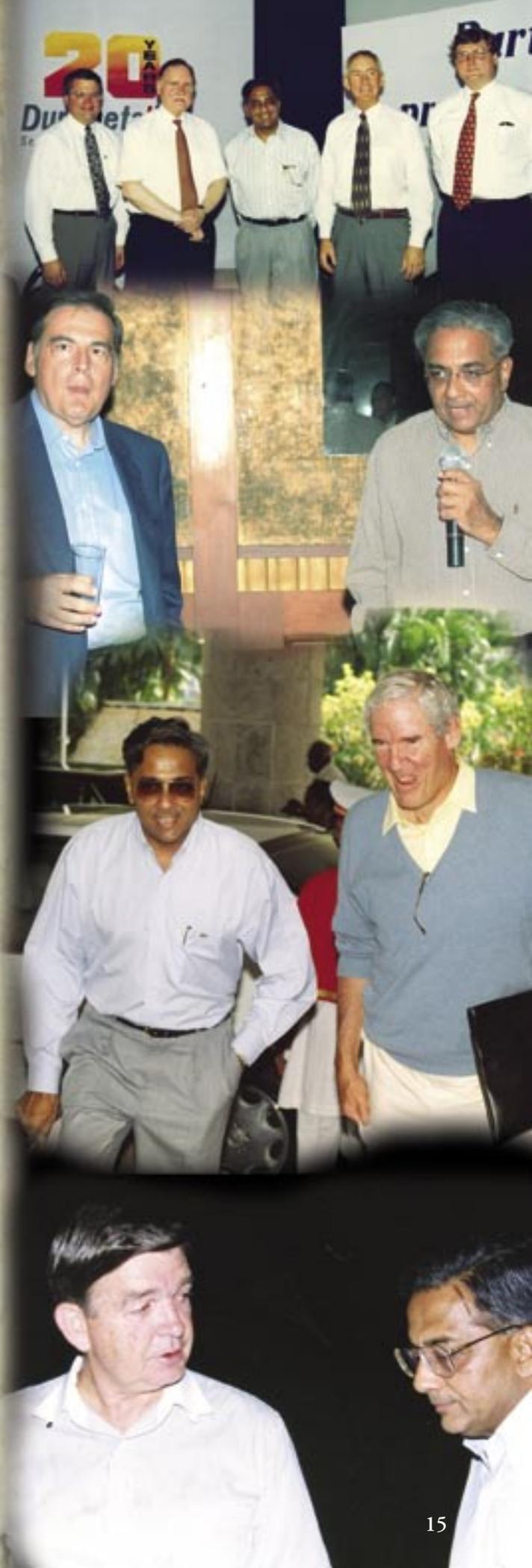
It all started with a phone call to me from my father KS Narayanan, then Managing Director of the India Cements Limited sometime in 1971. He said to me that we could not afford to let people like SR Seshadri go. The maintenance engineer in Chemplast had suffered a tragic bereavement. His wife had died in a car crash and he could no longer continue in Mettur. He wanted to be with his children studying in Madras, so he was about to join SPIC, the petrochemicals major at Madras. We had no operation in the city, and our General Manager S Ramaswamy had no choice but to accept his resignation. Father said I must start a venture in Madras for us to continue to have Sesh's services. He also advised Sesh not to leave.

Sesh had enormous respect for Father. So it was that we both sat in my room trying to find a project for him. My conditions for the project were simple. We didn't have much money, so it had to be a low-capital project. It had to be a high tech product, not made in India, and it must involve foreign collaboration, providing an opportunity to travel, meet people, grow more businesses. I preferred an American partner, as I had studied in the US and was familiar with the systems there.

Choice of mechanical seals

Out of the blue, he said, "Why don't we make mechanical seals?" I didn't know what a mechanical seal was. Sesh asked me, "Don't you know Crane seals?" Those days Crane was synonymous with mechanical seals in India, like Xerox is for photocopiers. At Chemplast we bought imported mechanical seals and I agreed with Sesh's choice of product.

We then wrote a letter—one of the better letters I have drafted—to a number of JV partner prospects, each of them a world leader. John Crane had a UK JV partner in Tube Investments and marketed their product in India through Tube Investments India. When I asked MV Arunachalam of their group if I could approach John Crane, he wished me





luck. They had been trying for years in vain to get Crane to come to India.

With Sesh the technology expert, we got in touch with R Ramachandran to take charge of the commercial portfolio. Over the next two years, we made a series of contacts to find a JV partner for the seals project. John Crane, then in Chicago, politely fended off our overtures. The experience at Sealol, another leader in mechanical seals, was more interesting. When we went to their Boston office, the CEO was on vacation in the Cayman Islands and we were asked to visit him there. We spent Halloween evening there, but nothing ensued.

First meeting with Durametallic Corporation

We met with success at Durametallic Corporation, a family-owned company, one of the leaders in mechanical seals. Eventually we did convince them and they overcame their inhibitions. They first met father at Cleveland. Sesh and I visited them next. They were very impressed with us, especially Sesh's knowledge and his commitment. They however, felt apprehensive about entering into partnership with two young individuals; they would have preferred to deal with an established company. The irony is that 37 years after that meeting, I am still here, while Durametallic (now Flowserve) has undergone so many changes.

Kalamazoo was a small town in Michigan and they had never ventured out of the Midwest.

The start of Durametallic India

I initially invested about Rs. 9 lakh of equity in the project, Durametallic invested a little over Rs. 6 lakh, and we took a term loan from Indian Overseas Bank. A building with 14 acres of land I had bought on OMR for another project came in handy. Those were exciting times. We did everything hands-on, had daily meetings. Sesh was the technology man, Chandar (Ramachandran) looked after marketing, and Prasad joined us from TVS to manage finance. Gopinath, now with Flowserve, joined us in Bombay as a sales engineer. It was a small well-knit group. We did innovative things. We introduced direct selling by engineers, breaking away from the widespread practice of dealerships. It all seemed to work. It was an amazing sales team, sold on the concept of direct sales engineers. We made a profit in the very first year, 1976-77. Today, 35 years later, Sanmar Engineering has done Rs 600 crore business with a Rs. 150 crore profit on operations.

