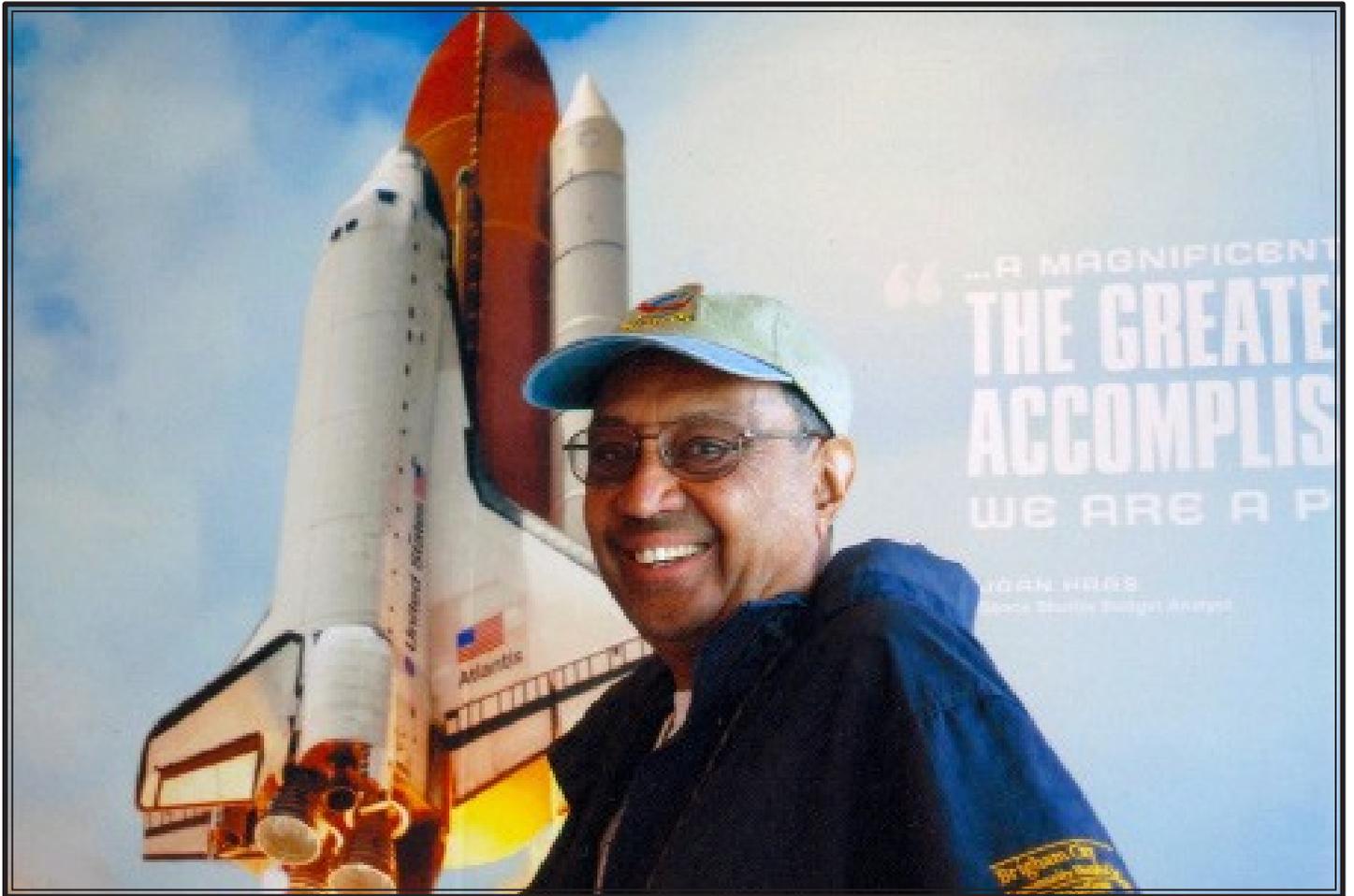


Journal of Cosmology, Vol. 26, No. 20, pp 15025 - 15109

Rocket Man



a memoir
by

Suresh B. Kulkarni

January 2018



2014: With Josh, Sharmila, Madeleine, Diane, Anjali and Ian at Kennedy Space Center, Florida. The Space Shuttle Orbiter, *Atlantis* flew 14 times during my tenure as Vice President of Space Engineering, from 1989-1997.

“It is amazing what you can accomplish if you do not care who gets the credit.”

–Harry S. Truman

To my wife, Diane.
Without you needling me all the time,
this memoir would not have happened.

Thanks!

Suresh

Rocket Man, Copyright 2018 Suresh B. Kulkarni

All rights reserved. This book or any portion thereof may not be reproduced or used in any manner whatsoever without express written permission of the author, except for the use of brief quotations in a book review.

Printed in the United States of America
First printing in 2018
UPS Store in Brigham City, Utah

Produced and edited by Diane Kulkarni
Writing, etc. . . .
dinahwriting09@gmail.com
2595 So. 1200 West
Perry City, Utah 84302-4171

Continual technical assistance: Terry Tolman, Weber State University
Ogden, Utah

Cover Photo: Josh Felix, 2014 – Kennedy Space Center, Florida

Assistant Editors:



Georgia Herod
Liberty, Missouri



Madeleine Felix
Perry City, Utah

- “Death in the Air” (pages 28-29) by Dr (Prof) Sadhana Kala – Delhi, India.
13 September 2015. Used with the author’s permission.

Editor's Note

In 1969, I first met Suresh Kulkarni when he was a PhD student at Denver University. His zest for life drew me to him, reminding me of a brilliant shooting star streaking through space. In reality, he was a rocket man, and neither of us knew it at the time. Since our marriage in 1972, he has taken me on the ride of my life.

I know the value of a life story passed from one generation to another, because that was something I wanted from my parents and do not have. Along with their journey together as husband and wife, the lessons my mother and father learned during their lifetimes are lost to me forever. I did not want that to happen to our daughters, Sharmila and Anjali and our grandchildren, Madeleine and Ian, and those who may yet join them.

I urged Suresh to write his memoir for the sake of the family. He came to America in search of a higher degree and then a better way of life. He contributed his talents and skills for the benefit of America for 31 years, and since his retirement in 2003, continues to give back to our local community and the state of Utah.

I cannot tell his story. Only he can do that, and I am thankful that he has!

Diane Kulkarni
Perry City, Utah
January 2018

“If you know who you are only through your memories, your sense of self will be as tangled as an old storage closet. By creating a written narrative, your past takes shape, offering a clearer vision of who you are today.” – Jerry Waxler

Preface

When Diane Kulkarni asked me if I would write the Preface to Dr. Suresh Kulkarni's "memoir," my response was an immediate and unqualified YES. Because, simply put, to do so, for me, would be a pleasure, and of course, an honor and a privilege.

I have known Dr. Kulkarni, aka, Shuru, Suresh, DAD, for nearly seven decades. Our lives have been inextricably intertwined. We were born four days apart, raised in the same city of Hyderabad, India, sat in the same classrooms for nearly 18 years. Our fathers, academics in the same university, also knew each other for decades!

After a brief gap, our lives intersected again in the USA and over the last five decades been punctuated by class reunions, the marriages of our children, and now exchanging stories about our grandchildren that continues unabated to this day! Given this, I do believe that I have had a front row seat to his life and thus am sufficiently qualified to write this Preface.

A memoir is a window into a life. In this instance, that of Dr. Kulkarni. What emerges from a memoir is a composite of an individual, as he or she negotiates life. An open book as it were. What can be seen is a mosaic of roles played, beliefs held, principles that undergird behaviors and actions, habits that lay bare strengths and weaknesses.

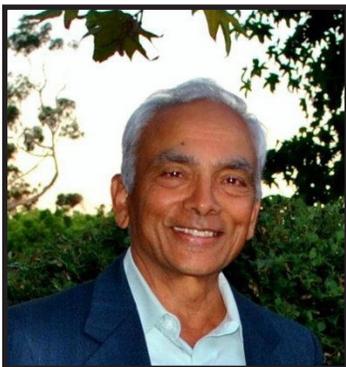
Without exception, an evaluation of a life, made transparent by a memoir is a Zero-Sum result. Zero-Sum in the sense that there are great positives and serious negatives, and the Whole, the totality, is no more than the sum of the parts.

But there are exceptions where the Whole is greater than the sum of the parts. I can state without much doubt that Dr. Kulkarni's life is one such rare exception and for sure, the Whole in this instance is greater than the sum of the parts by orders of magnitude.

As a young man, he showed superior intelligence and exemplary academic performance. He was a rebel, courageously going against all norms of tradition, culture, and religion by marrying his lady love, a foreigner, a *mlecha*, thus incurring the wrath of his parents and the painful excommunication that followed for years.

Professionally, he rose to great heights and won numerous awards for extraordinary performance. He has been the glue in holding together a disparate gang of friends for decades. (Hence the honorific of DAD showered on him with affection and love.) As a son he cared for his widowed mother in her old age without compromise. As a Good Samaritan, he is deeply involved in civic engagement, receiving encomiums from his home away from home. He has successfully executed his roles and responsibilities as a dedicated husband and father, and in his hobby as an ardent gardener, and on and on. A life that has given more, much more, than it has taken.

This memoir, written by him, based on the motivation of explaining himself only to his children and grandchildren, will certainly be an inspiration for them, but I dare say, a story worth reading by anyone and everyone.



Seshadri Velamoor
Retired Executive Director of Foundation For the Future
Seattle, Washington
January 2018

Table of Contents

Dedication

Editor's Note – Diane Kulkarni

Preface – Seshadri Velamoor

Origins:

- Notes from the Genographic Project, 2017
- Indians in America
- Brief History of the Sankethis
- The Kulkarni Lineage

Chapter One – My Early Years: 1944-1962

Chapter Two – College Years in India: 1962-1967

Chapter Three – Studying in America: 1967-1972

Chapter Four – Cut Off But Not Giving Up: 1972 Onwards

Chapter Five – From the Lowest Point to the Greatest Heights

Chapter Six – Life at Home in Brigham City

Chapter Seven – Early Retirement and Community Outreach: 2003

Chapter Eight – End Notes

Origins

According to the analysis of my DNA, which I received early in 2017 from National Geographic's Genographic Project, the results have been determined from my entire genome, which led researchers back six generations or more.

"The percentages reflect both recent influences and ancient genetic patterns in your DNA due to how groups migrated to and from different regions, mixing for hundreds or even thousands of years. Your ancestors may have also mixed with ancient, now extinct cousins, like the Neanderthals." The Neanderthal genome project revealed in 2010 that, through interbreeding, Neanderthals contributed to the DNA of modern humans, likely between 50,000 and 60,000 years ago.

To sum up the 13 pages of information sent to me: I am 1.4 percent Neanderthal. Thousands of years after my ancestors migrated out of Africa, the researchers conclude that I am 66 percent Northern India and 34 percent Southern India.

I am including a short summary by Dr. Urmila Pingle (Hyderabad) of the 2016 article, "The Genomic Ancient DNA Revolution: A New Way to Investigate the Past" by David Reich. Dr. Pingle is a population geneticist whose PhD was based on this area of work.

"The analysis of Indian populations is fascinating that 2000 years or more ago those populations looked very different from now. The contribution of North Indian genes was mostly by the conquering men, and the conquered women contributed to the South Indian genes, showing the sex bias. Even in Europe, the ice ages made a profound demographic change 4,500 years ago. In the next 10 years or sooner, there will be new theories put forward and old ones may collapse like the present, single migration out of Africa, which produced the present world populations."

Indians in America

The first real migration of Indians, although relatively small, began in the 1890s when mainly Punjabis moved into Vancouver and British Columbia and worked their way down into Washington and California. Because lumber was a major industry in the country, they became lumbermen and farmers. Several students attended UCLA Berkeley to earn their higher degrees and some professionals joined them.

The Gadar movement, which began in 1913 by Punjabi-Sikhs, demanded independence from British rule, so anti-Asian sentiment increased in Canada and the U.S. By 1924, laws were put in place to bar Indians from entering the United States; not just Indians but all Asians were excluded. Indians could not buy property anymore. And they could not leave the country to go back to India, marry and return with their wives. If they left the country, they could not re-enter.

From 1945 to 1965, 100 professional Indians were allowed, but in 1965 the Immigration Reform Act that "lifts numerical restrictions against Asian immigrants and set new restriction limits –120,000 immigrants annually from the Western Hemisphere and 170,000 from other countries. The law emphasized that immigration was devoted to reunifying families of American citizens. Immigrants had to have a sponsor who in turn, had to pledge to support arriving relatives or workers. Thereafter, Asian and Hispanic immigration soared. "

–From "Brief History of American Response to Immigration" – http://idexer.com/articles/immigration_response.htm

Brief History of Sankethis

From conversations with my mother and excerpts from
Life of Nacharamma: the History of Her Migration by M. Keshaviah, 1936



Diane with my grandmother, Thangadi – 1977, Bangalore

My mother is a member of the Sankethi community. Sankethis are mainly from the Mysore and Hassan districts near Bangalore in South India. Historically, everyone in her family married within this community. She was the first to break this tradition when she married my father who was from Borgaon, Maharashtra.

The Sankethis are Hindu Brahmins with orthodox habits. They speak a dialect that is a combination a mixture of Kannada (Kannarese), Sanskrit, Malayalam and Tamil. The ladies wear their saris in a unique tight style instead of a loose and flowing style.

The Sankethis revere a prophetess by the name of Nacharamma who was instrumental in leading their migration from their original homes in Tamil country in the vicinity of Kanchi or Conjeevaram, to the Mysore and Hassan areas. *Sanketan* means “subscribing to certain terms to be obeyed by all of them and never to go back to their original homes.”

There are four branches of Sankethis and they are named after the villages where they settled:

- a. Kousika is in Mysore district--this is my mother's group
- b. Bettadapura in the Hassan district
- c. Hiriangala in the Kadur district
- d. Malnad in the Tarikere district

The migration that Nacharamma led from her unhappy home between Tenkasi and Ambasamudram in Tamil Nadu to the area near Hassan appears to have occurred in the 14th century. The cause for the migration, as gleaned from historical books, is attributed to Nacharamma being insulted by a council of Brahmins. The story goes that the learned Brahmins concluded that she was miraculously blessed with extraordinary intellectual powers and that they were no match. They conspired to humiliate Nacharamma in public by inducing her to wear a new sari in connection with her son's funeral rites. While serving the guests at the dinner, the sari slipped (it was smeared with saffron and potstone powder). In a fit of rage, she cursed the Brahmins and the place, saying “I presently leave this accursed spot which will soon be converted into an arid and dismal waste.”

She left the village with about 700-800 families following her. Such an historical event of a solitary woman leading several hundred families on a journey of about 350 miles on foot is unique because Hindus who dislike change, are conservative and thoroughly disinclined to leave their homes. Their journey ended when they came to Kousika, about four miles south of Hassan.

After about 12 years, the next group of 300 families from the South came by the same route and settled in Bettadapura (hence the name Bettadapura Sankethis) and other villages close by. Then came the next batch of 150 families who settled in Berur and other places in the Kadur district (called Hiriangala Sankethis) while the fourth and last group of some 60 families found their home in Lingadahalli in the Tarikere district. These are known as Malnad Sankethis.

Nacharamma became the guardian angel of these four communities. In the olden days there was little intermarriage between the villages. But occasionally if a girl, say from the Bettadapura group married a Kousika, she would cease all contact with parents and relations from her community. Over time, as the population grew, some of the settlers moved to places, such as Mathur, Hasahalli, Sringeri, Basavapatna, Yedatore, and Ramnathpura. Today Sankethis have flourished in all walks of life and some still make it a point to visit their roots in the areas where their ancestors first settled over 600 years ago.

The Kulkarni Lineage

Dev Rao
Gangabai (wife)

Tukaram
Sarubai (wife)
[settled 15 km from Borgaon]

Sakharam Tukaram – Tatya Saheb
Veni (first wife)
Borgaon
[Our original surname was Girdhar. After becoming a patwari (village accountant), Tatya was called Kulkarni, the records keeper]

Sakharam Tukaram – Tatya Saheb
Satyabhama Devi Kolarkar (second wife)

Bapu Sakharam Kulkarni
13 December 1908 (Borgaon) – 5 March 1992 (Hyderabad)
Nagamani Shama Rao (wife) – 11 January 1916 (Bangalore) – 7 February 2012 (Perry, Utah)

Suresh Bapu Kulkarni
13 June 1944 (Hyderabad) –
Diane McLaren (wife) – 30 March, 1946 (Denver, CO) –

Sharmila Felix
16 September 1974 (Brigham City, UT) –
Josh (husband) – 23 March, 1974 (Healdsburg, CA) –

Anjali Chase
23 January 1979 (Brigham City, UT) –
Chris (husband) – 18 June, 1980 (Wayne, NJ) –

Madeleine Felix
11 February 2003
Brigham City, UT

Ian Felix
5 April 2005
Brigham City, UT

Chapter One

My Early Years

1944-1962



“I think what you notice most when you haven’t been home in a while is how much the trees have grown around your memories.”

—Mitch Albom

Childhood Memories

I was born Suresh Babu Kulkarni in Hyderabad around 9:35 p.m. at Osmania General Hospital on 13 June 1944, three years before British rule ended in India. My parents were Babu Sakharam Kulkarni (13 December 1908-5 March 1992) and Nagamani Shama Rao (11 January 1916-7 February 2012). I am the eldest, followed by my sister, Roshni (1945), and my brother, Vijay (1958).

My parents had moved to Hyderabad from Bangalore where they met while finishing their doctorates in 1943 from Indian Institute of Science (IISc), one of most prestigious universities in the country. After their love marriage on 9 July 1943 in a hill station known as Pachmarhi in Northern India, they moved to Hyderabad to begin their working careers at Osmania University, he in chemical engineering and she is organic chemistry.

My parents told me that I was born at a very auspicious time when the monsoons had already started and the mango season was in full swing.



Osmania University, Hyderabad, A. P. India



Above: Usha Cottage, 1944. Right: In my pram with our servant.



They named me Suresh, for Sungod. “Sur” means sun and “esh” means “Ishwar” or god in Sanskrit. Every year on my birthday, having juice extracted by hand from ripe mangoes was a must.

My very early years were spent in a rented home named “Usha Cottage” located near Kacheguda, a neighborhood near one of the three main railway stations. Every evening my parents took me for a walk to the railroad tracks to watch the trains go by. The engine drivers would blow their steam whistles to greet me since I was a regular sight to them.

In 1948, I have a vague memory of my father taking my mother, sister, and me to board a plane headed for the city of Nagpur in Central India. Later, my parents explained their decision was to assure our safety because of the possibility of wide-spread violence during the “Police Action,” which took place when Indian troops marched into Hyderabad to quell the rebellion by a gang of Muslim extremists called “Razakars.” This group, led by Kasim (Qasim) Razvi, wanted Hyderabad to be part of Pakistan.

The danger was very real, because months before, on 15 August 1947, the Partition of India led to between 200,000 to 500,000 people being killed in retributive genocide riots, which preceded The Partition in the Punjab region. It is estimated that 14 million Hindus, Sikhs and Muslims were displaced during The Partition, the largest mass migration in human history.

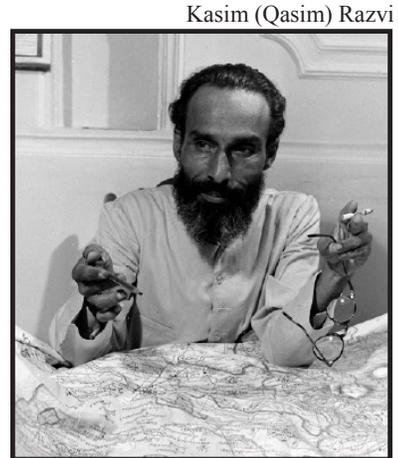
According to Wikipedia, “Amidst atrocities by the Razakars, the Indian Home Minister Sardar Patel decided to annex Hyderabad in what was termed a ‘police action.’ The operation itself took five days, in which the Razakars were defeated easily, but the operation led to massive violence on communal (Muslim/Hindu) lines. The Indian

prime minister, Jawaharlal Nehru, appointed a commission known as the Sunderlal Committee. Its report, which was not released until 2013, concluded that ‘as a conservative estimate...27,000 to 40,000 people had lost their lives during and after the police action.’ Other scholars have put the figure at 200,000, or even higher.”



The Police Action was a trying time for my parents

because only Hindu women and children were flown out for their safety. My dad was left behind. Afterwards, Razvi was sentenced to life in the prison in Trimulgiri on the outskirts of Hyderabad. Whenever we would take a drive towards that area, my dad would point out the jail, and I would visualize the prisoner suffering inside his cell.



Our family had already moved to another rental place in 1946, when I was two years old, in a locality called Sattaya Blocks. It consisted of two, two-storied buildings facing each other with each building having six rental units, three on each floor. Ours was in the middle on the ground floor. We lived in Sattaya Blocks until 1961. I have very fond memories to this day of that place because I made lifelong friends with Chalapathy and others with whom I played marbles and cricket, learned how to ride a bike and eventually drive the car. I also did well in my studies.



Sattaya Blocks--our unit was in the middle on the ground floor



The open courtyard of our unit



Chalapathy and his late wife, Rama

Our home was very simple: a living room, three bedrooms, an open courtyard-style dining room, a store room, kitchen, a bathing room, and a WC (water closet or toilet). There was an open courtyard where we all slept under the stars during the hot summer months of April through June. We had a wonderful lime tree, which produced an abundance of limes and also a *karepatta* plant (curry leaves) which grew vigorously in spite of Mother harvesting its tasty leaves to flavor our food. At the age of three, although I had been warned again and again, I loved the taste of dirt, which resulted in stomach worms and the fear and agony of “pooping” them out.

In 1949, at the age of five, I began attending an all-boys high school called All Saints that included classes from kindergarten through the sixth standard (grade). In 1950, my mother hired a rickshaw and its owner, the *rickshawalla* to take my sister and me to and from school. One day on our way home, the car of a prominent government official hit our rickshaw. While we were not hurt, we got to ride the rest of the way home in his car that sported official flags on the hood. We were the envy of our neighbors.

Another time that stands out in my memory is when Mother gave me new pens and told me not to take them to school, but I did anyway and someone stole them. I cried a lot that day.

Daily life at Sattaya Blocks was fun. I got up around 6 a.m., studied until 8, took my bath, ate breakfast and left for school around 9:15. I returned home at 4:30, played with friends until 6:30, did my homework and studied until 8, after which we ate dinner. We listened to music on the radio from 8:30-9 p.m. and went to bed. Every year when school exams were near, my mother got us up at 4 a.m. to study and in the evenings, a tutor came from 6:30-8 p.m. to make sure we were ready.

I did very well at the school and had a double-promotion from the second to the fourth standard and skipped the fifth, moving directly into the sixth. Another promotion was suggested, but my mother said no. During that year, the parent school of All Saints opened a new school called Little Flower High School and my whole class of 40 students was transferred there.

That same year, I was having trouble with math, receiving low scores, so my mother spent the entire summer holidays coaching me and teaching me not to memorize but to capture the concepts. From then on, I consistently scored 100/100 in every examination. Shortly after Father returned from the U.S., when I was 11 years old, he bought me a single-speed bicycle and taught me how to ride it. This became my means of transportation, enabling me to explore Hyderabad, and when I entered high school, I rode it to and from the school, three miles each way.

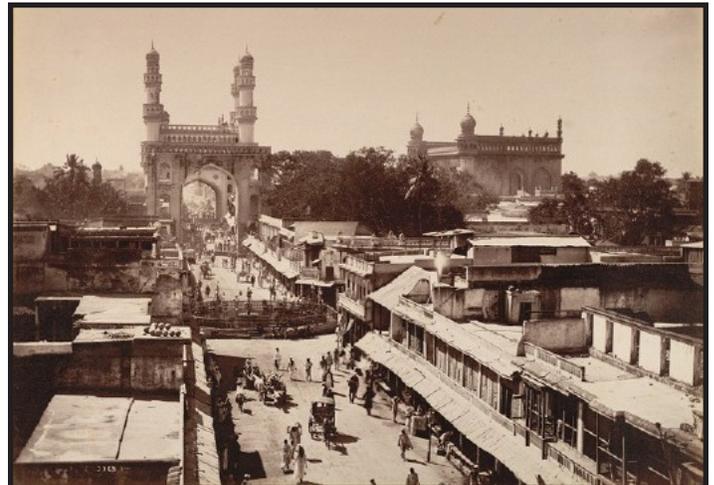
In 1959, when I was 15 years old, I graduated in first class in a state-wide examination. There are four classes based on marks earned in high school subjects, such as math, science, English, history, geography, etc. First: 60 percent and above; second: 40-60 percent; third: 30-40 percent; and failed: less than 30 percent. To commemorate my achievement, Father and Mother presented me with my first wristwatch.

The games we played varied throughout the year. Besides cricket, marbles, *kabaddi* (a contact sport), and *gillidanda* (a stick game), on 14 January, we flew kites on *Sankaranth*, the national kite flying holiday. In preparation, my close friend, Chalapathy and I rode our bikes nearly eight miles to the historic Charminar district to buy our kites and *manja*, a special thread coated with fine glass powder. We'd heard the rumors that the best kites and *manja* were available from Gulzar House, so that's where we went.

As the 14th dawned, I woke up eager to go out and fly my kite, to duel other kites in the sky so as to cut their threads with mine, and boast about how many I took down. Our whole family took part in this event.

Everyone flew kites from the rooftops of their houses in an

effort to be the last kite aloft. I shouted *Cutta* when my *manja* cut another's kite, sending it drifting to the ground and had a wonderful time.



Charminar



Holi

Coming home and telling my dad and mom that I'd cut 15-30 other kites before I lost mine was a typical claim. Kite flying was an all-day affair, from dawn to dusk with just enough time off to have breakfast and lunch.

There were religious holidays during the year that also prompted family and community celebrations. In February, we celebrated *Vasanth Panchami*, which was associated with doing a simple *puja*--prayer ritual Hindus perform--to honor the Goddess of Knowledge, Saraswati. Although we were not a religious family, my mother made special dishes and sweets to celebrate the occasions.

In March, we went out into the streets and threw various-colored powders and colored water on each other for *Holi*, the Festival of Colors. Huge piles of bright red, magenta, pink, green and blue ground rice powders could be bought everywhere. We went around the locality making sure we sprayed or splashed color on almost everyone we knew.

In April, we celebrated *Ram Navami* in honor of Lord Rama. We all went to our neighbor's house in the evening to listen to discourses on the mythological epic, *Ramayana*. The speeches always ended with the handing out of *prasad*, a small sweet offering in the name of Rama, which was always delicious.

In May/June we ate mangoes. There were many varieties, but the best were Apus, Badam, Malgoa, Peddarasalu, and Benishan. We bought them 100 at a time and would eat all of them over a week's time. During this period, we also went to the mango *mandi*, a market where mangoes were auctioned off. At 5 a.m. we could purchase the sourest mangoes to make the best *achar*, what we called pickles (but in no way resembling American pickles). Back at home, we'd spend the entire day chopping the mangoes into bits with a cleaver and then preparing four or five different recipes. Once mixed with the spices, we'd put them in large stone jars to age. This enabled us to eat them throughout the year.



Rakhi
During August, we held a special religious festival called *Raksha Bandhan*. In this celebration, sisters tie a special colorful thread bracelet called a *Rakhi* around the wrists of their brothers in exchange for a small amount of money, usually one rupee. The significance of this is that the brothers will always protect their sisters. My mother always made special dishes and sweets for the occasion.

That month, our neighbor, who was a school teacher, was very particular that all the 10-12-year-olds in Sattaya Blocks get up at 4 a.m. on 15 August, Indian Independence Day, to go for a walk around the neighborhood singing patriotic songs. We memorized many of these songs and felt very proud of our country and our leaders, Mahatma Gandhi and Jawaharlal Nehru.

In September, we celebrated *Ganesh Chaturthi* to the elephant god, Ganesh. We'd buy an idol made out of mud, offer sweets to it, and then in the evening, immerse the idol in a bucket of water. Today, large idols are immersed in lakes, reservoirs, and the ocean.

On 2 October, we always remembered Mahatma Gandhi's birthday by singing some of the hymns associated with him. It was a quiet day meant to remind us that he was "The Father of the Nation."

According to Wikipedia: "Mohandas Karamchand Gandhi, better known as Mahatma Gandhi, was assassinated at the Birla House (now Gandhi Smriti) in New Delhi on 30 January 1948. Gandhi was outside on the steps where a prayer meeting was going to take place, surrounded by a part of his family and some followers, when Nathuram Godse, a militant Hindu nationalist and prominent member of Hindu Mahasabha, approached and shot him three times in the chest at close range. At first shot, the foot that was in motion, when he was hit, came down. He still stood on his legs when the second shot rang out, and then collapsed. The last words, according to eye witnesses, were 'Ram, Ram.' Gandhi was taken back inside the Birla House, where he died."



Rangoli Diwali Greetings

In October or November, *Diwali*, the Hindu festival of Lights, signifies the victory of light over darkness, knowledge over ignorance, good over evil, and hope over despair. It is particularly associated with Lakshmi, the goddess of wealth, and marks the beginning of the fiscal year in India.

During major religious holidays, getting up very early in the morning to start the celebration was the norm. But Diwali was special. Roshni and I woke up around 3 a.m. when Mother would turn on our room lights to say, "It's Diwali!" She would remind us of the significance of the day from the mythology, *Ramayana*. We would gulp down our tea and then go through the ritual bath. Mother would make us sit one at a time on the pita, a flat wooden stool which had been decorated with *rangoli*, an elaborate design made with various colors of rice powder. She would perform a symbolic Hindu blessing called *arti* by presenting a plate holding *kumkum*, vermilion powder, an oil lamp with a lit wick, rice, and flowers and moving the plate three times in a circular motion in front of us. She would then pour a few drops of safflower oil on our heads and massage it into our scalps. We then rinsed ourselves by putting a little *shikakai* powder into our scalps. It stung our eyes



Diyas

and a bit remained in our hair. After the bath, we dressed up in new clothes smeared with a little vermilion powder and turmeric powder in one corner for good luck. Then came the favorite part: eating a variety of sweets prepared at home: *mysore pak*, *rava laddu*, coconut *barfi*, *badam cake*, *kaju katli*, *murrुकulu*, *shankarpali*, etc. After a hearty breakfast of sweets we would go out to “burst crackers” (fire off fireworks) while it was still dark outside. The main fireworks event would happen later that evening when the entire house would be illuminated by *diyas*. Earlier, we would prepare the *diyas*, small shallow, earthen discs filled with oil and a cotton wick. Lit at dusk, over 100 were placed all around the house and on the walls. In December, we celebrated Christmas. Father would take us in the car to see how the churches were illuminated.



December 9, 1953, he left for the United States on the “Teacher Exchange Program,” sanctioned by the U.S. and Indian governments. In this program, the two countries exchanged educators to teach and do research work at selected universities and laboratories. Father was selected to go to New Orleans to work as a research chemist at Southern Regional Research Labs. The journey was long and took over a month each way because he traveled by ship. I remember his send-off at Nampalli train station by all his superiors, colleagues, and subordinates who garlanded him as he boarded the train for Bombay. From there, he took the steamship *The Batory* to Southampton, England via the Suez Canal, Italy and France. He boarded the SS *Île de France* for the Atlantic crossing to New York. After disembarkation, he boarded a train for New Orleans.

He spent 13 months at SRRL, living in an apartment owned by Mrs. Hemard, who also lived there on South Hennesey Street. While in the U.S.A., my father was awarded some noteworthy patents, one of them being on the “Filtration Extraction Process.” In 1979 his work earned an award from the Andhra Pradesh Akademi of Sciences, an Osmania University Diamond Jubilee Award. The citation reads:

Born in 1908, Dr. B. S. Kulkarni had his post-graduate education at the Nagpur University and his Chemical Engineering training and Ph. D. research at the Indian Institute of Science, Bangalore, supplemented by technical field training in various factories. He was awarded his Ph. D. degree of the Bombay University in Applied Chemistry, together with the Sudborough Gold Medal for best research in 1939. In 1943, Dr. Kulkarni was appointed as Reader by the Osmania University to initiate technology courses in the Applied Chemistry Section of its Chemistry Department. This small section, starting with just 12 students, underwent tremendous expansion and development since 1947, until the next 12-15 years, the section became a full-fledged Department of Chemical Technology, finally functioning as a de facto College of Technology.



During most of this period, Dr. Kulkarni acted as Professor and Head of the Department and also as the Dean of the Faculty of Technology until his retirement in 1964. During this period also, Dr. Kulkarni was deputed by the Government of India to do research for some time at the Southern Regional Research Laboratory at New Orleans, Louisiana, U.S.A. where he helped develop the well-known Filtration-Extraction Process. Dr. Kulkarni published around 45 research papers in Indian and foreign journals. He has been a member of the Oil Technologists’ Association of India and also a founder member of the Indian Institute of Chemical Engineers and its Hyderabad Regional Centre. He was associated in various capacities with the Universities of Nagpur, Bombay, Madras, and Banaras.

While away, he wrote lovely, lengthy letters to us once a week without fail. Each letter took between 10-12 days to reach us. Mother read each one to us over and over again. She wrote back to him every week, and I always included a few sentences of my own. The only letter I have from him to a colleague in New Orleans was photo-copied by Jane Drake, the recipient's daughter and sent to me.

From: Dr. B. S. Kulkarni, 9 June 1955, Department of Chemical Technology, Osmania University
To: Mr. E. D'Aquin, Southern Regional Research Laboratory, New Orleans, Louisiana, USA

My dear friend,

We have just returned to Hyderabad from my father's village. Your precious letter with all its bulky contents (postage \$1.20) came thundering all the way from America to an Indian village farm. You can imagine what sensation it must have caused in the village gathering. They insisted on seeing what the author of the letter looked like, so I had to show them your photograph culling okras in the lab garden. Your letter was juicy, just the type I would expect from the great D'Aquin. The enclosures were very valuable. I am circulating among the university authorities the note of my departure in the SRRL newsletter. I had to translate every word of your letter to my father and mother.

My one-month's sojourn on the Indian countryside was almost an anti-climax to my stay in the U.S.A. We didn't go in our car because the car would have been completely spoilt in the hot sun and dust and bad roads. We made the journey partly by train, partly by bus and partly by bullock cart. I remembered you and wished you were in the bullock cart so that you would know what is rural India.

In my father's village, we walked straight into my younger brother's marriage. This younger brother of mine, a fine looking young fellow of 25 is a high school graduate who has some veterinary service and is now on the farm to help my old father. He is now nearly 70 but is as sturdy as if he had been fed on choicest steak all his life. The marriage was typically in the Indian Brahmin fashion, all negotiations taking place between the parents of the bride and the bridegroom. I was also consulted as one of the elders of the family on the suitability of the bride. We had to make a 150-mile journey by bus to the bride's house for the marriage, through one of the hottest parts of India in the month of May. I called it at 114 degrees for the bride.

On the way, we could see hundreds of poverty-stricken villages built of mud houses and huts, rolling in summer dust with lack of ordinary sanitation and seething with human population. That is rural India and that forms nearly 75% of the whole of India. If you had been with me in the bus, you would have seen the enormity of the task of uplifting these human millions to a reasonable standard of living. That is the task in which all of us are at present engaged like missionaries. And this is the kind of India the British scoundrels left behind as a legacy after their 200 years' colonial rule.

In general, we are making a fairly rapid progress with our first and second five-year plans. We have now definitely accepted the socialistic pattern of planned economy and social reconstruction and have definitely discarded the American pattern of free enterprise. Very few except Nehru and top economists and administrators understand what the "Socialist Pattern" means, but anyway, we are making a fairly rapid over-all progress with the basic needs.

Oil Industry and Filtration Extraction does not come under basic needs when we are busy creating steel plants, fertilizer plants and basic powerhouses. Naturally, there is not much activity in the oil field as I told you and Graci before. There are almost no American goods in the market and the few which are there are selling at exorbitant prices. Only yesterday I saw nylon expandable socks selling at 12 rupees (equivalent to \$12) per pair! They have come by re-export by Hong Kong. This is the result of your dollar supremacy.