Durametallic, now Flowserve, is still one of our most successful companies. The first money we put in, plus a small addition a year later, were the only net investment we ever made in Sanmar Engineering. All subsequent investments have come from internal accruals.

Expanding product range

Though we were doing well, our market was still a small field, and the volumes were small, by the very nature of the product. A sales engineer often travelled from Calcutta to Gauhati to sell two seals worth a few thousand rupees each. We found we could sell more products to the same customers. Their chief engineers asked us why we were not supplying them a whole range of other products. In a couple of years, we decided to go in for the manufacture of more products.

We started an internal identification programme for new products. Again we looked for partners who were the best in their field. Rupture disks, relief valves, solenoid valves and so on followed one after the other.

BS&B Safety Systems was our second joint venture. The company responded to our letter, but the telex went to Gordon Woodroffe. CD Gopinath, who was in charge there, recognised my name on the telex and forwarded the message to me once I confirmed it was meant for me. Our track record with Durametallic helped us clinch the partnership. This was in 1981. Each partnership became a reference point for the next one. This is another family-owned business. We have very strong ties with the Kenneally family. BS&B India rupture disks became another success story, still going strong.

Durametallic Asia

When I spoke to Durametallic Corporation about the bright prospects for mechanical seals in the Far East, they readily agreed to venture there. Durametallic Asia came about in 1982 in Singapore, owned 50% by the Indian JV, and 50% by Durametallic, USA. While my team entirely managed the business, Durametallic gave the entire money, given the restrictions on Indian companies prevalent then. They guaranteed the loan and so on, showing amazing confidence in us. Starting from an insignificant presence, Durametallic Asia grew to be a market leader in Singapore and the ASEAN region in less than five years.

We enjoyed continuous growth, with success in every new joint venture. Durametallic was taken over by Flowserve in the 1990s. Until then, Sanmar Engineering was known as the Durametallic group. It was only after the repeal of the MRTTP Act that Sanmar Engineering came into being as a group of engineering industries.

More JVs, acquisitions, divestments and friendships

Our partnership with Geosource, with their Smith Meters and Crosby valve divisions, was another successful venture. Bill Moore and some colleagues acquired a few divisions of





Geosource, including Smith and Crosby through an LBO and formed Moorco. When Crosby Relief Valves was sold to Tyco, Tyco became our partner. Asco, makers of solenoid valves, a separate division of Emerson Electric were our JV partners. We sold the business back to them. We also had successful partnerships with PTI Filters, another joint venture partner. When Sensortronics was taken over by Vishay Transducers, Sensortronics Sanmar became Vishay Sanmar. Eventually we exited that business. In the nineties, we merged Kumar's industrial electronics business with Sanmar Engineering. We started the foundry business to meet our own requirements of castings for valves.

Today, we have come back to the core businesses of Sanmar Engineering in Chennai and Viralimalai. We have added a foundry business overseas to our domestic effort to acquire one of the largest steel foundry businesses in the world.

Our partings with partners have always been friendly. We can always go to our old partners for references.

Charles 'Chuck' Knight, the CEO of Emerson Electric, was one of the top managers in America when we tied up with Emerson. We were very small compared to them, but within five years, Knight was saying that we were one of their best joint venture partners.

He became a personal friend and the friendship continued for many years.

Joint venture philosophy

Our JV philosophy evolved over time, based on our experience with each partner. From the beginning, I was clear that neither partner should take out profits any other way than from dividends. There would be no outsiders in the JV, only the two partners. The JV would be run as an independent venture for its own benefit and not for that of either partner. Being in management, we could have derived benefits, but we stuck to this principle scrupulously. We followed the same rules with each partner. Honesty and transparency are essential features of our approach to joint ventures.

People, our strength

We were lucky in our people. We had some amazing talent. Sesh was a unique person, with his knowledge, hard work and commitment. Chandar was a great commercial and marketing person. Radha (MN Radhakrishnan), another unique personality, joined as a sales manager in 1979, and rose to head Sanmar Engineering. We met almost everyday at Karapakkam. All three were heavy smokers and at the end of the day I had a severe headache after inhaling the fumes in the room all day. Gopinath, Venkataramani, Thiagarajan, Ramesh, Varma, ... I could go on and on—over the years, we had many excellent people who were really responsible for our growth. All in all, an amazing team.

Proud moments

There have been several proud moments. If it was a proud moment to enter into our first partnership with Durametallc, so was it to make profits in the very first year. Each new joint venture was a success to be proud of, with an amazing run of continuous growth that has lasted 35 years, with the period 2008-10, the only exception, when our US venture, Matrix Metals experienced a downturn.

To get Emerson to partner us and for Chuck Knight declare publicly that we were their best partners were proud moments indeed.

At the personal level, Sanmar Engineering set my reputation with its terrific track record. People started regarding me well after my successes there. In fact, it has supported the group strongly all these years as its main profit making flagbearer.

One of my proudest moments was a couple of years ago, when I took my father to Viralimalai. Although, he had laid the foundation stone for it 27 years earlier, he had not been back there for many years, and was very happy to see the large Engineering complex we had set up there.

Mentors and supporters

From my father, whose people skills are legendary, I learned the value of openness and honest communication in dealing with people—not only our business associates and partners but also our own people. At work, my mentor was Mr S Ramaswami, my first and only boss. I learnt a great deal in the four years I worked with him.

Another person I remember with great fondness is Paul Jackson—the CEO of Durametallc when I set up the venture. He was older than my father, but became a great friend of mine and gave me complete trust and support.

Actually, the first letter of intent and other approvals for Durametallc were in my brother Kumar's name. Kumar spent a short period with Durametallc India, and a three-month training programme at Kalamazoo. Though not directly involved after the first couple of years, Kumar has been a tower of strength. I could always count on his unquestioning support.