Regarding the lab film which Knoepler took, I have just written to Dr. M. Sundaram, Secretary, Education Department, Embassy of India, Washington, DC to accept the film from you to safe onward transmission to me through the Embassy. So kindly, send that film to Dr. Sundaram and everything will be okay. It was very thoughtful of you and Nestor to have held up dispatch of the film until you consulted me. In the university department, of course I am the boss of the show, but the work is so different from carrying the hexane tins on the head. Now I am glued to the chair with a pile of files dealing with admission of students, appointment of staff, purchases of equipment, stock, registers and accounts and audit. Wife says I have again begun smoking during the last month because I could not

smoke before my father (in the village) out of respect, but after coming here, I have begun again.

Last month, while in the village, I had a nice letter from Graci. Dr. K. S. Murty was here with me as my guest in the month of April. I told him of his ungratefulness for all the help that you gave him. I am sure by now he has made necessary amends. I also received one letter from Mrs. Hemard. I am again writing to her. Why don't you please call on her once at least for my sake? I also just received a letter from Dr. Altschul, regarding the book he is writing on the Peanut Meal Proteins. I am, of course, writing to him, but if you want to meet him, please tell him that I shall do all that is possible in the matter.

Now again, please convey my best regards to all our friends: Mr. Gastrock, Dr. Pollard, Mr. Vix, Leo, Mr. Cravado, Mr. H. Mollison, Mr. Gaves, Pomensky, Mac, Kroepler, Miss Busby, Mr. Mason, Dr. Weaver, Mr. Spadaro, Dr. and Mrs. Skau, Joan and Leo's girlfriend, Mary, and all others. So also my best remembrance to Mrs. D'Aquin, Jane, Elizabeth and the little Nancy.

The other day I saw the film *Roman Holiday*, the Academy Award winner. Since I came through Genoa and Italy and all the scenes from the picture are from Italy, it struck me as so realistic, as if I am again in Italy. Don't miss this picture if it happens to run in New Orleans. I will keep on writing to you simply as a relaxation, whenever possible. Do the same to me, if it is no trouble. One dollar twenty cents for postage is not necessary every time. Ten cents will do. I just received Elizabeth's letter with the picture cutting. I shall deal with her and her letter shortly. – B. S. Kulkarni

Until my father returned in February of 1955, my mother constantly told my sister and me how much our father loved us and missed us, and that he would be back soon. Every evening, for about an hour before bedtime, she read to us a few pages out of the entire Hindu epics *Ramayana* and *Mahabharata*. I eagerly looked forward to this time because the stories were so fascinating. My mother made sure that she'd finished both epics before my father returned from the U.S.A.

In the summer of 1954, my mother took all of us to Bangalore, her birthplace. I remember seeing the first Cinemascope film, *The Robe* with Victor Mature as the leading actor. I also remember meeting several of my relatives, including cousins, aunts and uncles. As we grew older, my father installed a thatched roof over some wooden beams in the open courtyard of our home to provide an extra, shaded living space. He also installed a swing attached to the wooden beams beneath the thatch. Little did we know then that over the years, the thatched roof would become a perfect home for scorpions. Every time we would swing, several scorpions would fall down onto us. Being stung was part of growing up. Father taught us the remedy for neutralizing the sting. He took a small onion and squeezed the juice over the bite, which brought relief.

My father had an old Singer automobile before I was born. It might have resembled this. The story I grew up hearing



The Singer

about this car began with its lack of brakes and my father's ingenious way of handling the problem. He had a servant called Parashram whose main job was helping to stop the car when needed by jumping out the back door with a large rock and placing it under the back wheel. Parashram would go with Father to and from the university, loyally performing his task at Father's command: "Parashram! The rock!" One day, however, Parashram missed getting into the backseat before my father left the university. He was not aware that Parashram was missing until his command, "Parashram, the rock!" brought no response. The Singer ran into a wall at a low speed but received enough damage to prompt Father to replace it with an Austin.

Around the age of 12, my dad allowed me to bring it from the garage in the rear of our house to the front. Rather than start the car with the quipped electric starter, the challenge was to start it with the handle, a rod with a crank on it. I inserted it through the hole in the front bumper to engage the end of the handle with the crankshaft pulley on the engine.



The Austin

I had to acquire a certain knack to crank the handle with just enough force to get the engine running. The cranking activity continued even when my father bought a new, black Hindustan Ambassador in 1959 to replace the Austin. The ambassador had a gear shift next to the steering wheel and a curved windshield, which I thought was cool. I took great pride in keeping the car clean inside and out. One other activity my father got me interested in was stamp collecting. While in the United States, he bought a packet of used stamps and an album. That hobby helped me understand a lot more about the various countries in the world, their location and what their stamps looked like. My friends and I traded stamps, and I made it a point to go to the post office and buy first day covers, the day a new stamp was released.



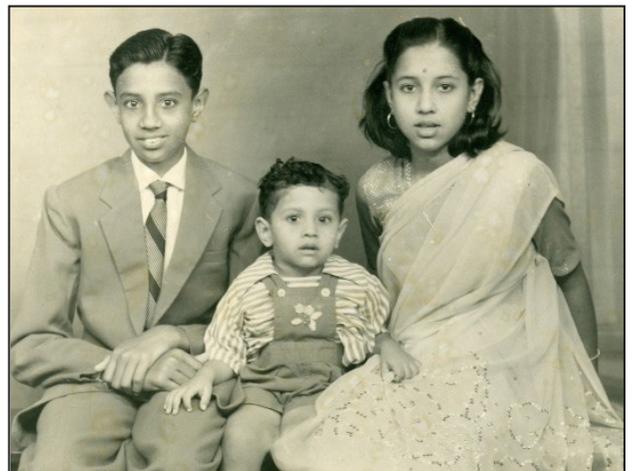
The Hindustan Ambassador. Our license plate number was APX 989. I have mounted the same metal numbers on a plaque in my Perry garage. The hole in the center front bumper is for the hand crank

On 16 October 1958, my brother, Vijay was born. My maternal grandmother, Thangadi, came from Bangalore for the birth. I recall her waking me up early, saying, “You have a baby brother!” Dad took us all to the hospital to see my mother and her newborn son.

The next day, I was taken to the hospital again because my parents had decided that this was a good time for the doctors to take out my tonsils, so that I could recuperate with my mother in her room. I remember fighting hard to prevent the nurse from putting a mask on me in the operating room. When the mask was put on, she added drops of ether or chloroform into it to knock me out. I woke up in my mother’s room with a very scratchy throat, but loved the frequent offerings of ice cream to ease the pain.

Having a baby growing up in our Sattaya Blocks house was a delight. Vijay was a very cuddly, bouncy baby and everyone in the locality loved him. His nickname was Boom Boom or Boomya. Dad had a concrete ramp built over the steps so we could get his pram in and out of the house.

Across from our house, Ram Murthy Renu, an engineer who worked in the office of All India Radio lived with his two daughters, the elder Rajalakshmi and the other, Sujata, who was about my age. Although I was afraid of girls at school, I began noticing her more and more. Chalapathy and I would talk about girls and Sujata while sitting outside our school teacher’s home. One evening, he overheard us talking and went to our fathers, complaining that we were “up to no good!” Chalapathy got soundly spanked by his father, and I dreaded that the same thing was in store for me. But it never happened. Later on, I found out from my mother that father had explained to the neighbor that these types of things are normal in adolescent children and that he should ignore it!



Suresh, Vijay, & Roshni

Although I thought Sujata was pretty, this was “puppy love.” I would catch glimpses of her in the evenings coming out of her home, watching what was happening on the street, and going back inside. One evening, I was standing outside and saw her come out of her house and begin walking towards me. I felt like my legs were going to buckle. She walked up and said, “I have come to borrow yesterday’s *Deccan Chronicle*.” I didn’t say a word, but went inside and brought it out to her. She took it without a word and walked back home.

Later, in the fall of 1967, I was at a wedding reception and saw her walk towards me again. She stopped in front of me and said, “I hear that you’re going to the USA.” All I could say in reply was, “Oh, yes.” I can’t believe that I’d spoken only those two words to her after all the years we lived across the road from each other, and that both times we’d met, she was the one who’d taken initiative to talk to me. What a fool!

Every summer, during the months of May and June, my parents took the whole family to my father’s ancestral village of

Borgaon in the state of Maharashtra. It was 300 miles from our home, which was in Hyderabad in the state of Andhra Pradesh. Traveling to Borgaon was an adventure. We took an overnight steam train from Kacheguda station to the town of Jalna, about 250 miles away at an average speed of 30 mph. At Jalna, we had to board a bus around 7 a.m. After riding 45 miles, we reached the village of Chikhli around 1 p.m.



Tatya Saheb

At my father's brother, Rajabhau's house, we each had a bath with a bucket of water. There was a well inside the house into which we'd drop a bucket tied by a rope down about 15 feet in order to pull up the water we needed. Afterwards, we'd eat lunch before returning to the bus station for the next six-mile ride to a stop that left us three miles from Borgaon. The last three miles were accomplished in one hour while riding on a bullock cart drawn by two bulls.

The thrilling—and terrifying—part of the bullock cart ride was when we reached the banks of the Penganga River, a tributary of the mighty Godavari River, just across from the village. The bullock cart road ran steeply down the bank into the river, which was shallow at that spot, so in order to get across and up the other side, the driver made the bulls run. We held on tight. You can imagine our exhilaration—and fear. Onlookers would always yell and shriek to welcome us “city slickers.”

Three hundred people lived in this tiny village without electricity or running water. We used kerosene lamps and lanterns to light up the house and to fetch water from the river for drinking, cooking, and bathing. It was very much like camping when we stayed in the village.

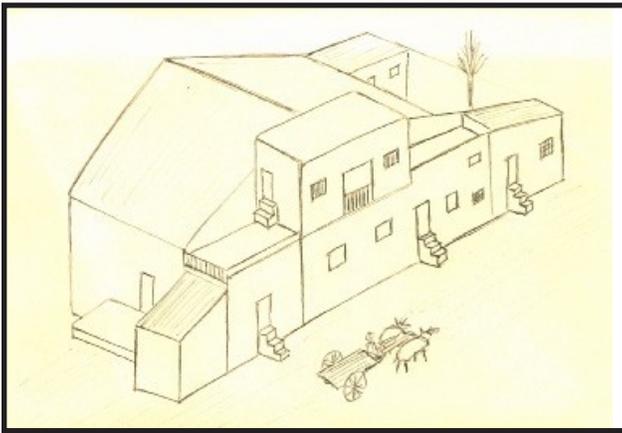
My grandfather, Tatya Saheb (Saheb is “Sir”—everyone called him by that name) was one of the most important leaders in Borgaon. He and my grandmother lived in a large home made up of bricks and mud, much like an adobe home in the southwestern United States. Tatya Saheb farmed 90 acres of land on which he grew fruit trees, such as mango, guava, tamarind and a unique fruit called “bare,” which I loved. His farm was about two miles from the house and I would walk over there everyday to see his other crops: wheat, cotton, sugarcane, garbanzo beans, legumes, and mangoes. The farm's mangoes were the choicest varieties, such as Malgoa, Apus, Badam, to name a few. And each mature tree would yield about 50,000 fruits! Tatya also owned several cows, bulls and bullock carts, as well as non-mechanized farming equipment, like ploughs. The family dog was a runt named Motya, and the cows and bulls also had been given names.



L-R Front: Balu (Vasant), Krishna; Back, L-R: My father, Rajabhau, Srinivas

Tatya Saheb had five sons and one daughter by three wives. His first wife, Veni, died before she had any children. His second wife, Satyabhama Devi Kolarkar, gave birth to two sons, Rajabhau and my father. She passed away when my father was very young. Tatya's third wife, the very loving Satyabham Devi called Bai, bore him four children: Srinivas, Krishna, Vasant (Balu), and daughter, Tara, who in her 20s died in the village from complications during childbirth.

Bai cared for all the children as her own, and all the children treated her like their own mother.



Drawing of Tatya Saheb's home in Borgaon

Tatya's expectation was that all his children and their families would come to Borgaon every summer after school ended and stay there for about a month, until just before the monsoon season began in early June and the Penganga River would flood the area. Throughout my early years, we did exactly that. It allowed me to bond with my uncles, aunts and cousins, as well as many of the villagers. Having so many people under one roof was great, even without electricity or a radio. We had no contact with the outside world, just an enjoyable time being together. Getting up in the morning, I brushed my teeth with toothpaste, while all my cousins brushed with a tiny *neem* tree stick crushed at the end. (Our family was the only one that lived in a large city with many amenities).

Because there was no indoor plumbing or latrines available, I took a *chumbu*, like the one pictured here, filled with water out to the field where I cleansed myself after doing my "morning business." After returning, I watched the women of the house busily preparing tea and food for breakfast and lunch. After our tea, we children played until around 8:30 a.m. when we had our breakfast. It usually consisted of mangoes and *chidwa*, a blend of roasted rice flakes, peanuts, dried lentils and coconut, with spices mixed together.



Chumbu

Around 9 a.m., the men and boys would head out to the river for our morning bath. We were required to throw sand and small rocks into the river before we waded in. "That's to make sure that the snakes in the river will head for the banks," Tatya Sahib said. I learned to swim in the river also, in the beginning with a hollow gourd tied onto my back to help me afloat.



Patravali

So they could bathe in privacy, the ladies used the bathing room inside the house, which was equipped with a water tank that a farmhand kept filled. Everyday, he'd drive a bullock cart, which had a large storage drum mounted onto it, down to the river and fill it with a bucket. Then he'd drive back to the house, empty the drum with the same bucket into the bathroom's tank and go back again. He repeated this several times a day.

After bathing, the men would collect broad circular leaves from a "Palash" bush (Botanical name: *Butea Monosterma*) that grows wild all year round. Back at home they'd wash the leaves and stitch six to eight together with tiny bamboo or wooden sticks to create circular plates, *patravali*, and bowls, *drona*, for our meal as shown below. After use, these were discarded to the earth for recycling. The children ate first, males second and the females last. Tatya sat with the children on the floor, making sure that none of us wasted any food. He always reminded us, "Take only what you can eat and no more."

Following lunch, we rested for two to three hours. On the floor in the main hall, the men laid down on *chatais*, woven bamboo mats, and the females would do the same thing but in the kitchen/dining area. At 3 p.m., we had tea, followed by the males discussing a variety of subjects or playing musical instruments like the sitar and tabla. The females brought out all the kerosene lamps to be cleaned and filled for the night. As darkness fell, a kerosene lamp or a lantern lit each room. We had dinner around 7 p.m. and by 8:30 p.m. everyone had gone to bed.

Whenever I was out on the farm, I'd go to pet the cows that grazed on the land. My parents and grandparents always warned me to be very careful, and especially to be on the lookout for snakes and scorpions.



One evening when I was eleven years old, I was walking home after a wonderful day on the farm. It was already getting dark. Suddenly, I heard a hissing sound in front of me and stopped still, not knowing what it was. Horrified, I saw a very large black-brown snake slowly slithering across my path about ten feet away. I froze, as it went by. That snake was a King Cobra. My estimate was that it was about 16 feet long. I saw its tongue flickering in and out of its mouth, tasting the air for prey. I'm so happy it decided to leave me alone, because King Cobras are among the most deadly snakes in the world.

King Cobra



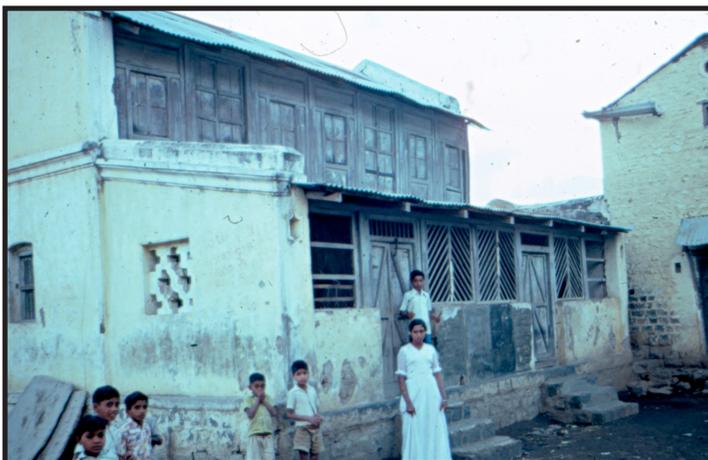
Once I was sure I was safe, I ran home to tell everyone about this encounter. They were very happy that I was safe and gave me big hugs. My grandmother believed that Sheshnag, the cobra god, had entered into me, so she set me up on a stool, and the people of the village filed by to worship. During one of my many visits to the village, I was saddened to learn that Tatya Saheb's farmhand, Asruba, had been bitten by a cobra while lifting a bale of hay in which a cobra was hidden. He was found dead sometime later.

When my grandmother, Thangadi was nearly ready to give birth to my mother in January of 1916, she went into the outhouse and saw a cobra there. Frightened for her life, she said to it, "If you don't bite me, I'll name my child after you." It slithered away, leaving her in labor. When she gave birth a few days later, she named her baby daughter, Nagamani, "the jewel of the cobra."

1977. Visited Tatya Saheb's home. Due to floods, the village had been abandoned. The ground floor—L-R: Anil, Chotu, and Balu



First floor—L-R: Sunita, Suchi, Chotu, Anil, and Balu



My father's school in the village with Suchi (front) and Chotu (back).

When my father left Borgaon and began attending high school in Chikhli, six miles away, he'd often have to swim across the river with his books strapped to his head to keep them dry. Eventually, the village was abandoned in the 1970s because of the damage caused by the yearly floods of the Penganga River. In 1977 when I visited Borgaon, I saw our ancestral home and the rest of the village in shambles. The abandonment of the village would have saddened Tatya Saheb because he loved Borgaon so much.

Since Tatya Saheb had smoked *Bidis*, a cheap Indian cigarette made of a rolled-up tobacco leaf, for many years, he developed throat cancer. My father persuaded him to move to Hyderabad for X-ray treatment, and I took him to the hospital regularly to get these treatments. But when it became evident that nothing was working, Tatya returned to Borgaon. At the end of his life, he could not swallow and laid on a *charpoy* (a wood-frame bed with rope strung in a woven pattern like the photo shows to support a mattress). Just before passing away, he motioned with his hand that he wanted to be placed on the ground so that he could be on *Bharat Mata*, Mother India. Then he died. When we received the telegram about his passing, my father gave up smoking, cold turkey.