Lifelong relationships

Our oldest JVs, Durametallc and BS&B, have been our great allies. Paul Jackson, Raymond Battilana, Jim Ware, Clark Hulbert, Tom Haan, Bill Adams, JT Kenneally, Tiffin Kenneally, Rod Huse, Hugh Beveridge, Dr Izzo ... the list is long and distinguished. Some of them are no longer alive, but some are joining us at the 35th anniversary commemoration. Their friendships are among our greatest gains.





Sanmar Engineering Corporation
Viralimalai Complex
Foundation May 1982
Rededication 12 September 2009
by
Shri K.S. Narayanan
Chairman Emeritus
The Sanmar Group

VS Dhandapani and KS Narayanan being shown around the Viralimalai complex by N Sankar and MN Radhakrishnan

Veterans recall their years with Sanmar Engineering

Matrix interviewed some old Sanmar Engineering hands to try and jog their memory of the early days of the group, which had its beginnings with Durametallic India, soon to be followed by BS&B Safety Systems (India). Here are some excerpts:



M N Radhakrishnan
Chairman, Sanmar Engineering
32 years in Sanmar

Sanmar Engineering aims to provide total engineering solutions to clients. With its in-house foundry a reliable supplier of castings, and a services-and-maintenance outfit that guarantees round-the-clock plant-site operations bolstered by a countrywide network, SEC has, over the years, offered a network of facilities that meet the demands of the process industry.

Technology management is the secret of the success of Sanmar Engineering. It acquires the most appropriate, sophisticated technology through collaboration agreements with world leaders in the field, internalises it, and then applies it creatively to the emerging needs of the Indian economy. We are specialists, not just somebody who has borrowed a technology.

Instead of buying a mechanical seal at Kalamazoo, you buy it in Karapakkam - it is the same product. The same goes for all our products.

To pass on technology across international borders, a company should have a

standing internationally. No company can rank no.1 without structured operations.



R Venkataramani
Senior Advisor-Quality
30 years in Sanmar Engineering

BS&B's rupture disks are custom built. Each of them is fabricated. It is still continued the same way. The basic raw material is not consistent - the operator has to have the feel of the product to make it. The oldest operator has been here for 26 years. The process is based on the material. It is an art. There is no standard rupture disk. Training people is still a challenge. This job needs real talent, it is very specialised, so worker turnover is generally low.

After my initial training at BS&B, USA, I had to come back and reproduce the set-up here. At that time, it was a real challenge. The concept was new. The products were new. I had to learn, gain knowledge - it was unconventional manufacturing.

When we started production, another key aspect was marketing of the products.

The concept of safety was low in Indian industry. Whenever we talked to customers, we had to do a lot of educating on what a safety valve meant, how our safety valve was better than others, designed for ultimate safety - with two levels of safety. We had to

give seminars and demonstrations to propagate the products.

After the Bhopal gas tragedy, Indian industry woke up to safety hazards with a jolt. The awareness that something drastic could happen came. Every industry started looking into safety. The Factory Inspectorate started insisting on safety features. This helped to promote our products.

The petrochemical boom with Reliance and Finolex leading the pack was a major factor in our growth.

We started supplying products to Nuclear Power Corporation (NPC). We have an excellent rating with them. We have helped them with solutions for ultimate safety in critical applications. They have faith in us and appreciate our knowledge.

For the fast breeder reactor, we developed a double disk assembly as a safety device to protect the inlet and outlet. We delivered a prototype for the first time. India is working on this type of project, which is likely to commence by 2013. The entire world is watching all of us. It is one of our prestigious projects. It is also a high value project. A special stainless steel is used. When Chandrayaan went into orbit, we supplied a product that helped to prolong the orbit and helped take more pictures.

Power plants, whether thermal or nuclear, are good business for all SE companies, they offer good opportunities. The outlook is bright for the next few years.

We are proud to belong to SE. We receive a lot of encouragement and enjoy freedom, the kind of freedom you do not get anywhere else. We are given a free hand in manufacture. There is transparency in the system, we believe in empowerment of people,

treating everyone as equal, with no differentiation, no favours.



KR Varma

*Chief Executive, Flowserve Sanmar
33 years in Sanmar Engineering*

I have stayed here for so long, because of the kind of people—both peers and seniors—I work with and the stimulating work atmosphere here.

I have moved from one company to another within the group every 4-5 years. I have worked in BS&B, Flowserve, Tyco, and FMC and that's made things interesting and challenging, too.

I graduated from Trivandrum Engineering College and my first real job was at Sanmar. I joined Durametallc in 1976. Gopi, Nagaraj and I joined on the same day.

Seshadri and Chandar (R Ramachandran) were there. MNR joined in 1979.

That was the time we started setting up the plants. I had no formal training. The training was done by Sesh. I had no idea of mechanical seals. When I joined, one of the big jobs was from GE. I worked in our Delhi office for five years from 1981.

I moved to Flowserve in early 2009. I have come full circle.

We upgrade our skills by interacting with people and through the resultant exposure. We do have some training programmes to prepare people to take higher responsibilities; we send people to establishments like Great Lakes and Kellogg, Singapore. My involvement

with my team in skills-imparting is quite high – both technical and managerial.

The future for Flowserve and Sanmar Engineering in general is pretty good. We were not affected by the financial downturn. At Flowserve, we took a conscious decision to focus on the domestic market. That helped; especially when India's economy picked up, we started doing well. Now Flowserve does less than 5% exports. It is a conscious decision taken at the business level.



V Ramesh

*Managing Director, Sanmar Speciality
Chemicals 20 years in Sanmar*

I did M.Tech Thermal Sciences in IIT Madras, after graduating in engineering from GCT Coimbatore.

It was my second job after SPIC. I joined on 16 August 1983. I had been Sundaresan's customer for seals and he interviewed me. I said I'd join if offered his post. When he was promoted as GM, I joined as Technical Manager.

Dura was like a family, a very small unit with annual sales of Rs 3 crore or so. There were only 40 of us on a small shop floor and we all knew one another. Sesh—down to earth and famous for his Madras lingo—had left for DMA, Singapore by then. MNR, with his own brand of humour, looked after the marketing function and RR (R Ramachandran) with his American accent and pipe-smoking, was the commercial manager. The very

emotional Sundaresan was reporting to him. Radha moved to Xomox to start the new JV.

I remember travelling by Ambassador car to and fro Karapakkam. With contract bridge a passion with my carmates, I was often the card table!

Dura was very close to NS's heart. Kumar too was very involved, in fact trained in Kalamazoo.

The competition between Dura and Sealol was to be seen to be believed. Every one of our sales engineers knew the product thoroughly and was convinced of its superiority. Each of us was committed to the product.

The service engineers were at liberty to call us at any time or day and they did call us sometimes at midnight even from the customer's premises. If a seal failed, our men replaced it in two days' time. One of these men called me once from a factory in the north. It was the weekend and the client would not allow him to go back until he solved his problem. He spent his weekend in the factory! Another time, Shyamol Chakrabarty, who is still in Flowserve, Kolkata, had to pretend to be a local, to escape paying some ransom when some thugs invaded a customer's premises. If they knew he was a visiting engineer, they would have demanded their pound of flesh.

Seven days after I joined, I was sent to the ONGC offshore platform on a trouble-shooting mission. I was quite prepared, as Sundaresan had sent me all the relevant product literature six months before I joined!

Those were exciting times, with one new joint venture getting added every year. Sesh was a great character, he got close to everybody in the company. There were frank, free and fearless exchanges

among the various players. If Sesh was passionate, Sundaresan was equally so, tending to get emotional when Seshadri and he differed on technical matters. Radha with his wry humour would needle Sundaresan about what he claimed the market had faulted in our design, who would storm out to the shop floor, drawing in hand, after telling him the salespeople didn't know how to sell. Sometimes, Sesh the instrumentation engineer, and Sundaresan, the chemical engineer, argued over a mechanical engineering problem while I, the mechanical engineer watched silently. It was all healthy and constructive and I was truly inspired by all of them.

I have great memories of my Sanmar Engineering days—the great team we had that included Ananthkrishnan, Sankaralingam, Kalyan, Patwardhan, Varma. The sales conferences were memorable occasions.

I have fond memories of my training stint at Kalamazoo. The collaborators were most helpful. I particularly remember my interactions with Bill Adams, their technical chief. We developed many seals at Karapakkam. The boiler feed water pump seals were a great success, as were the Teflon Bellow seals. We specialised in agitator seals—some much bigger than our men!

When Sanmar Engineering expanded, we gained exposure to the practices of all the JV partners. I participated in the development of the cell concept in factory layout—with cells like the gland cell, sleeve cell and Teflon cell. We invited a lecturer from IIT Madras to address the employees on the cell concept. Radha and other seniors circulated enlightening articles among the employees. I remember Chuck Knight's articles on management.

On the whole, it was an enriching experience. I was close to tears while moving on to Chemplast in 2003, so strong were the ties within Sanmar Engineering.



S Thiagarajan
Ex Vice President, Marketing
Sanmar Engineering

I joined Durametalllic India in May 1982 as Marketing Manager. I was the third person into that position since its inception, following the enigmatic Chandar and Radha. Having come out of Best & Crompton, a company with a predominantly British culture, I was a little out of sorts getting into the skin of an Indo-American culture. Once when I sent a note to Chandar mentioning “the MD said so and so...”, Chandar asked me who this MD was. When I blinked he said in this company it was either “Sankar or simply NS”. Sankar had established in the organisation a work environment I would term as “formally informal”. The Group then had only DMI and BS&B and was setting up the Dura Singapore unit. Also activities had started for establishing Xomox India.

Dura was headed by the late Sundaresan as GM and had a core group consisting of Raman, Ramesh and I heading finance, technical and marketing respectively. We three formed an excellent team supporting and empathising with each other in the discharge of our individual functions. In later years as we evolved towards becoming Sanmar Engineering, Raman went on to head group finance, Ramesh headed Dura and I took over as VP Group Marketing, but such was our bonding that to this day we remain good friends, in touch with each other.

Though the product was one of import substitution, competition was intense as the market size was limited those days. But we had an excellent, committed and aggressive team bent on not losing a single order and it was no surprise we had much higher market share. In order to achieve this in major projects we made a three-pronged attack on project owners, OEMs and consultants. I cannot forget the likes of Subramaniam, Sankaralingam, Varma, Kalyan, Das, Patwardhan, Ananth, Suresh Bhat, Harish, Prabhaker, and Rajda who made this happen.

We had excellent relations with Durametalllic Corporation. In those days there was a very healthy practice of deputing any senior executive to the JV partner's place a year after he joined. I went to Kalamazoo (MI) in 1983 and received all the support from the seniors there: Jim Ware (President), Ray Battilana, Bill Adams (VP Eng), Fritz Boos (in charge of European operations). Tibor Kiss, the marketing head then, was with me from the time I landed to the time I departed. He was a great guy but a maniacal driver, a taste of which I got driving from Kalamazoo to Chicago (a distance of 350 miles) in three hours flat during a weekend sojourn. Tibor left soon after and Tom Haan took over as VP (Marketing.).

I would be remiss if I did not mention dear old Sesh here, the gentleman with a foul tongue and a heart of gold. He personified “man” in the word manager and he was someone who genuinely cared for all those who worked in the organisation. I reported to him directly in my role as VP (Group Mktg.) and thereafter as Sr VP Fisher Xomox (SBU head) and have many memories of our fruitful interactions. May his soul rest in peace. Some others I had close contacts with were Aravamudhan, Achuthan, Ramani, Venkatramani, Kumar, Vasu, Chakra, Kaul, the late Narayan, Rajda, K Ramesh, KS Ravindran, Kesari Prasad... the list is endless. We were one big family and often had many get togethers outside the office.

'A healthy mind in a healthy body' was something we never lost track of. We had a tennis court at Karapakkam in the early days. We conducted annual tournaments in tennis, table tennis and carrom, with employees at all levels participating. We even had a cricket team in the league and a rowing team winning laurels in the Merchants and Bankers Regatta at the Madras Boat Club.