Charpoy

In 1961, I learned that my parents had purchased a plot of land measuring 860 square yards for Rs 14,000 (about \$3,000 at that time) in a locality called Gagan Mahal Colony and just below a dam holding back the waters of a large tank or lake called Hussain Sagar. Our new house would be on a corner lot adjacent to the Lower Tank Bund Road.

Since I was an engineering student, my father expected me to be deeply involved in the design, architecture, and the building of our new home. He and I prepared the building maps, hired a contractor by the name of Gopiah, and went often to the Municipal Corporation of Hyderabad to get the needed permits as the construction proceeded. There was no one-stop shopping in those days. We had to go to the brickyard for bricks, the cement plant for cement, and sand yard for sand from the local River Musi. Every evening, after returning home from attending classes at Engineering College, I spent about an hour or two with my father at the building site to monitor progress and plan future effort.

My parents decided to name the house *Jyotsna*, a name given by Tatya Saheb to my sister, Roshni when she was born on Diwali, November 3, 1945. There is a tradition in India to name a home in this fashion because the daughter leaves the family after her wedding. She is considered to belong to her husband's family and rarely returns to her parents' home after marriage. The name *Jyotsna* was fashioned of steel grillwork and embedded into the brick and mortar facade to be prominently displayed.



Jyotsna – 1-2-597/1 Lower Tank Bund Road, Hyderabad, A. P. India 500029

Chapter Two

College Years in India

1959-1967



The first year in college, known as Pre-University Course (PUC), was my first exposure to a co-educational system. There were two girls in our class. Because we boys were scared of girls, we avoided talking to them. In the PUC exam, I scored over 98 percent in Math and Science (Physics and Chemistry), which enabled me to get into Engineering, a five-year course. I also received recognition for scoring the highest marks in chemistry. Both the PUC and the first year of Engineering (known as the PPC or Pre-Professional Course) were held in Nizam College about two miles from my home. The bicycle continued to be my mode of transportation. The second through the final year of Engineering was held on the Osmania University campus, about eight miles from home, so I took bus 51A.

Entering Nizam College for my first year was confusing, and a learning experience. There was a lot of freedom for what we could and could not do. For example, the teachers didn't care whether we attended class or not—it was up to us to show up. And they did not micromanage our lives like how we dressed, if we did our homework, arrived in class on time. But we know that our actions were judged by them and our final grade depended on how well we did our homework and performed on regular exams. Just because we were in college and expected to be responsible and grown up did not mean that we were not mischievous.

One time two or three of us put a firecracker with its wick attached to a lighted cigarette behind a blackboard. Our professor was writing on the board when the firecracker went off. His chalk flew out of his hand, his eyeglasses fell on the ground. He turned around, looked at the class and said, "Whoever did this are degenerate specimens of human society!" A physics professor by the name of Jacobs was walking by the classroom and he blamed Seshadri, my classmate, even though he had nothing to do with it. Jacobs announced that he would bar Seshadri from appearing for the exams. However, the matter ended well because Jacobs was Seshadri's neighbor and a friend of his father, Rajgopal, also a professor in the same university.

Relaxation with friends meant going to each others' homes by bicycle and talking about movies, songs, happenings at college, etc. Narasimha, bought a record player, he found out that his radio did not have the input jacks necessary to allow the record to be heard. So we would bring the record player to my house and play the 45 record over and over again. Yes, 45s were expensive and Narasimha could only afford one, the theme of the movie *Come September*. Friends coming into my home were a rarity. My father's demeanor was stern. He rarely showed much interest in them, their families or their activities. So naturally, I took this as a hint that if I were to meet with them, it had to be done outside our home. They nicknamed him, "Tiger," or "K. N. Singh," the famous Indian actor who, at that time, usually played the villain.

I really loved attending Engineering College. The courses were challenging and I studied hard. For the more difficult subjects, I'd come home and rewrite the notes I took in class along with additional information from the textbook to improve my understanding of the concepts. I also felt like I was in a fish bowl because all my professors watched me carefully. They knew I was the son of parents who were both Osmania professors, so they didn't make things easier for me.

In fact, they challenged me more and expected more out of me than they did my other classmates.

Travel by bus was a daily chore. I had to get up at 4 a.m., finish my homework, leave the house by 7:30 a.m. and walk to the bus stand, which was a mile away. I'd catch the bus at 8:30 and arrive at the university at 9:00. My classes began at 9:00 and concluded at 4:00 p.m. Then I'd catch the bus and arrive home by 5:30 p.m. To relax, I listened to music on the radio or visited friends in the locality and took part in religious festivals, such as Sankranth, Holi, and Diwali.

During that time, I developed strong friendships with many of my classmates, and we have remained close to this day. Some came from Little Flower High School, which extended back



12 August 1995: Front, L-R: Sharmila and Josh; Rear, L-R: Prabhaker, Seshadri, Khasimuddin, Hanumanth, Vishwas, Ashok & me

into our kindergarten days. I'm still in touch with 41 of them, including Ashok, Surender, Mehmood, Krishnamurthy, Nrupender, Vidyasagar, Narasimha, Ranga, Bhushan, Hanumanth, Seshadri, Prabhaker, Vishwas, Pruthvi, and Khasim. We call ourselves the "Langoti Brothers," meaning "diaper brothers."



It has been our custom since Sharmila's wedding in 1995 to meet for a reunion whenever any of our classmates' children get married. On 16 October 2016, prior to my younger daughter, Anjali and Chris Chase's wedding in Las Vegas, we hosted a breakfast for some of the Langoti brothers who could attend. L-R: Jayaraman, Seshadri, Hanumanth, Khasim, Pruthvi, Chris, Anjali, Suresh, Ranga, Vishwas, Charan, Prabhaker and Prasad. Missing friends from this photo: Ashok, Surender, Mehmood, Krishnamurthy, Nrupender, Vidyasagar, Narasimha, & Bhushan.

In our final college year, Narasimha, Prabhaker, and I decided to study together. We would meet at Prabhaker's house at 8:30 p.m. after dinner to study until 11:30. But there were some nights when we went for a movie, starting at 9:30, which ended at 11:30. Once the exams were over, we three decided to celebrate by going to one of the upscale restaurants, "Kwality" where they forced me to eat a piece of chicken. It was awful.

A significant event occurred during the third year engineering exam. When the results were announced, I found that I had scored top marks in every subject, except one—Thermodynamics. I had flunked that course (scored below 30 percent), which came as a shock to me and my parents. My father was furious that an injustice had been done. He appealed to the Vice Chancellor (VC) of the university, requesting that my answers should be re-evaluated by independent professors to verify that the low score was indeed correct. The VC agreed, and my own Thermodynamics professor and a visiting Peace Corps volunteer from the University of California at San Diego, Dr. Carl Gibson, went through my paper and discovered that there had been a mistake. I should have scored very high marks. The investigation revealed that my answer paper was sent to an external examiner, a professor in Calcutta, for grading. He had asked his student to grade my paper and the student ended up failing me. In spite of this finding, my "fail" grade could not be changed. I ended up taking the exam again six months later and easily passed it.

When I graduated "first class with distinction," ranking sixth of the top ten students in the entire state of Andhra Pradesh, the newspaper printed my name along with the nine others. To see my name printed on the front page was a real mind-blower! That was in March, 1965.

My father decided that I should do my Master's degree, a two-year course at the Indian Institute of Technology (IIT) in Kharagpur near Calcutta, about one thousand miles from my home, a 36-hour train journey. This IIT was the top engineering school in India and there was stiff competition for entrance. Each applicant had to go through a three-day exam: written for the first two days and oral for the third. There were five areas of specialty: Production, Industrial, Foundry, Machine Design, and Material Handling. Each area admitted only seven students. Production, the area I wanted to join had the highest demand because those graduates had the best job prospects. After the three-day exams, the selection committee posted the names of the candidates on the bulletin board. I had "woolies" in my stomach as I approached the board, thinking, "What if I didn't get selected?" But my name was there! I immediately sent a telegram home to my parents: "Successful!" It was June 1965.

In September of that year, I headed for Kharagpur by train. My first six months away from home for the first time were very lonely. I was terribly homesick, but soon I started to enjoy being independent and doing things without having to ask permission from my parents, whether it was buying clothes or going to a movie or out to eat at a restaurant. I did very well in my studies and also participated in many sports, such as badminton and table tennis, eventually becoming the captain of my dorm, J. C. Bose Hall's table tennis team. I made many lifelong friends—45 to be exact—many of whom I am still in frequent contact with to this day: Ramaswamy, Ponnuswamy, Shrikhande, Ramana Reddy, Jayaraman, Gopal, Avinash, Madan, Subramaniam and Narayanan, to name just a few. Our social life in Kharagpur involved going to a South Indian eatery on campus called “Nayars,” which served excellent *uttapuum*.

We would also cycle down six miles into town to eat *panipuri*, *pan* and Bengali sweets. Sometimes we would go to the Railway Officers Club called “South Institute” to see a movie. Because the cooks in our hostel used mustard oil, the food was practically inedible and very smelly. So four of us, Gopal, Ponnuswamy, Narayan and I told the warden of the hostel that we wanted to improve the food, and he agreed. We formed a team and introduced several South Indian dishes, replacing the mustard oil with safflower oil. The improvement in the menu was significant.

In September 1965, India and Pakistan went to war. Because IIT Kharagpur was the top technical institute in India, we were targeted for attack by Pakistani planes stationed in East Pakistan, now Bangladesh. We would come out of our classrooms to watch the Indian and Pakistani dogfights in the sky overhead. We saw three planes on fire that crashed a short distance away. We got on our bicycles and went to the spot where a Pakistani plane had crashed into a hut. The people in the hut were killed and so was the pilot of the plane.

It was horrifying to see their charred bodies. I brought back a piece of the jet too and it was in our Hyderabad home for years. Not sure what happened to it. The Indian authorities told us to darken all the hostel windows because Pakistan had dropped paratroopers in our area. Some of us decided to form a group armed with sticks to hunt for the paratroopers. The next day an Indian Army captain came to the campus with a captured paratrooper to tell us not to form vigilante groups because we were no match for them. They were armed with guns, knives, and grenades—our sticks would be useless.

Death in the Air

By Dr-Prof. Sadhana Kala, 13 September 2015

Chief Emeritus, and current Sr Consultant Ob & Gyn & Laproscopic-Surgery, Moolchand Medcity, Delhi. Used with permission.

The only classic dogfight between fighter aircraft, in all of the Indo-Pak wars, happened on the seventh of September 1965. It was also the day on which IAF lost the maximum number of aircraft to an enemy air raid. The morning broke clear and sparkling over Kalaikunda Air Base in West Bengal. Suddenly the calm was shattered by a deafening roar.

Six Sabre fighters charged-in strafing the airbase. No anti-aircraft guns fired: their muzzles were still inside the canvas covers to protect them from dew; no Indian aircraft were airborne. Flying a by-the-book racecourse pattern, the Sabres destroyed six aircraft, two Canberra and four Vampires. Then they went home.

Will the Sabre next attack Kolkata? Two Hunter fighters under the lead of Flt Lt Cooke mounted an air patrol near Kolkotta to ward off any such threat. A sudden commotion, an exigent voice in his earphones: “Kalaikunda air base is under Sabre-attack; do you have fuel to take on the attackers?”

“Yes,” said Cooke, though he had not much fuel, and rushed towards the base. Charging at 500 knots speed at 500 feet above ground, he spied four Sabres, three flying racecourse pattern to strafe the base and the fourth flying high to protect the three against Indian fighters. Ignoring the threat from the high flying Sabre, Cooke took on the Sabre on the strafing dive. But he was too fast and would overshoot the Sabre giving the Sabre a chance to come behind him and take a shot at him. So he pulled up high to cut down his speed. Then he saw another Sabre closing in behind him, getting ready to fire at him.

He turned sharply into this Sabre. And a dogfight ensued. The Sabre could turn much tighter, and Cooke's Hunter could accelerate and climb faster. The odds were even. Who would win this unto death combat? Soon they were in ‘scissors,’ turning into each other at lower and lower speeds, till they were turning at close to ‘stall’ speed – the speed at which the aircraft goes out of control.

They were losing altitude all the time, and now their wing tips were scrapping treetops in the turns. A stall at this altitude and the aircraft would crash into the ground before it could be recovered. This was a test of skill and of will and of nerve. They were crossing so close that they could see each other's face, eyeballs. No fear in either of those eyeballs. The Sabre pilot was good. Very good. But Cooke was better. Cooke managed to get just behind the Sabre, closing in at an angle. He fired a salvo at the Sabre. It got hit and "exploded into a ball of flame." Cooke pulled up sharply to avoid hitting the ground but even so went through the Sabre's debris. [According to a *Hindustan Times* article, Cooke said: "His name was Afzal. We were flying so close that I saw his name written on his white helmet."]

Now Cooke saw another Sabre maneuvering to get behind him to fire. He pulled up into a vertical climb, the Hunter standing on its tail, and at the top of the climb rotated the Hunter on a dime so that he was hurtling down in a vertical dive at the Sabre which had tried but failed to keep up with him. This dogfight was short. Cooke got behind the Sabre and began to fire. He hit the Sabre. But he had run out of High Explosive ammo and had only ball ammo that damaged the Sabre but did not cause an explosion. He was closing-in too fast. At 100 yards he had to break-off to avoid ramming into the Sabre.

A third Sabre now came charging at him. Cooke easily got the better of him and fired at him. Then his guns stopped: he had run out of ammo. The Sabre maneuvered violently, doing all sorts of aerobatics – loops, barrel rolls – to shake off Cooke. But Cooke stuck to him like a leech.

Finally the Sabre made a dash for the border. Out of ammo, all Cooke could do was to follow him till the Sabre crossed into Pakistan. Cooke's Air Speed Indicator (ASI) was reading zero because the system was damaged during the combat. How would he know if he was at the landing speed or too fast? He needed a Hunter to shepherd him to a landing. But he was running out of fuel and could not wait for one. A Boeing 707 was on the approach to land. Cooke cut in front of him and landed ahead of him. As Cooke came to the end of his landing run, his engine quit because of fuel starvation. He was barely able to clear the runway. No ladder. So Cooke jumped from the cockpit. Corporal Bhasin, a burly Sardar, gathered him in his arms like a baby. Cooke got a Veer Chakra (Vr C) for shooting down a Sabre. The PAF records later confirmed that the Sabre he had shot at was so badly damaged that it could not be repaired and had to be written off.

So in effect, he shot down two Sabres, the only Indian to have two 'kills.'* And he would have certainly shot down the third one had he not run out of ammo. Cooke's gun camera recording showed that he had engaged with all four Sabres at different stages of combat. PAF official war history claims that nine Hunters had jumped the four Sabres. "What better compliment," Cooke smiles wryly, "than for the enemy to acknowledge that the single I was equivalent to nine!"

"The enemy isn't seven feet tall, we believe," Cooke chuckles, "but what to do if the enemy believes you are nine feet tall!" Cooke left the IAF in 1967 and settled down near Brisbane, Australia. He was in India to participate in the Golden Jubilee of our 1965 victory. He visited his squadron, now flying Jaguars, on 07 September, the day of his classic combat in 1965, and presented them his VrC medal.



The Vir Chakra is awarded for acts of gallantry in the presence of the enemy, whether on land or at sea or in the air.

Collective dogfight memories 50 years later from my Kharagpur classmates:

- Woke up with a jet plane crashing. All of us rushed out and hopped on our bicycles, cycling towards the place of action. We saw a Pakistani plane sabre jet shot down by our Air Force. The Pakistani pilot was also inside, of course dead. Some of us collected some pieces of the jet as memoirs to tell our grand children. That day has come. India won this war and we too have nostalgic memories of the same. – *Gopal*
- I can never forget the gruesome sight! The fighter plane crashed and some pieces fell on a hut, burning it along with two persons inside the hut; one was a young boy burnt lying down in a running posture. The pilot, his name was Afzal Khan, was cut into three pieces! Along with everyone, I too cycled all the way into the jungles, did collect a memento of that fateful day—don't know what happened to it. Some of the undergraduate students had picked up major items, such as the pilot's helmet. The Air Force guys came and took it all away. – *TARamaswamy*
- We were in our cycles riding from class to hostel when this great event happened and not only did we follow it every bit, but went cycling all the way to see the wreckage and collect some parts of the crashed Sabre jet (if I remember rightly). But unfortunately in the evening, Air Force guys came and took away all that I could collect. Can we forget the

darkness with lights out in the night and how we had to catch up for the class by candle light? Glorious chapter in Indian History after the setback to China in 1962. – *Mani*

• How can we forget that morning when we witnessed fighter aircraft dog-fights, not once but twice. I didn't collect any piece. When the body of Afzal Khan, the pilot of the Sabre shot down by Flt Lt Cooke was recovered after the second raid, I believe he was wearing civilian clothes inside his flying overall and he had large amount of Indian currency with him. In case he had successfully ejected he would have easily mingled with locals and possibly would have never been captured. – *Ravi Kant Jain*

• I remember very well. The dog fight was great. I recollect that we brought a small piece of plane wing. I even remember the sky being illuminated to drop paratroopers and they being caught by locals. We were doing rounds in the nights during black out. – *MV Narayanan*

• I also vividly remember our bicycle trip to Kalaikunda and other details narrated by my friends. I remember to have seen the gnat of IAF striking the PAK sabre jet and the remains of the Pak pilot on a tree. It had rained heavily earlier. I did not collect any pieces of the felled plane. Black outs were also experienced by us. Thrilling to rejoice our Victory. – *KVSrinivasan*

• I join all of you in recollecting and reliving the vivid memories of the Kalaikunda air combat in Sept. 1965. I had also watched the dog fights in air in the morning and had gone to the fields in the afternoon with many of you on bicycle, where the sabre jet F-16 had crashed. I had also collected a bullet from the gun, which I had kept as a memento for many years. – *Ramesh Kherdekar*

In September of 2017, several Khargpur classmates and their wives met in Washington DC for a three-day 50th reunion.