I had the privilege of being closely associated with developing the concept of projecting the various companies as a group, and thereby came into being Sanmar Engineering Corporation. I look back with pride and happiness having been instrumental in bringing out the first promotional material for Sanmar Engineering.

My days in SEC will always remain close to my heart. One of the greatest compliments I have received was from Sesh in my farewell party. He said, "I have no hesitation in saying Thiagu was one of the co builders of Sanmar Engineering Corporation".



S Subramaniam

Vice President, Accounts, Corporate Division 35 years in Sanmar

I joined at Dhun Buildings, and was sent to Karapakkam within two months. I was there on 1 July 1976 when Durametalllic was inaugurated. Construction work was going on and there were imports of goods for the new project. I was a stenographer but learned the nuances of the work I was handling. I was also handling term loans and other advances at the bank.

We had to take the 19B route to reach Karapakkam, but we often got lifts in the cars of N Kumar in the morning, and the company car or Matador van in the evening. Karapakkam was a lonely spot then, and the factory compound had a few snakes in it.

What I remember most about the time is the team spirit. SR Seshadri was a great leader who motivated us all. N Sankar, N Kumar and other top management treated us a close-knit family. Seshadri was a strict disciplinarian. He insisted on keeping the shop floor clean. He was niggardly about company property and insisted that the need for every part, every component must be justified. "What makes you think this casting is not good enough?" he would tell a worker, "I'll show you how it can be used," and volunteer to machine it himself.

I learnt a great deal from S Prasad, the finance manager. Each of the managers was an inspirational character—SRS, Prasad, Sundaresan, Gopinath, Chandar, Srinivasaraghavan.

A memorable experience was to work briefly with Robert Thompson of Durametalllic, who complimented me on my work.

Ayuda Puja and Factory Day on 1 July 1976 were very happy occasions. The festivities were marked by a very special camaraderie.

When in 1979, Prasad asked me to join NS's office at the headquarters, I was reluctant, not only because I was happy at Karapakkam, but also because I was nervous. But NS gave me a lot of confidence and encouragement in my new assignment.

I joined armed only with a B.Com degree and I have now grown to the level of a Vice President. I would have never received such opportunities in any other organisation.



Kutti Mari

Operator, Flowserve Sanmar 35 years in Sanmar Engineering

I joined as a helper on 1 July 1976, with no educational qualifications. Mr N Kumar brought me to SR Seshadri and entrusted me to him. I worked hard and received every encouragement from the company. Soon, I became a section head and within two years in charge of a special project. I was in that project making an important part of a mechanical seal for ten years. The next 25 years, I have been involved in making special process bellows seals. I have taught what I know to everyone in my section.

My first guru was Mr N Kumar. After he handed me over to him, it was SRS all the way. I also owe a lot to TR Narasimhan, who would often tell me that I was the most talented chap, and gave me responsibility.

The company has exposed me to some very good training programmes, internal and external. I have lectured and demonstrated on mechanical seals at customer locations like ONGC. I have been deputed to Reliance, Jamnagar on a troubleshooting assignment. At Surat, I finished in ten days what I was expected to take 20 days to do.

My first rule for myself was, and still is, that I must not let down my boss, my company. I have never been late for work. I aim at 100% accuracy in my work.

**K Kumar**

*Manager, Accounts, Flouserve Sanmar
35 years in Sanmar Engineering*

I joined as a stenographer, along with S Subramaniam and R Subramaniam. We were empowered to grow beyond our initial roles. It was a great team effort that kept us going in the initial years. There was no transport other than 19B, but our bosses NS, NK, RR, SRS invariably made life comfortable for us by getting into one car and leave the other cars for dropping us at Adyar in the evenings. In the mornings, we either took 19B or a lift from N Kumar. As a stenographer, I was not attached to an individual but assisted NS, SRS, or RR.

We were a highly motivated lot. I remember NS assuring us all one day: "Don't worry. I'll take care of you. We'll grow together." It was the kind of inspiration that we needed. I am very comfortable working in this group, which has given us all opportunities to grow, professional freedom to perform our functions well, in a non-hierarchical set-up. We all knew that if we did well the company would grow and if the company grew, we would grow. The whole environment was charged with positive thoughts.

If Sesh was my mentor officially, NS involved me in the sporting activities at Karapakkam—tennis and cricket. We played every weekend and I later played for Chemplast second XI in the Hindu Trophy. The top management was friendly and simple.

One of the early moments of excitement was preparing the literature for a

prestigious industrial exhibition in which Durametallc was participating. I also acted as a part time stenographer to Paul Jackson of Durametallc on a visit here. "You make the same mistakes my secretary does," he joked.

**S Gopinath**

*Senior Operator, BS&B Safety Systems
26 years in Sanmar Engineering*

This job requires great care and hard work, like the work of a potter. We need to mould and shape our employees.

SRS treated me like a son, right from the beginning, when I joined the company. Whenever I committed mistakes, he corrected me immediately and likewise he appreciated me when I did excellent work. I admire his concern towards each and every employee of the group.

I was the fifth employee to join. Today, all five employees in my team have great knowledge in their disciplines. I am the seniormost of 29 employees.

All these years, my aim has been to impart quality training to the employees and nurture them to the highest standards of work.

I tell my team that we work for an MNC. We make sure that each product that we roll out satisfies our customers. I have a little experience, in every department like engineering, planning, quality control and marketing.

My team and my seniors have complete faith in the quality of my work. They say, "Once Gopi approves something, it is final."

**J Badhragiri**

*Master Operator, BS&B Safety Systems
25 years in Sanmar Engineering*

I had nine years of work experience when I joined Sanmar. For the past 25 years, I have felt I work in a family. This work atmosphere is the handiwork of my superiors Mr Varadan, Mr Arya and Mr Ravindran. We have a very good team and we have all learnt a great deal from our bosses.

The Bhavini project has been a special project. We successfully completed the supply of rupture disks for the project recently. We developed the product from scratch. It involves high temperature and minute pressure. It was really a very special project.

I went to sleep every night thinking about this project. We planned it well before the execution of the project. Till date I haven't received any complaints from our customers.

In 1991 we had to supply six rupture discs to NPCL in record time. We started the work in December and completed it in January.

I have never applied for leave or permission for the last 18 years. I am proud of my involvement, dedication and commitment. It is a challenge to instill these values in today's employees. I try not to behave like a boss, but treat them as my colleagues. I share my own experiences with them, I tell them about the challenges I faced initially, about the lack of conveniences in the early days, and try to inspire them.

Among the more interesting projects has been the Bloom Box project for BHEL. Other major assignments have been the projects at Reliance Jamnagar and NPCL.



N Kumar, N Sankar, Mr & Mrs Paul Jackson, Local Panchayat Head and SR Seshadri (1976)

Album (1976-2011)



(Seated l-r): VS Dhandapani, Clarke Helbert, KS Narayanan, PD Jackson, N Kumar, SR Seshadri (1976)



Durametallic Asia inauguration (1982)



N Kumar with MN Radhakrishnan (1983)



*Bill Laws, Geosource, USA, with
N Sankar (1983)*



*Tom Bruns and Mike Sandling,
Tuflin, USA, with Sanmar
Engineering employees during their
visit (1984)*



*N Sankar with Mr and Mrs J Hans
Kluge of Asco, USA, after signing the
joint venture agreement to promote
Asco (India) Limited (1988)*



KS Narayanan with J Hans Kluge of Asco (1990)

AG Eckhardt with MN Radhakrishnan and SR Seshadri (1990)



Jim Ware, Durametallic, USA with KS Narayanan during the 15th Year of Durametallic and 10th year of BS&B (1991)





15th year of Durametallic India and 10th year of BS&B India T D Kenneally, BS&B, N Sankar and J S Ware, Durametallic (1991)



D J Hunter and W Schett of Xomox, USA during a visit to Invest factory, Belgaum (1992)



Moorco and Crosby team - FMC (Moorco) Mike Tiner, Allen Dunston, Nick Heyward, Anthony C Novax with N Sankar, SR Seshadri and MN Radhakrishnan (1994)



Jean Pierre Montupet and Mike Train, Dave Farr, Emerson Asia Pacific, with R Venkataramani and MN Radhakrishnan (1995)



N Kumar, Chandra Sankar and N Sankar, with Charles F Knight and Joanne Parrish Knight, Bill Davis, Al Suter, Charlie Peters, Bob Staley, from Emerson Electric Co., USA, B Natraj and MN Radhakrishnan (1996)

20th Anniversary of Durametalllic India and 15th anniversary of BS&B India: Tom Haan, N Sankar, J T Kenneally, KS Narayanan, W M Jordan, SR Seshadri, TD Kenneally (1996)



Bill Jordan and George A Shedlarski, Flowserve Corporation, USA, with N Kumar (1996)



Visit of Randy Smith of Asco (Asco 1st floor opening ceremony in 1997)

Dave Farr and N Sankar during the inauguration of Sanmar Foundries Limited, Viralimalai (1998)



N Sankar with Gregory Hyland and Randy Miller during the inauguration of Tyco Sanmar at Viralimalai (1998)

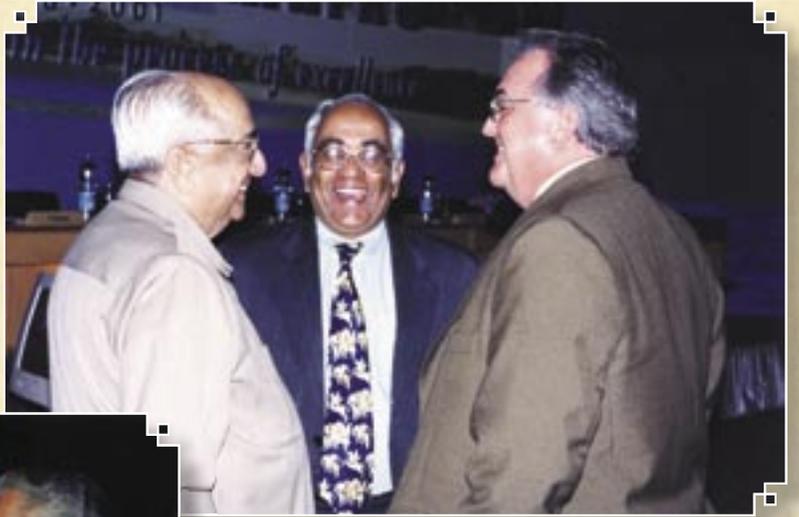


James Papas of PTI Filters with N Sankar during Sanmar Engineering's Silver Jubilee celebrations (2001)



Mathew Kenneally and Joseph Izzo (BS&B) with Vijay Sankar (2001)

KS Narayanan and B Natraj with Reg Ingram, Tyco (2001)



V Ramesh, Tom Ferguson of Flowserve, USA, and R Venkataramani (2001)

Mathew Kenneally and Joseph Izzo (BS&B) with KS Narayanan during Sanmar Engineering's Silver Jubilee celebrations (2001)



P Natarajan, Ed Monser, Dave Farr, B Natraj and Mike Train with the Emerson team at Asco (2006)



John Smallwood, N Sankar, KS Narayanan, Dr Joseph Izzo and Geoff Brazier watch as TD Kenneally, BS&B, USA, lights the lamp during the BS&B Silver Jubilee celebrations (2006)



MN Radhakrishnan, David Farr, Emerson Electric Co. USA and N Sankar (2006)



Eric Fast, Crane Co., with N Sankar (2008)

N Sankar with Ed Monser, Emerson, USA, during a visit to Sanmar Foundries, Viralimalai (2008)



Tom Ferguson and Richard Heppenstall of Flowserve, USA, with Vijay Sankar during their visit to India (2010)

Mark Tucker, Max Mitchell, Kevin Olsen, and other visitors with Sriram Ramakrishnan at Xomox Sanmar, Viralimalai (2011)