L-R: Chittaranjan Das, Vijayasaradhi Kosaraju, Ramana Reddy, Subu Kota, Madan Aggarwal, Suresh Kulkarni, Balaram Reddy, Narayana Jayaraman, Prabhaker Gangasani, and MV Narayanan



L-R: Satya Aggarwal, Aruna Gangasani, Ratna Kosaraju, Rajalakshmi Narayanan, Ruby Das, Diane Kulkarni, Lalita Jayarman, Sumitra Reddy and Vicki Kota. Not shown: Balaram's late wife, Devasena

While finishing up my research work on Explosive Forming in June of 1967, I wrote to Martin Marietta Company in Denver, Colorado in the United States. I requested copies of technical papers in the same field in which I was doing research. The company forwarded my letter to the Chairman of the Mechanical Engineering Department at the University of Denver, Dr. A. A. Ezra. He wrote back to me, acknowledging my letter, asking if I would be interested in doing my Ph.D. at D.U. I told him that I was interested and in the next letter, he sent the application.

I sent my application and was offered a \$4400 per year scholarship. At the same time, Dr. Gibson, the Peace Corps volunteer, had returned to the U.S. and joined the faculty at the University of California in San Diego. He offered me a scholarship to join his university, to do my MS in Fluid Mechanics.

To decide which offer I should accept, I went to the United States Information Service in Hyderabad to study a U.S. map. I selected Denver because (1) the scholarship was to do a Ph.D., not an MS; and (2) Denver was located inland. I reasoned that I would be able to see more of the US during my college breaks. But travel to the U.S. from India was expensive, at least \$650 for a one-way ticket. My father did not want to pay my way. He said I shouldn't go there until I'd finished my Ph.D. and married in India.

Although I did not personally know the Nizam of Hyderabad (the maharajah), I wrote to him asking for a loan to buy my plane ticket. To my surprise, instead of a loan, I received the full amount from him as a gift!



Nizam Osmar Ali Pasha (1886–1967) was the seventh and last ruler of Hyderabad.

R E C E I P T .

Received the sum of Rs. 4,782/- (Rupees four thousand seven hundred and eighty two only) being the amount of my passage money to U.S.A., sanctioned by the Trustees of H.E.H. the Nizam's Charitable Trust, to enable me to join the University of ^{Denver} California, U.S.A., for M.S. in Mechanical Engineering, through my father Dr. B.S. Kulkarni, in India, in terms of letter of authority dated 8th September 1967 given by me in his favour.

Suresh B. Kulkarni
Date

To,
Sri Khaja Moimuddin, Treasurer,
H.E.H. the Nizam's Charitable Trust,
Sheik Ali Banda, Hyderabad-2 (A.P.), India

Sir, As desired by you, I am enclosing herewith the receipt duly signed by me, for the passage money sanctioned to me. I wish to express my deep gratitude to the Trustees of H.E.H. the Nizam's Charitable Trust and to you for the travel grant made available to me for my higher studies in the U.S.A.

Here I may add that when my preparations to join the California University were nearly complete, my Kharagpur Institute of Technology sponsored my admission to the Denver University, which also offered me a fellowship but a more useful subject for my postgraduate studies. I therefore, transferred my admission to the Denver University, with the approval of the California University authorities. I have since joined the Mechanics Division of the University of Denver, Denver, Colorado, U.S.A. for my postgraduate studies.

Yours faithfully
(Suresh B. Kulkarni)

Chapter Three

Studying in America

1967-1972



Our family photo was taken in August, just before I left for the U.S.

Fresh Off the Boat

1967

Flying to the U.S.A. on 13 September of 1967 was the third time I had been on an airplane. The first as a child, I flew to Nagpur during the Police Action with my mother and sister. And the second time was just weeks before leaving for America, when my parents told me to fly from Bangalore to Hyderabad to experience an Indian Airlines “Comet” jet. I was amazed that it took only an hour to travel the distance that usually took 24 hours by train.

My flight to Denver, Colorado cost about \$650 and was booked by a local travel agent working for Trade Wings. The Airline regulations required that I could take only one suitcase, weighing no more than 20 kilos (about 44 lbs) and one carry-on bag weighing no more than five kilos (10 lbs) or less. This weight restriction meant I had to be judicious in what I could pack. After many lists, I finally settled on the items listed below.

When we moved into our first home on Medoland Drive in Brigham City, Utah, we framed my handwritten list with the title, “In the Beginning” and posted it on our family room picture wall.

2 Tie Pins	4 <i>Agarbatti</i> (incense sticks)
4 Shirts	1 Pair of shoes
2 Suits	1 Pair of <i>chappals</i> (sandals)
2 Nightsuits	4 Ties
2 Sweaters	2 <i>Nirmal</i> —Hyderabad handicrafts (1 large, 1 small)
2 Bush Shirts	6 <i>Bidriware</i> —Silverwork on iron (2 big, 4 small)
3 Pants	1 <i>Sambar</i> powder packet
5 <i>Banions</i> (undershirts)	1 Banjara doll
6 <i>Chaddis</i> (briefs)	1 Raw silk piece
1 Bathrobe	1 <i>Achar</i> bottle (Mother’s mango pickle)
6 Handkerchiefs	1 <i>Kala masala</i> packet (curry powder from the village)
	1 <i>Jeera</i> packet (cumin)

The Cathay Pacific Airlines route chosen by my travel agent was via Tokyo, Japan, with entry into the United States through Honolulu, Hawaii. The airline in those days allowed international passengers 24-hour layovers with paid lodging in those layover cities at no additional expense. So I chose to stop in Calcutta, Bangkok, Tokyo and Los Angeles on my way to Denver. My father had prearranged with his New Orleans colleague, D’Quinn whose daughter, Jane, lived in L.A. for her to receive me at the airport and host me for my last layover.

Before I boarded the plane for the U.S., my father warned me, “Whatever you do, do not marry an American girl!”

My journey began on an AVRO-748 propeller Indian Airlines plane from Hyderabad to Calcutta with one-hour layovers in Vijayawada, Vishakapatnam, and Bhubaneshwar. This took all day. Finally, the airlines staff transported us to the luxurious Park Hotel in the heart of Calcutta for our 24-hour stay. The next leg of the trip was to Bangkok, Thailand on a Boeing 707 jet, operated by Cathay Pacific, based in Hong Kong. The interior of the international jet was so much more luxurious than the Indian Airlines plane, and I appreciated their beautiful Thai air hostesses.

Staying in Bangkok and Tokyo was my first exposure to foreign lands. I saw the major sights in both places, thanks to the hospitality of the airline. It was in Tokyo that I realized I might have a problem with food since I’m a strict vegetarian. I ate a lot of bread and butter.

Honolulu airport on 15 September 1967 was a collection of army trailers set up as a terminal. The entry into the U.S. was uneventful. I showed the immigration officer my passport, which had my student visa stamped on it and a sealed envelope containing my chest X-ray film provided by a U. S. Consulate-approved doctor in Hyderabad. Bringing the X-ray was the policy in those days to confirm passengers did not have tuberculosis or any other infectious disease. The immigration officer read the X-ray and declared me fit. He then stamped my passport, saying that I was admitted to the U.S.A. A few hours later, I landed in Los Angeles around 7 in the evening. Jane Drake was there to receive me. I’d been looking

forward to riding in an American car, but it turned out to be a German VW Bug! And Jane was wearing a very short mini-dress. When we got into the bug, I made it a point to look straight out of the passenger window, but she said, “How do you like my new dress?” I don’t recall what I said, because I was uncomfortable.

Jane lived with her husband, Vern, in the Hollywood hills in a beautiful home up on the side of the hill overlooking downtown LA. I had a guest room to myself with the same view. Jane told me that she worked for Jean Louis, the acclaimed costume designer for movie stars. While Vern was reserved, Jane was very outgoing. I’m not sure what Vern did as an occupation, but I got the impression that he was well-read and had recently begun to learn Russian.

The next day was Saturday. I woke up as usual around 5 a.m. I didn’t hear anyone moving around in the house, so I stayed in my room, waiting. Finally, around 2 p.m. I heard Jane in the kitchen. I walked down there and she greeted me, asking, “Did you find everything for your tea and breakfast?” Since guests are served by the hosts in an Indian home, I didn’t know what to say. We had some toast and fruit.

That evening, Jane and Vern took me to Disneyland. Jane’s sister, Liz went with us. She sat way too close to me when we were talking and once again, I felt uncomfortable. With all that was happening on my first full day in America, I felt like my brain couldn’t digest everything.

The next morning, Jane took me to a restaurant for breakfast with some friends of hers. At the time, I didn’t know that they were stars on popular TV programs. Sally Kellerman, played “Hot Lips Hoolihan” on the TV show *Mash* and Sally Field was the star of *The Flying Nun*.

First Steps in America

That afternoon, I flew from LA on Continental Airlines, “The Proud Bird with the Golden Tail” to Denver, landing at 6 p.m. Waiting for me at the airport was Mrs. Davies, a sweet older lady from the University of Denver’s Foreign Student office. She drove me to the YMCA (Young Men’s Christian Association) building where the university had arranged a room for me to stay the night. The clerk said the room cost was \$5, so I paid it out of the \$7.50 I had with me—the maximum amount the Reserve Bank of India allowed a student to carry outside of India. While I knew that I had to manage somehow, I was unprepared to give up \$5 the first night. With a mere \$2.50 left for the next day, I went to bed without dinner.



L-R : Vern, Suresh and Liz

My father had told me that it would be very easy for me to be a vegetarian in the U.S. “Next to the YMCA,” he said, “you’ll always find a Greyhound Bus Station. Go in and order a cheese sandwich and a glass of tomato or orange juice.” Sure enough, he was right, but when I paid the \$1.50 bill, I only had one dollar left.



With Dr. Arthur A. Ezra

Around 8 a.m. I boarded a local bus to get to the university. The fare was 25 cents. At 9 a.m. I found the Engineering Department where Dr. Arthur A. Ezra, the head of the department, greeted me. After the introductory niceties, I told him that I had no money left and wasn’t sure what to do next. “I’ll advance you your first month’s scholarship (\$242) right now, and you can stay in the men’s dorm free for a month, until you find your own apartment.” That afternoon, I moved into the men’s dorm. My first days in Denver were nearly over.

There were a number of firsts as I started my American education at D.U. I was shocked when I observed women smoking for the first time, and girls on campus wearing mini-skirts and sunbathing in bikinis on the university lawns. I couldn’t look at them. I experienced water and snow skiing with my D.U. American friends, and within three years, I finished my doctorate. In my course work, I had only two Bs and the rest were As.

I also bought my first car, a 1969 Mercury Cougar for \$2800 and performed a special *puja* before driving it off the lot. *The Rocky Mountain News* photographer took pictures for a newspaper story. Apparently, the ceremony was unique. Here's the text of the article as it appeared on Sunday, Dec. 1, 1968:

My first car, a 1969 Mercury Cougar



Performing my puja on the new car



Hindu Car Purchase Unique

By Warren Lowe—*The Denver Post*

Denver area car dealers have been delivering around 175 new automobiles to customers every business day this year. But it's highly doubtful if any such car delivery in Denver ever resulted in as much ceremony as one delivered to a University of Denver graduate student a few days ago.

The ceremony wasn't the simple signing of a few papers, acceptance of the keys, and driving away. This one took four lemons, a fresh coconut, powdered turmeric, paprika, incense sticks and roses. The DU student is Suresh B. Kulkarni, 24, whose home is in Hyderabad, India but who lives in Denver at 2212 Columbine Street.

Kulkarni followed the traditional Hindu ceremonies, passed down from generation to generation, to assure his new car would be free of all evil spirits. A similar ceremony is followed, he said, whenever a Hindu makes a large investment. And, buying a new car, by Indian standards, is a large investment.

Kulkarni was graduated from college in India and then was chosen to do graduate work in manufacturing processes—especially in the explosive method of forming metals—at DU. He is studying under a graduate research assistantship, which pays him about \$300 a month.

Knowing firsthand the shortage of automobiles and how expensive they are in India, Kulkarni decided if he should buy one in the US and then ship it back to India when he finishes his schooling here, it would bring him a small fortune. To insure he was getting a good deal, Kulkarni asked his faculty advisor, Dr. William Lawrence of DU's engineering faculty to go car shopping with him. He eventually wound up at Bill Lister's Vista Lincoln-Mercury, 5000 So. Broadway.

Salesman, Jay Jones of Lister's sales force was next up when the two walked into the salesroom, and he soon discovered he wasn't dealing with an ordinary shopper. Jones, a very businesslike and sedate man, admits freely that Kulkarni drove a hard bargain, but he couldn't help but blink a few times when the youthful Hindu said he would take the blue Cougar with the white vinyl top, provided they would supply a few extras.

The extras were those necessary for the ceremony. Also, the formal signing of the papers had to be completed at exactly high noon. Jones had the necessary ingredients on hand when Kulkarni and Dr. Lawrence arrived. Kulkarni took his "accessories" to the car, placed a lighted incense stick in a large bowl, and in the same bowl, mixed a paste of the turmeric, paprika, and a few drops of water.

He placed three spots of paste on each of the four lemons and the coconut. Then he applied a spot to the hood and trunk lid, the front and back bumper, and on each hubcap. Everyone watching then received a spot on his forehead (it felt like a small mustard plaster). Then the roses were intertwined in the grill and also received a spot of the paste. The lemons were placed one under each tire. He then drove the car ahead a few feet, squashing the lemons. “Now,” he said, “the evil spirits should be gone.”

Although automobiles are built in India, production is small—about 38,000 cars a year for a country of more than 600 million persons. A car built under Fiat franchise in India sells for about 20,000 rupees or about \$3,000 American. There’s no such thing as time payments. You make a deposit, equal to about \$800 U.S. dollars, wait two years for delivery and then pay the balance when your car finally is delivered.

Gasoline, now being refined in India, is expensive, costing about 70 American cents per gallon. Dr. Lawrence said while college professors in the U.S.—like most of us—would like to earn more, they’re better off than the Indian professors. It would take them their entire salary for two years to buy a new car.

Kulkarni couldn’t explain the significance of the articles used in the ceremony, but said it was the same as is used in his native town, some 400 miles east of Bombay. It’s a little hard, however, to understand just how they manage to roll a house, for instance, ahead a few feet to squash the lemons.

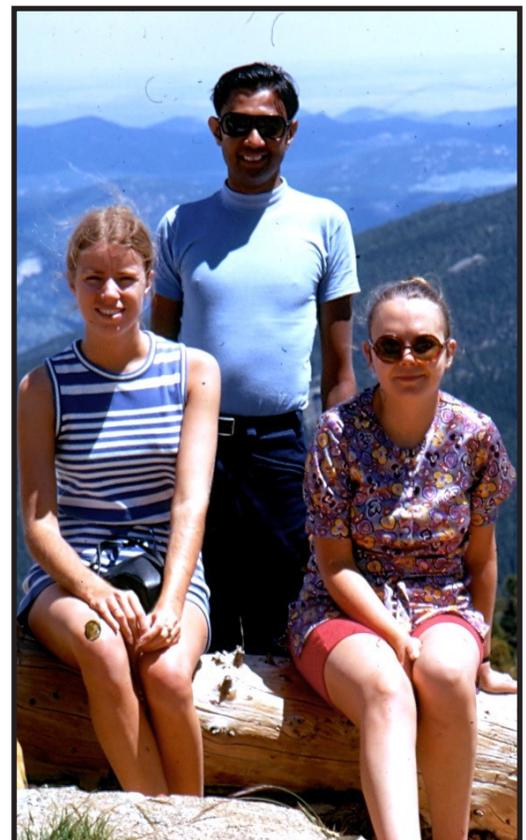
My Early University of Denver Days

My fear of talking to girls and women slowly began to subside as I became more and more exposed to them on campus and in the classroom. My close female friends, Valerie Gilbert and Deanna Miller would constantly tease me by asking me to look them in the eye when they spoke to me, and to address them by their first names, rather than by calling them “Miss” for example, which was the proper Indian way. They’d also give me a hug just to teach me the current American tradition of meeting and leaving close friends of both sexes. Other DU friends who were influential in my first years were: Mike Malcolm, Lloyd Gilbert, Bob Green, and Bill Lawrence.



L: Valerie.

R: Deanna with Diane and me.





Bob



Bill



Lloyd



Mike

Meeting Diane –Dinah

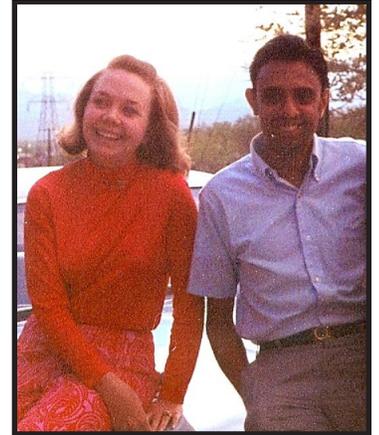
1969

In April of 1969, I met Diane McLaren, through my roommate, Prina Leepatanapan, who knew her from attending the college class activities at Calvary Temple, about a mile from the university. I had just finished my coursework for my Ph.D. and had begun work on my thesis, but Prina finally persuaded me to go to the church because “There are some good looking girls there.”

Prior to actually meeting Diane, I’d answered telephone calls from her off and on. The first time she called, she spoke slowly and deliberately, to be sure that I understood. “May I . . . speak to . . . Prina . . . Leepatanapan, please?”

I replied with humor, “What’s wrong with you? Can’t you speak English fast?”

I signed up for a Saturday picnic in the mountains, which the college class was hosting. Diane and her boyfriend, Gary, picked me up around 3 p.m. and we drove to the area which he had chosen. He was the organizer, so he left her with me to make sure all the arrangements were in place. Diane and I spent a lot of time that evening talking and learning about each other’s family lives. At one point, I held her hand to help her over some rough ground as we made our way to the picnic spot and felt a bolt of electricity go through me. By the end of the evening, we agreed to meet the following Monday evening for a spaghetti dinner at the Campus Lounge on University Blvd. I wanted to celebrate my coursework completion with her.



The next evening, Sunday, Diane came to the house where Prina and I lived unexpectedly, because there had been a downpour and a flash flood in the area that prevented her from reaching the church for an evening event. Prina was not at home, so I invited her in for a few leftovers from my previous evening’s meal. I wanted her to taste Indian cooking. She was polite about saying how good the food was, but I could tell she didn’t care for it.