Mark Tucker, Anthony M D'Iorio, Ashraf Shakir and Kevin Olsen, the management team from Crane Fluid Handling, USA, with Kesari Prasad at Xomox Sanmar, Viralimalai (2011)

Feedback from Customers

डॉ. प्रभात कुमार
Dr. Prabhat Kumar
विभूषित वैज्ञानिक
Distinguished Scientist
निर्माण विभाग, भारतीया विद्युत निगम लि.
संरचना निर्माण, भारतीया विद्युत निगम लि.
Director (Construction), BHAVINI &
Project Director, PFR Project



भारतीय नाभिकीय विद्युत निगम लिमिटेड
BHARATIYA NABHIKIYA VIDYUT NIGAM LTD.,
(एक राज्य से एक A Government of India Enterprise)
एणु ऊर्जा विभाग Dept. of Atomic Energy
कार्पकम Kalpakkam 605 102,
कच्छेरुपट्टि तालुका, कर्णाटक,
Kancherupattu Taluk, Tamil Nadu, India



MESSAGE

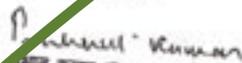
Rupture disc plays a very major role for chemical, fertilizer and power industry. In nuclear power plants, the rupture disc is provided at many important locations. This includes various buildings and air & various gas systems. The precision in manufacturing, testing and to ensure the safety which is very vital in nuclear power industry, where the consequences of mal functions can be serious.

M/s BS&B has made several rupture discs for BHAVINI. We were encouraged to see the systematic approach in design and testing. The quality assurance instituted in selecting the material and the fabrication process was found to be elaborate. The jobs that were carried out during material selection and manufacturing process control gave us enough confidence that the rupture disc will perform as per design pressure.

We also found that the people involved in the job have professional approach and they maintain transparency in their actions. We have all realized that M/s BS&B themselves rejected, if it is found defective from expectations.

We wish the management and the team all the best on the occasion of 35th anniversary of Sanmar Engineering.

With best regards,


प्रभात कुमार (Prabhat Kumar)

संरचना निर्माण विभाग (संर.) | Tel No (Office) : 844 2748004 | फ़ैक्स / Resistor : 844 2748122
निर्माण विभाग / Fax No.: 844 2748004 / 2748116 | ईमेल | Email id : pksan@ignca.gov.in
राज्य कार्यालय - ग. 51, एणु ऊर्जा, मॉड्यूल रोड, कार्पकम, कर्णाटक 605 008, कच्छेरुपट्टि
Regd. Office : No. 51, Aee, Mottath Road, Egmore, Chennai - 600 008, Tamil Nadu

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Essar Power Limited



Primary Project One
PO Box 24, Vardol Post Office
Bharuvala 367 200
Suratgarh (Gujarat)
Phone : 02825 241448
Fax : 02825 241734

EPOL/VAD/CERT/2007-60
Date - 4th May 2007.

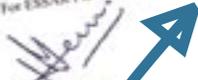
TO WHOMSOEVER IT MAY CONCERN

We are pleased to inform you that our CPP plant (Capacity 77MW) was commissioned in Sept 2006.

We are pleased to inform you that all the pumps fitted with M/S Flowserve Seals are performing satisfactorily.

Needless to say that back up service rendered by Flowserve team, Mr TK Suresh, Mr NP Nomanah & Mr R Yadao has been excellent and expecting the same in future.

For ESSAR POWER LTD.


K. K. Mahalingam
Head, Power Dept.

Needless to say that back up service rendered by Flowserve team has been excellent and expecting the same in future.

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GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
SPACE PROGRAMS CONTROL CENTER
ISRO
P.O. Sarabhai, Ahmedabad - 380 015

વિષય : ૧૯૯૯ : ૨૦૦૧ : ૨૦૦૨ : ૨૦૦૩ : ૨૦૦૪ : ૨૦૦૫ : ૨૦૦૬ : ૨૦૦૭

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TO WHOMSOEVER IT MAY CONCERN

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K. K. Mahalingam
Manager ISRO

.....supplied by M/s Xomox (India) Ltd for Anhydrous Ammonia Service is working to our full satisfaction since June 1989.

Synthetic Ferric Oxide Plant



The Associated Cement Companies Limited

ACC House, 100, Park Road, New Delhi - 110002
Phone : 26102222
Fax : 26102222

Date : 4.05.07

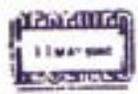
To
The Chief Executive
M/S Xomox (India) Ltd
107, Sarabhai Village,
Surat - Gujarat

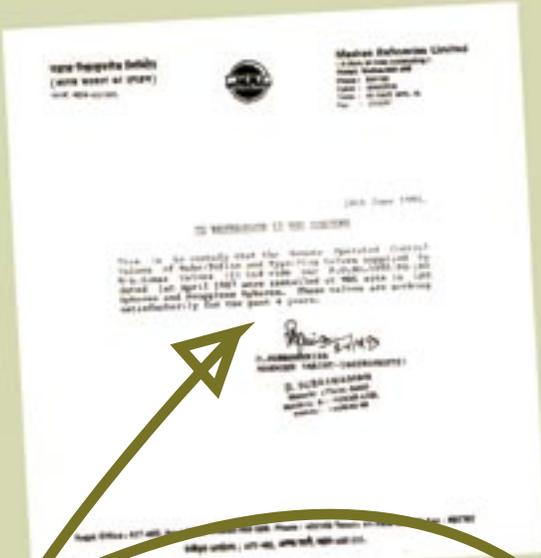
Dear Sir,
We are pleased to inform you that the Synthetic Ferric Oxide Plant at Pallana, Gujarat has been successfully commissioned on 04.05.07. The plant has a capacity of 500 TPD of Ferric Oxide. We are pleased to inform you that the plant is working to our full satisfaction since June 1989.

We would like to thank your company for the excellent efforts made in commissioning the Synthetic Ferric Oxide Plant at Pallana, Gujarat. We are pleased to inform you that the plant is working to our full satisfaction since June 1989.