As we were talking, I asked her out of the blue, “Why are you marrying Gary?” She didn’t have an answer. I didn’t realize at the time that she’d already made up her mind to break up with Gary because of me, even though we hardly knew each other. After returning home that rainy night, she found him waiting for her and told him, “I have found someone else!”

On Monday evening, I picked her up at her apartment for our dinner at the Campus Lounge. We enjoyed the food and had a good conversation. Then we drove out to Cherry Creek reservoir for a long walk before heading to a nightclub called The Party. While walking, we began holding hands, and at The Party, we shared our first kiss (which she made possible). We met three more evenings during the week and on Friday, 13 June, we went out dancing at the Rathskellar to celebrate my 25th birthday.

During one of the band’s breaks, I asked her a question. “Prina told me that you told him something important. What was it?”

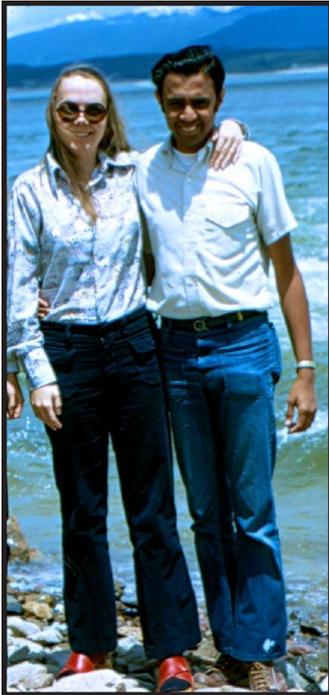
“I told him that I was going to marry you.”

I said, “Well, will you?”

And she replied. “Yes, I am.” That’s how we became engaged.

The next day we went to meet my close friends from the university, and their reaction to our engagement was guarded, even icy. They were very protective of me and felt that Diane had ulterior motives in getting engaged. They weren’t sure what her motives were, but they were worried. My Indian friends were equally displeased with our decision. I took Diane with me to the University of Wyoming in Laramie to watch a Hindi movie and our reception by the many Indian students there was not pleasant. The girls, especially, stared at her and no one spoke to us. I knew I had major hurdles ahead of me to convince my parents that Diane should be my wife.

The nature of the immense obstacle I faced was reinforced when my sister, Roshni arrived in Denver in September of 1969 for her medical internship at St. Luke's Hospital. Diane and I had set up the apartment that Roshni and I would share across from the hospital. Diane brought her flowers and I made dinner. When I brought Roshni home from the airport, I introduced her to Diane as "my fiancée," and Roshni backed away in horror, bursting into tears. "I want to go home! Now! How could you do this to our parents? They will never approve of this marriage!"



I took Diane back to her house and was able to calm Roshni down, believing that once she got to know Diane that she'd love her. While they eventually developed a close friendship, it didn't take away from the fact that Diane would never be acceptable to my parents. In our continuing exchange of letters, sometimes I'd include photos, a few included Diane and Roshni. My father sensed that I was becoming friendly with someone from the opposite sex, a girl named Dinah. He kept writing to me, cautioning me to be careful.

After completing my Ph.D. in 1970, I flew to Hyderabad in 1971 with the idea of finally getting my parents' permission to marry Diane and also looking for a job. On the way, I'd gone for an interview at Oxford University in England and was offered a teaching position for less money than I was making as a graduate student, so I turned the offer down. In Hyderabad, my college principal told me that since I had degrees from Osmania, Kharagpur and the USA, "You do not have an allegiance to any one place" and therefore could not offer me a teaching position.

At Kharagpur, the engineering department head told me, "The state of Bengal has come under communist rule and your PhD from the US is *not* an asset." The head of the aerospace division at ISRO (India Space Research Organization) in Trivandrum told me, "The funds to hire a department head for the high energy forming group are for a foreigner, and since you are an Indian citizen, you are not eligible." Finally, I approached Vikram Sarabhai, head of CSIR (Council of Scientific and Industrial Research) in New Delhi, and he told me, "I will give you a plumb job after you get five years experience in the US." Sarabhai passed away two years later while I was working at Thiokol.

On the home front, it was easy to talk to my mother, but she immediately broke down and said, "Your father will have a heart attack if you tell him, and this will ruin our family!" Discussions with my father were along the lines of probing to see if there was any soft spot in his heart which I might penetrate. For example, I asked him, since he and my mother had had a love marriage in 1943, why I couldn't have one? His answer was, "My marriage was not made in Hollywood," implying that any marriage in the U.S. was a fantasy and would not last. And he would talk about several well-to-do families in Hyderabad who were willing to offer their daughters to me in marriage, because I was a "highly eligible bachelor." By that he meant that I had a distinguished academic career with a master's degree from the very prestigious IIT Kharagpur, and a Ph.D. from a well-known university in America.

On very thin paper, a man wrote a letter to my father, including with it a black and white photo of his daughter. Dad forwarded both to me, hoping that I'd be interested in this potential bride and her father's grand plan for his new son-in-law.

Mr. _____, Industrialist, India

April 1971

Dear Sri. B. S. Kulkarni,

I thank you for your response to my advertisement, your letter dated 31 March. I give below my particulars for your kind information. I resigned my Govt. Service as a Mech. Engineer, after serving for 15 years in the former Government. I took my own industry in the year 1963 and established a steel forging plant in the HMT Industrial Estate, Bangalore, and have now settled down here from the past 8 years. I have three daughters and three sons, elders being daughters. My first daughter who is MA has been married. My son-in-law is M.Sc., Engg, and is working as an Engineer in HAL, Bangalore. My second daughter, for whom I am in search of suitable alliance, is BA (Hons) first class, height 5', aged 22 years, average in complexion. She learnt Vocal music and is learning instrumental (Veena). She is also learning French.

I hail from a village where I have still some lands and a house being looked after by my elder brother. I have two houses. I also possess some agricultural lands My unit has been quite flourishing and I felt If I could get a suitable, qualified and intelligent boy, he could as well assist me in industry. It would not be necessary for him to stay with me as he would be leading his own independent life, setting up his family separately and shall be free to have my guidance, if needed.

I also enclose a photograph of my daughter. I would like to know if your son is particular of settling down abroad, as I note from your letter that he is likely to be here on a short leave.

I have a total labor strength of about 100 and my monthly disbursement of salaries towards the establishment is about Rs. 20,000/-- and my yearly turnover is about 15 lakhs. I intend to put my youngest son in my industry. He will be in engineering classes next year as he is at present studying PUC. I am, therefore, interested if the boy I am searching for to be my second son-in-law would also have equal interest to plunge himself into industry, which has already been well set, to use his engineering qualifications and take practical experience I have in the field to improve the industry.

I am aged 47 and feel like imparting my knowledge and experience to one of my close kith and kin as he is expected to take equal interest and in turn impart the same to my youngest son who would join him after completing his academic qualifications. As regards the financial aspect, I can assure you, I am in a position to pay Rs. 1,000/- and above straightway, depending on his own ability. I am also confident with the qualifications your son has, with a little interest he can devote to the industry, he could improve the efficiency and draw much more.

I am, therefore, anxious that you and your Mrs. would make it convenient to go over here and spend a few days with us to have firsthand information and have further discussions, so that you may also be able to advise me in this regard, and you would also know our family environment and circumstances, if all the other things are agreeable to you. –Your's faithfully

And Dinah said, "What the *HECK* is this?"

Later, I came to know that my father had advertised for a bride for me in the local newspaper, *Deccan Chronicle* and the national newspapers, *The Hindu*, and the *Hindustan Times*, both of which have wide circulation. My mother told me that offers like the one above were coming in and that I was welcome to look at them and make my choice. I told her, "I am not for sale." That probably hurt her feelings a lot. I could tell that she'd become a buffer between me and my father.

Letter from my father--April 4, 1972 (Hyderabad) -- He knew about Dinah before this, although he doesn't ever mention her. He'd asked Roshni "Who is this Dinah and what's her family like?"

My dear Suresh,

Your mother and Vijju are at Bangalore (having left on 16th eve) and will be back on the morning of 25 April, probably along with Nagendra. Nagendra has gone there to attend some malaria conference. I remained behind as I am not permitted to travel, particularly in this terrible weather, and my diet schedule will be disturbed. Besides, there must be somebody to look after the house, particularly with the mangoes hanging on the trees; otherwise, everything in this house would be stolen.

I hope your security clearance will now be available without much delay. The Delhi American Embassy is approaching many persons for your character certificate and Dr. J. G. Kane writes that he has already sent one. Dr. Kane is now Professor Emeritus appointed by Govt. of India. Dr. Kaparthy also phoned to say that he had sent one. The Embassy also approached Nancy Bhaskar and Dr. Kane. Dr. Rammohan may also send in their testimonials. We were glad that you have now got a firm footing at the university with a regular salary rise and other benefits. It is also good news that your professor himself is opening a concern, offering you a good job. We can now take up seriously the problem of your marriage, which we have so far been postponing, as we felt that as long as you were on scholarships and fellowships, it would have been unwise for you to have the additional burden of a wife. You are now already 27 and it would not be advisable to postpone the problem anymore. As one gets older and older, the chances of getting a really good girl becomes smaller, and one's judgement to choose properly and wisely becomes impaired. Dr. Iyer of New York, 33, would not agree to marry Roshan and has now in desperation married some cheap Parsi girl, which gave his mother and father a heart attack and is now completely outcast by his reputed Madras family.

With your career and qualifications, you are entitled for a really top-class girl from a really respectable and well-to-do family. You can get a real class-one bride normally offered to IAS and ICS top officers and executives. Such a connection will not only ensure your future but will also elevate the reputation and prestige of our family. This is how reputed families are built up.

Already, many offers are coming and many more will come when it becomes known that you are in a good job. To have the best choice, we are proposing to put advertisements in *The Hindu* in Madras, the local *Deccan Chronicle*, and *The Hindustan Times* in Delhi. We shall compile all information together with the photographs of the girls. You can then have your selected choice out of say the best 8-10 girls. Dr. Mene followed the same procedure in the case of Shashi. And the selected cases, it will be required to send the bride's party your photographs also for their approval. Therefore, immediately send a dozen passport-size, bust photos with negatives. You have already disapproved Kadambari and Major Murthy's daughter, but you can have a second look along with the rest. Your mother is going to see personally a bunch of girls whose names have been proposed. This was one of her objectives of going to Bangalore. *Hindustan Times* will fetch offers from many good North Indian girls of Punjabi or UP blood.

I hope that you will give serious consideration to this matter as it is not good to postpone it any longer. We need not wait for Roshan's marriage as it will take its own time, when it is convenient for you and Roshan to come over here on a short leave. With a home set up with your bride there, it will be a pride and joy for us to pay a visit to you and your new home. The burden of your responsibility will also be lightened. So far, everything has gone so well with our family, it has tremendously gained in reputation and prestige with both of you being educated abroad. Your marriage with an equally reputed family will still advance the prestige and fame of your family. Rest ok., *yourdaddy*

In response to my father's letter--24 April, 1972

My dear Daddy,

I have been meaning to write to you for several weeks now concerning something I should have talked over with you while I was home last summer. My intention at that time was to speak openly to you and Mummy about it, but it did not take me long to realize that you were just recovering from the illness. Therefore, I did not want to upset you. However, the burden on my mind was so great that I did speak confidentially with Mummy and made her promise not to tell you anything until I told you about it.

I have been realizing that I am doing a wrong thing by keeping quiet ever since returning to Denver. After all, if I don't talk to you and Mummy about it, who else do I talk to? All along, this quiet was out of respect for you rather than from fear. Since the job situation has changed so drastically, in the past few days, I have begun to think seriously about my future. It is very likely that I will leave Denver and if I don't speak now, I will feel very frustrated for a long time to come.

When I first came to the U.S., you know how stubborn and narrow-minded I was concerning everything: eating habits, living habits, ideas about other people, etc. When I returned home last summer you noticed the change that I had undergone. Four years of living in this country and being always in the company of Americans had made me very open-minded. And because I was young and free, it was very easy for me to get molded into their way of thinking. It is but natural that I am accepting their way of life, but at the same time trying not to condemn ours.

Everything that I have done so far has always been with prior permission. The apartments I rented, the car I bought, the tape recorder I purchased are but a few examples. You are probably wondering why I am laying such groundwork. I am feeling many emotions at this moment. I wanted to speak openly but at the same time, I do not want to hurt your feelings in any way. The whole matter concerns a mutual friend of Roshan's and mine, Dinah, of whom you know and to whom you wrote a short note last year.

We met casually three years ago through my Thai friend, Prina. Our friendship has grown into one of deep affection for each other during this time. It is very hard to put down how and why this has happened. Perhaps it was because of her outlook on life, which was typically Indian: necessity of a close family structure, a conservative viewpoint, and a deep respect for you and Mummy even though she has never met you. When Roshan arrived to start her internship at St. Luke's, it was very important for me to find out how Roshan would accept her. Of course, she did not, but their friendship grew over that year. When it came time for Roshan to leave, they had become very close friends. In fact, they even wrote to each other regularly when Roshan was in Hyderabad.

Chetti was Dinah's choice for Roshni. She had been on the lookout for an Indian boy for Roshni and when I returned to Denver from Hyderabad, she confronted me with Chetti as a good match. Therefore, we entertained him very frequently in trying to determine his background and temperament. You gathered from my letters that I was for the match. Mainly because of the distance between Denver and Detroit, things are at a standstill. We would still like to see the match made.

I have been giving very deep thought lately as to how Dinah would be accepted by you and Mummy. The more I think, the more confused I am. This has shown up as frustration in all the letters that I have been writing to you. I am at fault for creating this barrier between us. Please forgive me for holding back so long.

I imagine that your first reaction will be one of anger. I feel angry at myself for doing this to you. Four years ago when I came to Denver, I would never have dreamed of getting involved with anybody, let alone an American girl. But when the relationship becomes closer than mere friendship and two people start finding that they have a lot in common and think more as a team, national origin is of secondary importance.

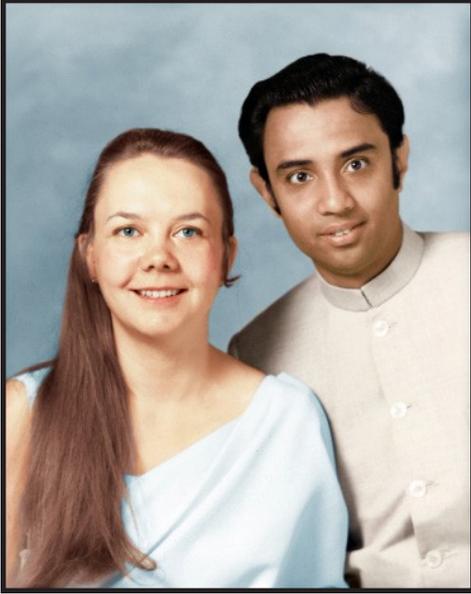
I try to think of the situation where I would have to pick an Indian girl based purely on the initial impression. I feel that I will be doing her great wrong in expecting her to conform to my way of life almost immediately. There should be a lot more than culture holding two people together. Culture does provide an understanding, but how does one guarantee that feelings will grow after marriage? A baby at the end of the first year of marriage is not the solution. Even in your case, you knew Mummy over a number of years before you married her. You had the opportunity to see her in different situations and weigh her reactions in comparison to what you would expect from somebody else. This in itself was a guarantee that life in the future would be peaceful with no unexpected turmoil.

Our marriage system is fine for a situation where there is very little mobility. The family ties are very close because the members tend to live in the same place for years. This is evident when I consider you and Mummy. You both have lived in Hyderabad for a number of years after you decided to settle down. This created a stable situation whereby you could remain in touch with all our relatives and keep track of their movements, which in turn was also stable. Now, how much interaction is there between Roshan and me, and say the children of Rajabhau, Krishna kaka and Balu? After we settle down, we might probably see them very rarely or not at all, because we don't know where we will be. This is one fact of a mobile society where the possibility of keeping track of all relatives becomes difficult.

Roshan and I are very fortunate that we have traveled so extensively in our young age and have become exposed to societies and people which were thought to be non-existent a few hundred years ago. Then in your case, the fact that you left Borgoan for Bangalore enabled you to meet Mummy who was from a completely different society at that time. If Roshan and I had not left India at all, in all likelihood, we would have done the same thing you did. Because mobility is becoming available to a growing number of young people all over the world, changes have to be expected. This mobility shows the greatest disadvantage when you don't even know who your neighbor is. This is what is happening here in the U.S. because people are constantly on the move. Surely the older generation here is relatively more stable than their children. For example, Graci and D'quinn are still living in the same place. But what about their children? I don't think it is possible to put down how much change parents expect from their children. It is become obvious that even Roshan's outlook on life is changing rapidly. It is not wrong, but should be expected.

There is one thing about which I would like to put your mind at rest. I have every intention of coming home as soon as time permits. This is one of the things that the Ford job has going for it. And since Hyderabad is the place where they are setting up their plant, I will most probably be traveling back and forth between Hyderabad and Detroit.

I feel very relieved that I have told you the only secret I had. I wish that you will not feel disappointed and let down. After all, I am still your son and love you and Mummy more than ever. *Suresh*



Our wedding picture taken at May D & F at Cherry Creek, Denver on June 23rd.

We Finally Made the Decision 1107 Days After Engagement

June 24, 1972

After returning from India in 1971, I'd told Diane that the permission from my parents would take a little more time and that I would continue to write to them regularly. She went along, but decided to go to Tulsa, Oklahoma for two semesters at college. However, she found that she couldn't concentrate and returned home and we continued dating. Her patience finally ran out about a year later. After getting our marriage license, we had our photo taken on June 23, and after dinner at my apartment, she said sweetly, "Are you going to marry me, Suresh? I don't think your parents will ever say 'Yes.'"

marry us." The next morning, she called around 8 a.m. and said, "I can't find anyone, so let's fly to Las Vegas and get married there."

My reply was, "That's going to cost a lot of money, which we don't have, so why don't you look in the Yellow Pages?" An hour later, she called back and said, "We are on for 1 p.m." After giving me the pastor's name and the location, she hung up to call as many of her family and our friends who could come. We were eloping to the office of a Methodist minister who advertised "Marriage: counseled and performed" in Wheat Ridge, not that far from her house in Lakewood.



To have and to hold from this day forward

After some thought, I said, "I agree with you. Let's get married tomorrow after you find someone to



Greeting friends and family before the service

tomorrow after you find someone to marry us." The next morning, she called around 8 a.m. and said, "I can't find anyone, so let's fly to Las Vegas and get married there." My reply was, "That's going to cost a lot of money, which we don't have, so why don't you look in the Yellow Pages?" An hour later, she called back and said, "We are on for 1 p.m." After giving me the pastor's name and the location, she hung up to call as many of her family and our friends who could come. We were eloping to the office of a Methodist minister who advertised "Marriage: counseled and performed" in Wheat Ridge, not that far from her house in Lakewood. I called my close friend, Bill Lawrence. "I'm going to get married at 1 p.m. today—will you be my best man?" He agreed, but said he'd have to wash his suit first. When I picked him up around noon, that suit had just come out of the dryer.

On our way, I stopped by WoolCo, a discount department store, to pick up a ring, which cost \$64.00. I didn't know Diane's size, so it had to be resized later. Then we drove over to the pastor's office, located above a liquor store on W. 38th Avenue.

I remember saying "I do" before the pastor finished his questions.

After a beautiful reception at Diane's grandmother's house, we had a light dinner and went to see the movie, *Skyjacked* with Charlton Heston. While waiting to get into the theater, Diane was planning how she'd get a new Social Security card and a driver's license with her new name: "Diane Kulkarni."

As soon as I woke up the next morning, I wrote this letter to my parents about our wedding. I called Roshni to tell her also, asking her not to call them because I wanted them to read my letter first. But she was very upset and without telling us, she called them anyway.

June 25, 1972 – Letter to my parents about our marriage. Dinah's note followed mine.

My dear Daddy and Mummy,

It has become very obvious from all of your letters that you have left the decision to me. Even talking with Roshan for long hours indicated the same thing. I have also talked at great length with all of my very close friends--Bob, Bill Lawrence, Valerie, Lloyd, etc. and had their counsel, too. I have met with most of the Indians here--men married to women from home and men married to women from here--and asked for their opinion. They all said the same thing: the final decision had to be mine.

It is not going to be easy for you to accept this, but I have married Dinah. I do not feel sorry for what I have done because it is my decision. I do not want to go through all the arguments in trying to justify it. I have not made the decision in haste. It has taken me three and a half years to do it.

Every time I have tried to explain the situation, it has been taken in the wrong context. Dinah is a girl capable of everything that an Indian girl is and maybe more. If you had the opportunity to know her, you would have certainly liked her. I'm also certain that you will accept her in time.

All I want now is for you to give us your blessing. I wish I could foresee what kind of emotions you will go through when you read this letter. It will be a lot easier on all of us if you would not make the traditional Indian decision of disowning me, but to continue to write and heal things. I will write to you very often and so will Dinah. I have also asked Bill Lawrence (who is himself a father of three children) to write to you. --*Suresh*

Dear Dr. and Mrs. Kulkarni,

We have long wanted your acceptance of our mutual love and devotion. Suresh has told me of the problems, but I feel confident that in time, I may be welcomed as Suresh's wife. He has told me much about you all and I feel that I love you as he does. We approached the decision to be wed with much hesitation--please know this. Your son loves you and I will try to win your love in time. Will you give me the opportunity? --*Dinah*

On 13 July, I received his letter addressed to: "Suresh (previously Kulkarni)"

Suresh,

I did not want to dirty my pen and paper by writing your name anymore, but after "your decision" and action, I have felt compelled to make you aware of "our decision," so that there should be no misunderstanding whatsoever about our relationship hereafter. In spite of repeated warnings of consequences, you have behaved in a way that has brought nothing but shame, disgrace and humiliation to us and the family. You have proved to be a thoroughly ungrateful wretch, showing an utter lack or sense of responsibility, either to your parents or your family or your country. You have also shown yourself devoid of the sense of seeing right from wrong, trying to make up for the lack of it by obstinacy and arrogance in a spirit of defiance.

In your life with us, you have at no time shown much evidence about your attachment or affection for the parents, family or the country. Now in your chosen reforming company of Bob's and Bill's, you are openly ridiculing anything that is Indian. Therefore, when you speak of love for us, you are only uttering a deceitful double-faced falsehood.

Any previous feelings we had for you have now completely dried up and died. The only feeling we have for you is of utter contempt, disgust and revulsion. We have therefore decided to have nothing to do with you hereafter. We are nobody to you and you are nobody to us. Considering the way you jeer at anything Indian, I am sure you will welcome it when I tell you that you will not be allowed to step into this Indian house where your erstwhile Indian parents reside in the Indian traditions.

You have also no more right to attached the Indian family name of Kulkarni after your name. In getting rid of you and having peace of mind hereafter, it will help if you do not carry out your threat of writing to us "very often," pestering

us to further harassment. If at least now you don't leave us in peace but persist in making a nuisance of yourself, clearly understand that your writing to us anymore will be a wasted effort, and your letters will be thrown away unopened.

P.S. I had repeatedly warned you against taking any wrong step. Therefore, the responsibility for the consequences flowing from your so-called decision squarely rests with you and your advisors Bob and Bill and your other consultants.

Chapter Four

Cut Off But Not Giving Up

1972 Onwards

"You have set yourselves a difficult task, but you will succeed if you persevere; and you will find a joy in overcoming obstacles. Remember, no effort that we make to attain something beautiful is ever lost."

– Helen Keller

The Honeymooners

Reading my dad's letter disowning me was very discouraging, but rather than heeding his threat of no longer reading my letters, I decided that I would continue to write to him and my mother weekly as I had been doing, with the hope that I would regain their support and blessing in the future. I was particularly concerned about my mother because I knew that she would not be able to stand up to my father. I also knew that she was the one who always retrieved the post (delivered mail) from the letter box on our house gate. I was also counting on my sister, Roshni, to communicate with them and to keep my mother informed about how we were doing even though my father may not want to know.

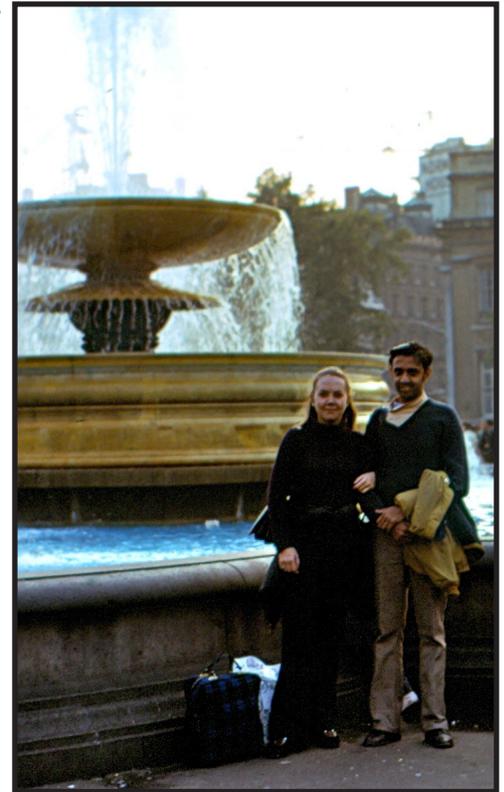
The day after our wedding, we took off for Aspen to spend a couple of days for our honeymoon. As we were approaching the area, we began to notice that all the hotels and motels had turned on their "No Vacancy" signs. Everything was booked because there was major convention going on, so we turned around and drove back home, a distance of 500 miles roundtrip.

A few weeks later, my best man, Bill, offered us his cottage on the shore of Pinckney Lake in Michigan, about an hour from Ann Arbor. A beautiful place was ours for a week, so we eagerly packed up our car and headed out there, a distance of 1100 miles from Denver. When we arrived, we found that Bill's wife and their three children were staying there for the summer. What a surprise!

In August, I learned that my technical paper, which was based on my PhD thesis, had been accepted for presentation at the University of Birmingham in England. My boss at DU was willing to pay all my expenses so that I could present it. Dinah and I took advantage of this and spent three wonderful weeks in the UK, touring London, Birmingham and surroundings. We boarded the Flying Scotsman in London for an overnight journey to Edinburgh. From there we took the train to Cardiff, Wales. We rode a bus part of the way and walked the rest to find Welsh singer, Tom Jones's birthplace, Pontypridd. Those three weeks were our official honeymoon--third time the charm.



Before wading into the icy Irish Sea



At Trafalgar Square, London

A few days after we returned home, I received a letter from Thiokol Corporation to interview for a design engineering position. The plant at Thiokol was 25 miles west of Brigham City, a small town in northern Utah with a population of about 14,000 people. When I asked for directions to the plant, I was told to drive west out of the city and when I felt like I was reaching the end of the earth, to "drive one more mile."

When Dinah, asked me what the place was like, I told her that it was just like Colorado, except that the mountains were on the wrong side (the east instead of the west where they are in Colorado). I was very confident that I had the job and was

absolutely stunned when I received a letter from the HR department, stating that I was not being offered the job because the "opening was not commensurate with my background."

Months later, I met a Thiokol engineer at a conference in Colorado Springs, and he told me to apply since the company was hiring. I told him what had happened after my interview, and he said, "Call the Head of the Engineering Department directly. His name is John Hinchman." When we spoke, John said, "I wanted to hire you, Suresh, but the HR department told me that since you are not a US citizen, you would not be able to get a security clearance."

"I already have the security clearance because of the work I am doing for Denver University."

"In that case," he said, "the job is yours and you will receive an offer shortly."

Thiokol's offer arrived a week after we returned from our honeymoon, so after accepting it, Dinah and I quickly began boxing up our belongings to load onto the moving van. We said goodbye to her mother and other family members, packed our car, including our cat, Sluggo, and began our 500-mile journey from Denver to Brigham City.

Once there, we checked into the Red Baron Motel, where the company had arranged for us to stay. All our expenses were paid for 30 days until we found a place of our own. With our realtor, George Mason, we visited several houses in town, most of which were old and the neighborhoods rundown, but finally we settled on a new build in a new neighborhood located at 868 No. Medoland Drive on the northeast end of town. The basement was unfinished, but upstairs we had two bedrooms, a kitchen, a living room and one bathroom. The house cost \$18,800 (\$21,375 with all fees and taxes). We put a down payment of \$1,025, signed the papers and received the house keys on November 10. Our payment at 8.25 percent would be \$160 per month for the next 30 years.

Because we had spent most of our savings on our honeymoon, we had to wait for my first month's paycheck to make the down payment.

On November 10, 1972, we moved in with a minimum of furniture, most of it secondhand, which we'd purchased at garage sales in Denver. I'd refinished our dining room table, and Dinah recovered the four dining room chairs. We'd bought two bedroom chests of drawers, two green chairs and a sofa sleeper from a man selling them in the Want Ads. I had a new queen-sized mattress and a 23-inch Sylvania color TV before we married.

The first week in our Medoland house, we purchased a refrigerator and a six-foot long brown, tan and orange-striped couch from the Bon Marche in Ogden.

But we put off buying a washer and dryer, because going to the laundromat once a week was not a problem. However, after Sharmila was born in 1974, we needed to wash and dry her diapers more often, so we finally bought our own machines.



Our first home: 868 N. Medoland Drive, Brigham City, Utah 84302

Remembering John Hinchman

28 Dec 2017

John Ralph Hinchman

July 19, 1935 ~ December 27, 2016

John Ralph Hinchman passed away at home December 27, 2016. He was born July 19, 1935, to Ralph and Claire Hinchman in Aurora, Illinois. John graduated from West Aurora High School. He then gained a bachelor's degree in Engineering Science from Purdue University. He also received a master's degree from Utah State University. John married Jeanne Boudreau in Aurora, Illinois, in September of 1957.

John's career was designing, and building, liquid and solid propelled rocket boosters; beginning as an engineer at Rocketdyne in California, and moving on to Project and Program Manager at Thiokol and TRW. John was a volunteer coach for little league baseball and Wasatch Front football. He was a "Grand Knight" in the Brigham City K of C chapter. John loved skiing and golfing, and enjoyed traveling, working on home improvement projects, attending the symphony and theatre, attending University of Utah women's gymnastics meets, working out at the gym, hiking, camping and fishing. He was a patron and supporter of the Ogden Symphony and Ballet Association.

John is survived by his wife, Jeanne; children: Susan (Joseph) Richards of Boise, Michael Hinchman of Roy, Andrew (Jennifer) Hinchman of Salt Lake City, Ann (Angelo) Roma of Hudson, New Hampshire; sister, Joan (Mike) Mols; brother, James Hinchman; and six granddaughters: Meghan Richards, Genevieve Richards, Alexis Hinchman, Brynne Hinchman, Hannah Hinchman and Jaime Nutt.

He is preceded in death by his parents and his son, Steven Hinchman.

An open house Celebration of Life will be held at his home, 4899 Knollwood Drive, Ogden, Utah, Thursday, December 29, 2016, from 4:30 to 6:30 p.m.

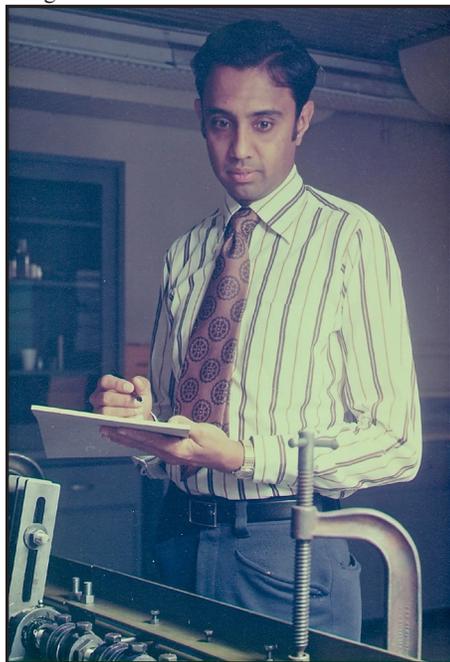
In lieu of flowers, donations to the Ogden Symphony and Ballet Association, Utah Golf Association or Lantern House would be greatly appreciated.

Arrangements under the direction of Leavitt's Mortuary, 836 36th Street, Ogden, Utah.

Please send condolences to the family at:
www.leavittsmortuary.com



1977: working on an elastomeric bearing design



The Beginning of Many Hours on State Road 83

On 23 October, 1972, I began work at Thiokol Corporation, which is located in the west desert near Promontory, a driving distance of approximately 30 miles from Brigham City, or 60 miles round trip. My badge number was 11427. When I retired in May of 2003, I had driven over 669,000 miles and spent 11,300 hours or 1.3 years driving on that road.

From day one, I had my own office since Thiokol's ground rule was that all employees with doctorate degrees had their own offices. I knew nothing about rockets when I joined the company, but as I gained experience, my responsibilities increased, and my superiors moved me around so that I could become familiar with all aspects of the rocket motor: its design, analysis, manufacturing, inspection, and testing.

Along with this experience came promotions, culminating in being given the top position as Vice President of Engineering in 1989, following the first launch of the Redesigned Solid Rocket Booster (RSRM) after the Challenger disaster. I reported directly to the general manager and oversaw the work of over 550 engineers.

Here is a brief overview of my career experience:

- **October 1971–October 1972:** Research Associate at the University of Denver, Denver, Colorado, USA, teaching courses to undergraduate/graduate students in the Mechanical Engineering field.
- **October 1972–April 1979:** Design Engineer conducting design, analysis and testing of a variety of components made for a variety of missile programs.
- **March 1984–June 1988:** Chief Engineer, Small ICBM, responsible for design, analysis, manufacture, testing and flight of the mobile Small ICBM first stage rocket motor.
- **June 1988–February 1989:** Manager, Inert Manufacturing Engineering responsible for the manufacture and production of all inert components (i.e., not containing propellant) for all programs, except the Space Shuttle.
- **February 1989–February 1997:** Vice President of Space Engineering responsible for all design and analysis activities for the Space Shuttle Solid Rocket Motors and the responsibility for providing the company go ahead for launch at Kennedy Space Center. Fifty-five Space Shuttle flights were launched successfully during this period.
- **February 1997–June 2003:** Vice President of Commercial Vehicle Programs—responsible for all design and analysis of strategic motors (Trident, Minuteman 3, Castor IV, GEM, etc.) and commercial launch vehicles (Athena, etc.).



My first office after promotion to VP of Engineering.
Diane Hansen was my secretary.

From a Legal Immigrant to a U.S. Citizen

I had come to the US on what was known as a Student F-1 Visa in September of 1967. After I landed, I had to apply for an Alien Registration Card, which looked like a credit card and had to carry this in my wallet at all times. I also had to register by law each January at the Immigration Office to inform them in writing of my current mailing address. Failure to do so was a criminal offense. The TV channels would broadcast this regularly in January, reminding all immigrants to register or be punished.

In the summer of 1969, my friend, Bob Green who also taught at the university, thought that both of us ought to visit Mexico City for the Christmas holidays. We started to check into what travel documents were required. Because Bob was a US citizen, he was only required to have a valid driver's license, but I needed a visa since I was a citizen of India. The visa application form, which I got from the Mexican Consulate in downtown Denver, required that I submit a police certificate from India, certifying that I did not have a criminal record. I knew that trying to get this certificate would take a lot of time, not to mention the time and effort my parents would have to expend to procure it for me.

So I asked the consular office if there was any other document they would accept. He told me that a Green Card would be acceptable as this would certify that I was a legal US immigrant. I went to the Immigration Office and told the officer that I wanted to apply for a Green Card. She gave me an application to fill out, which I did. She reviewed it and said I was qualified and then took my photograph with a Polaroid camera. A few minutes later, she handed me my Green Card. It was blue, so I asked her why it was called a Green Card. "It's always been blue," she said, "but we call it a Green Card." Even though I now had this card, we eventually decided not to go to Mexico.

I had no idea of the importance of having a Green Card, other than knowing that it made my travel in and out of the US very easy. When I went to India, my family and I were given preferential treatment on entry because I was an Indian citizen. At the airport, we went through the line designated, "Indian Citizens and Dependents." When we entered the US, we lined up with "US Citizens, Immigrants and Dependents."