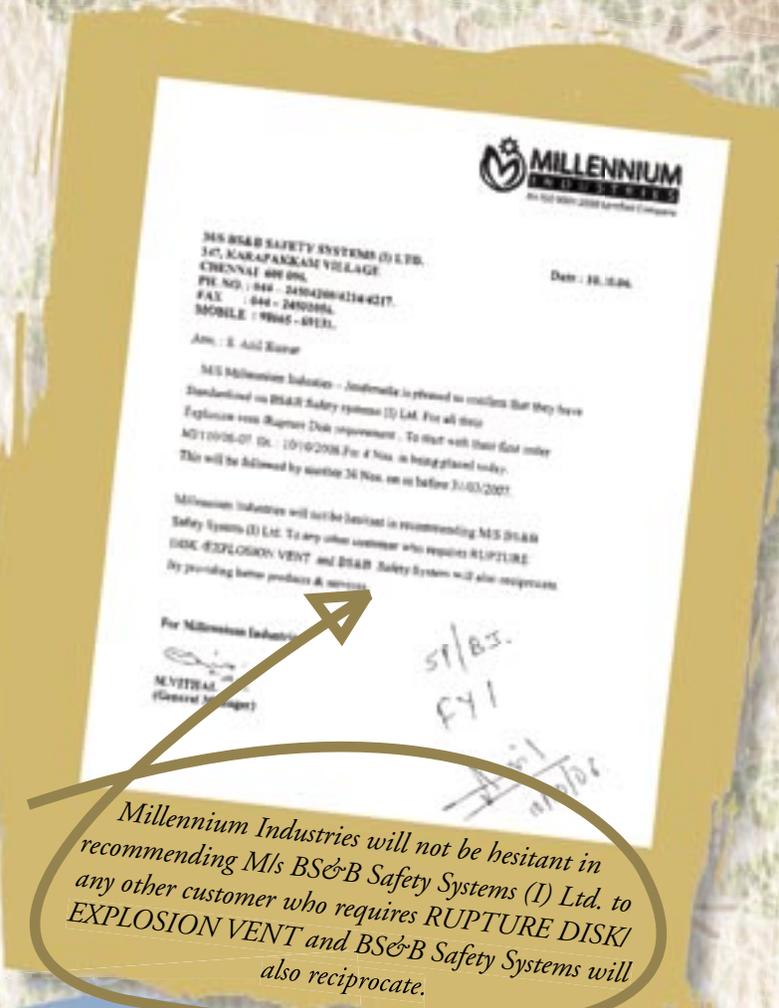
We have no hesitation in recommending Fisher Xomox Sanmar Limited to anyone needing the following items for their high quality performance and attributes.

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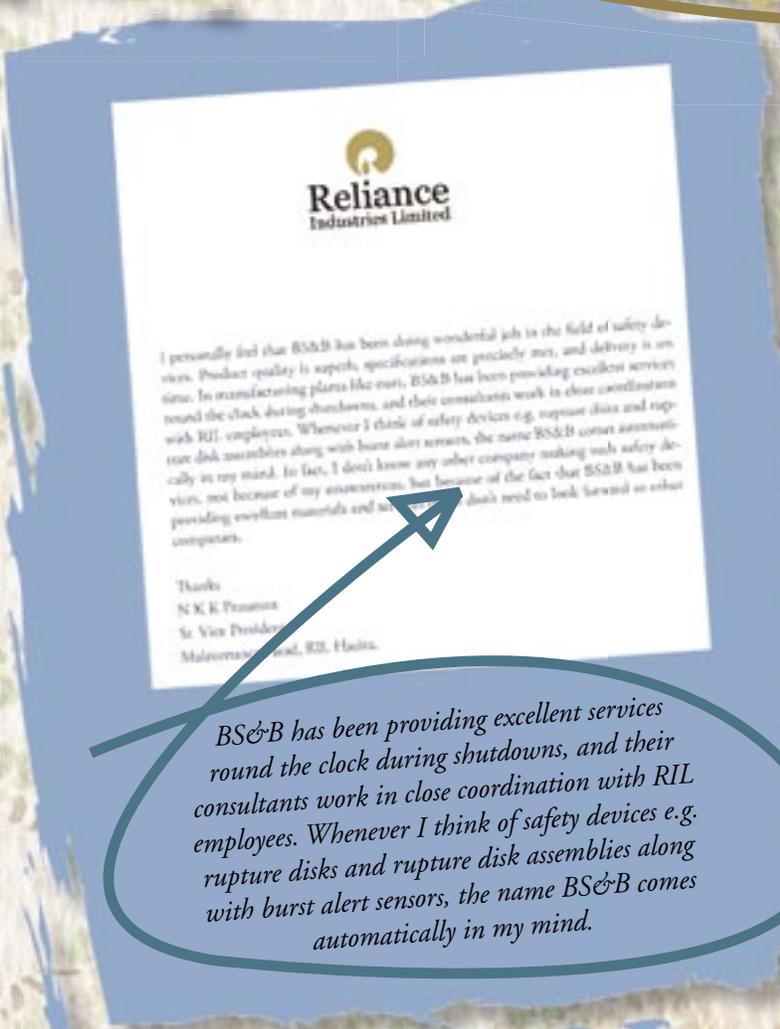




This is to certify that the Remote Operated Control Valves of Make: Tuflin and Type: Plug Valves supplied by MIs. Xomox Valves (I) Ltd vide our P O No 1008/PO/L80 dated April 1987 were installed at MRL site in LPG Spheres and Propylene Spheres. These valves are working satisfactorily for the past 4 years.



Millennium Industries will not be hesitant in recommending MIs BS&B Safety Systems (I) Ltd. to any other customer who requires RUPTURE DISK/ EXPLOSION VENT and BS&B Safety Systems will also reciprocate.



BS&B has been providing excellent services round the clock during shutdowns, and their consultants work in close coordination with RIL employees. Whenever I think of safety devices e.g. rupture disks and rupture disk assemblies along with burst alert sensors, the name BS&B comes automatically in my mind.