In 1982, President Ronald Reagan decreed that all non-citizens in the US, who had a security clearance and were working on programs that involved the defense of the US had to apply for citizenship or find other employment. I recall receiving that letter. Another individual from Thiokol who was from the UK received the same letter. I went to the Immigration Office in Salt Lake City to pick up the citizenship application form, which was six pages long. It required a lot of supporting documentation, such as education certificates, certification of employment, Green Card information, and proof of residency.



downtown Salt Lake City on 10 January 1983.

I stood with the others and took an oath: "I hereby declare, on oath, that I absolutely and entirely renounce and abjure all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty, of whom or which I have heretofore been a subject or citizen; that I will support and defend the Constitution and laws of the United States of America." With those words, I felt like my umbilical cord to India had been cut.

A couple of weeks later, I was back at the Immigration Office with my application filled out, along with the supporting documents. The officer said that he had to make sure that the form was filled out correctly and began going through it, line by line. After the first page, he said, "That looks good." He said the same thing for the second and third pages and then remarked, "You know, I have not seen an application filled out correctly up to three pages. What do you do?" I told him that I was a rocket scientist and he said, "You know we have not seen anyone with your qualifications go through here in a long time. I will tell you right now that you are qualified to be a citizen." I passed the test and at a later date, the ceremony took place in a crowded room in the Federal Court House in



Chapter Five

From the Lowest Point to Great Heights

1989-1997



- The Space Shuttle program continued for 30 years, between 1972-2011
- The first flight: 12 April 1981
- The last flight: 8 July 2011
- There were 135 flights. The longest was 17 days, 15 hours
- Total cost: \$186 billion
- Two failures: Challenger on its 10th flight, 28 January 1986; and Columbia on its 28th mission, 1 February 2003

The Space Shuttle Challenger Disaster

23 January 1986

I had been working at Thiokol for 14 years prior to this tragic event. Little did I know that three years after the disaster, I'd be directly involved in the Space Shuttle program. I received a telephone call in 1989 from John Thirkill, General Manager of the Space Division, to meet with him. His exact words were: "I would like you to head up the Engineering organization because I think you can do it. Think about it and get back to me." I came away feeling totally overwhelmed by the enormity of the tasks I'd be asked to perform.

According to Wikipedia, "The Space Shuttle Challenger disaster occurred when the NASA Space Shuttle orbiter Challenger (OV-099) (mission STS-51-L) broke apart 73 seconds into its flight, leading to the deaths of its seven crew members, which included five NASA astronauts and two Payload Specialists. The spacecraft disintegrated over the Atlantic Ocean, off the coast of Cape Canaveral, Florida, at 11:39 EST (16:39 UTC).

Disintegration of the vehicle began after an O-ring seal in its right solid rocket booster (SRB) failed at liftoff. The O-ring was not designed to fly under unusually cold conditions as in this launch. Its failure caused a breach in the SRB joint it sealed, allowing pressurized burning gas from within the solid rocket motor to reach the outside and impinge upon the adjacent SRB aft field joint attachment hardware and external fuel tank. This led to the separation of the right-hand SRB's aft field joint attachment and the structural failure of the external tank. Aerodynamic forces broke up the orbiter.

The crew compartment and many other vehicle fragments were eventually recovered from the ocean floor after a lengthy search and recovery operation. The exact timing of the death of the crew is unknown; several crew members are known to have survived the initial breakup of the spacecraft. The shuttle had no escape system, and the impact of the crew compartment with the ocean surface was too violent to be survivable. However, it is unlikely that these ejection seats could have saved the astronauts' lives.

The disaster resulted in a 32-month hiatus in the shuttle program and the formation of the Rogers Commission, a special commission appointed by United States President Ronald Reagan to investigate the accident. The Rogers Commission found NASA's organizational culture and decision-making processes had been key contributing factors to the accident, with the agency violating its own safety rules. NASA managers had known since 1977 that contractor Morton Thiokol's design of the SRBs contained a potentially catastrophic flaw in the O-rings, but they had failed to address this problem properly. They also disregarded warnings (an example of "go fever") from engineers about the dangers of launching posed by the low temperatures of that morning, and failed to adequately report these technical concerns to their superiors.

As a result of the disaster, the Air Force decided to cancel its plans to use the Shuttle for classified military satellite launches from Vandenberg Air Force Base in California, deciding to use the Titan IV instead.

Approximately 17 percent of Americans witnessed the launch live because of the presence of [teacher] Payload Specialist Christa McAuliffe, who would have been the first teacher in space. Media coverage of the accident was extensive: one study reported that 85 percent of Americans surveyed had heard the news within an hour of the accident. The Challenger disaster has been used as a case study in many discussions of engineering safety and workplace ethics."

Remembering John Thirkill

8/31/2017

John D. Thirkill and Mary Lou Thirkill

John D. Thirkill passed away after a short illness in his home in South Ogden on August 31, 2017, following in death his wife of 67 years, Mary L. Thirkill.

They were high school sweethearts in Spokane, WA, marrying a few days after Mary Lou's graduation. Together, they embarked upon a life of adventure, world travel, and hard work, all this while raising three children and experiencing many challenges and joys on their journey.

John was dedicated to his work and had a long and successful career at Thiokol, Morton/Thiokol as a rocket engineer. He was involved in many of the key development projects for the company, including the Minuteman and Space Shuttle Booster programs.



He was also an avid outdoorsman, taking every possible opportunity to camp, hike, and ski with the family and could identify, and name, practically every trail and mountain in the western United States. Following his retirement from Thiokol and until this past winter, John could be found pursuing his greatest passion - skiing - with the same vigor and energy that he had put into his work - mostly at Snow Basin. He took great pride and joy in skiing and this he did practically every day of the ski season.

Mary Lou Thirkill passed away at home on July 23, 2017, after a long straggle with diabetes and an earlier stroke. She was a loving mother, a talented portrait artist, as well as an enthusiastic skier and tennis player, she excelled at just about everything she was interested in, but most of all, she loved to spend time with her many friends.

Dad and Mom are both gone from our lives now and we miss them. Mom's now probably relaxing and having a conversation with one of her close buddies (maybe even smoking a cigarette) while Dad is on the ski hill or climbing a mountain with one of his. Likely they're reunited with Denise (Denise Marie Thirkill - Green), who died at the young age of 52 on the first day of spring, March 20, 2017. She's probably out riding her Harley. We don't think Mom knew about that one but guess she does now.

John and Mary Lou are survived by their two sons, Dan (Cristina Goodwin) of Farmington; and David (Hollister Dinwiddie), of Falls Church, Virginia; son-in-law, Paul Green of Athens, Alabama; their seven grandchildren; three great-grandchildren; several nieces, nephews and their offspring. They will be greatly missed by their family and many friends.

A Celebration of Life is in the works and will be announced soon.

The Roger's Commission investigating the Challenger disaster was ordered by President Ronald Reagan. They found that "The space shuttle's solid rocket booster problem began with the faulty design of its joint as both NASA and contractor management first failed to recognize it as a problem, then failed to fix it, and finally accepted it as an acceptable flight risk." —*William Rogers, 14 members including Richard Feynman and astronaut Sally Ride*

Roger Mark Boisjoly was a mechanical engineer, fluid dynamicist, and an aerodynamicist with Morton Thiokol. He is best known for having raised strenuous objections to the launch of the Space Shuttle Challenger.

Robert Ebeling was one of five booster rocket engineers at NASA contractor Morton Thiokol who tried to stop the 1986 Challenger launch. They worried that cold temperatures overnight — the forecast said 18 degrees — would stiffen the rubber O-ring seals that prevent burning rocket fuel from leaking out of booster joints.

Ebeling gave was interviewed by National Public Radio 30 years later. He always believed that "Somebody should tell ... the truth." After his passing in March 2016, NASA released this statement: "The deaths of seven astronauts served to remind the space agency to remain vigilant and to listen to those like Mr. Ebeling who have the courage to speak up."

Rocket Man Gives Talk on Challenger Disaster

This news article was published following a presentation I gave to the University of West Virginia Engineering faculty and students

By Ben Conley, *The Dominion Post* —7 November 2017

MORGANTOWN—When Suresh Kulkarni arrived at work on Jan. 28, 1986, he was greeted by a distraught co-worker—Bob Ebeling who'd spent the previous evening trying to convince NASA to postpone that morning's Shuttle launch.

Kulkarni who worked at the same aerospace contractor as Ebeling, said his co-worker stood with his hands over his eyes, peeking reluctantly through the cracks between his fingers as Space Shuttle Challenger lifted off for the 10th and final time. America watched along with Ebeling as a booster engine failed 73 seconds into the flight. The resulting explosion killed all seven astronauts on board and forever changed the nation's space program.

An overflow crowd packed into an engineering lecture hall on November 6 to hear Kulkarni share his story as part of the [West Virginia University] WVU Lane Department of Computer Science and Electrical Engineering lecture series.

Unlike Ebeling, Kulkarni wasn't working on the Challenger launch project, but both men's lives were forever changed.

During his lecture, "Engineering Role Before and After the Space Shuttle Challenger Disaster," Kulkarni explained how the Challenger disaster would result in sweeping changes in the process leading up to final launch authorization.

"What changed after Challenger? The first thing that happened was they elevated engineering role in terms of who was going to be able to call the shots to fly," Kulkarni said.

During this time in that pressure-filled role, Kulkarni helped launch 55 successful flights, earning him the nickname Rocket Man. "The only person who could give the OK to turn on the rocket motor engine was me. They would not accept it from anybody else," Kulkarni said, explaining that about five minutes before launch he would be asked for a one-word directive—yes or no.

Significant Changes After Challenger:

The Flight Readiness Review

At the end of my nine-year tenure with the Shuttle program, I was responsible for 55 successful Space Shuttle launches between 1989-1997. This was significant for two reasons:

1. These were the most in number for which any single individual had responsibility to give the “Go-Ahead” for ignition of the solid rocket boosters for launch.
2. Each launch required an attention to detail and constant monitoring that was unprecedented in the rocket motor industry, because the Shuttle was “human rated,” i.e., humans had to be put into space and brought safely back to earth. Any discrepancy in flight or test data, or in the building of hardware that had not been seen before (referred to as “out of family”) had to be reviewed and approved by me.

The Flight Readiness process was significantly strengthened after the Challenger disaster in 1986. This required a series of steps that were implemented to assure flight safety, and consisted of the following.

1. Every component was meticulously examined during fabrication for discrepancies. Any that were considered “out of family,” i.e., out of design limits or first time occurrences or out of SPC limits were reviewed by me as V.P. of Engineering to ensure that the discrepancy would not impact flight safety.
2. After each segment of the rocket motor was fabricated—each motor had four segments—a pre-ship review was conducted with me as Chair before the segment was shipped by rail from Utah to Kennedy Space Center in Florida. In Florida, an Acceptance Review was conducted and the results documented to be reviewed and approved by me prior to stacking the segments.
3. Three weeks prior to launch, a Flight Readiness Review for just the solid rocket motors was conducted at NASA headquarters in Huntsville, Alabama by a Level Three Board, chaired by the NASA program manager and me as a member. All technical issues, discrepancy reports, and build details were discussed before a vote was taken to determine acceptability for flight. All board members representing various disciplines, such as Quality, Materials and Processes, System safety, etc. and typically ten in number, had to vote “Yes” for the Shuttle to be able to fly. A typical Level Three Review lasted a whole day.
4. A little over two weeks before launch, a Flight Readiness Review was conducted at Thiokol with the General Manager as the chair and all his direct reports (Vice Presidents of Engineering, Quality, Manufacturing, Test, Laboratory, System safety, etc.) as Board members. All needed to vote “yes” in order to commit the company to a flight of the solid rocket boosters. Any significant issue (called a UUEC or Unexpected Event or Condition) had to be presented by me to this Board because only I had the technical responsibility for giving the ‘yes’ or ‘no’ vote for Thiokol at Kennedy Space Center during the launch count down.
5. Two weeks before launch, a Flight Readiness Review, referred to as a Level One Review, was conducted at NASA headquarters, Kennedy Space Center in Florida. It was chaired by the NASA Associate Administrator for Flight from the Washington, D.C. headquarters and their board members, which included all directors of all NASA centers as well as an independent Director of Mission Assurance and System Safety. I was present for the solid rocket motors, along with other VP’s of Engineering in charge of components such as the Orbiter, External tank, Payload, etc. We had to make presentations to the board, going over every technical issue, discussing every anomaly seen in the previous flight, and then certifying in writing that our components were “safe to fly.” A typical Level One Review lasted three days.
6. Two days prior to launch, another review was conducted at Kennedy Space Center to ensure no technical issues had surfaced and that it was safe to fuel the external tank of the Space Shuttle assembly with liquid oxygen and hydrogen.
7. On the day of the launch, I had to be at the Kennedy Space Center console six hours prior to launch in order to review all the data, including temperatures, pressures, and operations of vital components in order to ensure that they were performing within specification limits. At predetermined critical times prior to launch (six hours, twenty minutes,

nine minutes, and five minutes) a poll was taken of me for the solid rocket motors and all other heads of engineering for various components to get their “Yes” or “No” vote to fly.

8 After the launch and the return of the boosters to earth, a thorough examination of the boosters by a joint NASA/ Thiokol “Post Flight Engineering Team” was carried out. The team meticulously examined every square inch of the boosters and all discrepancies that were not within design specification limits were documented and reviewed by me and my senior staff and presented at the next Flight Readiness Review.

The Challenger disaster resulted in several changes in the management of the program. A technical committee comprised of chief engineers of all of the major components on the Shuttle: Solid Rocket Motors, External Tank, Orbiter, Payload were given the responsibility to vote on proceeding to launch. This had not existed prior to and during the Challenger incident. As the countdown proceeded, each chief engineer was busy looking at the data coming from a variety of sensors on the launch pad Space Shuttle assembly to ensure they were within design limits and to give their vote, “Go,” or “No Go,” depending on the data they were evaluating. In addition to looking at the sensor data, the chief engineers were also in constant communication with their home plant engineers to ensure there were no issues with their components.

Were there any Shuttle launches that were scrubbed because of a “No” vote? Of course! I distinctly remember at least two times when I had to say no. The first one involved hot gasses reaching an O-ring in the nozzle joint on a previously flown motor than was being disassembled at the plant while the countdown was going on. I voted No until we fully understood what had happened on the previous flight.

The second time involved the wind conditions on the launch pad. Generally, the wind flows east to west along the launch pad and this does not put additional stress on the vehicle. But that particular day, the wind was blowing south to north and the additional load on the eight bolts that support the entire assembly had not been properly assessed by my engineers. I had no choice but to scrub the launch.

The best advice given to me by my general manager, Bob Lindstrom, was sound and I always remembered it. “Suresh, remember that the Shuttle is not getting off the ground unless you say Yes.”

Initiatives to Improve Communications and Transparency

- Establishment of a dedicated Engineering Organization to support space shuttle rocket motors
- Establishment of Engineering Review Board chaired by Engineering VP to listen to engineers’ concerns
- Establishment of a toll-free line at Thiokol and NASA maintaining anonymity
- Co-location of engineers in manufacturing areas as well as at KSC in Florida and MSFC in Huntsville, Alabama
 - Employee feedback survey every three years
 - Frequent astronaut visits
 - Weekly management walk-arounds
 - Extensive use of statistical process control—over 10,000 inspection points
 - Establishment of “Motor Mothers.”

Each Motor Mother had the responsibility to know the status of all paper and manufacturing activities on his or her assigned motor as it was being processed for flight.

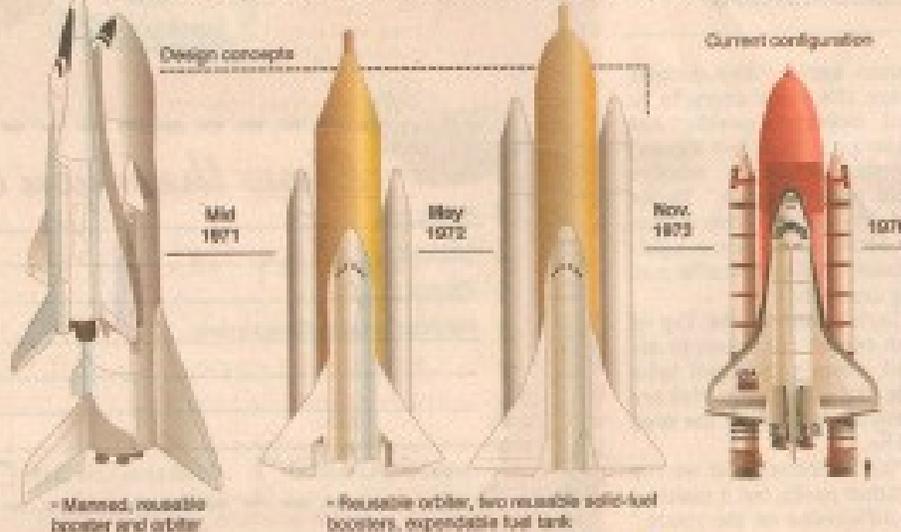
View from the Firing Room in the Launch Control Center at Kennedy Space Center.



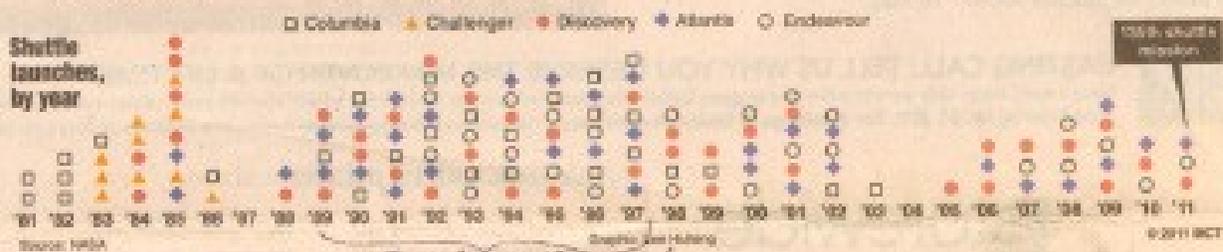
2011: THE END OF AN ERA

2011: Space shuttle's last odyssey

By the late 1950s, plans were under way at NASA to build a reusable space shuttle capable of carrying astronauts and cargo to and from a permanently manned space station. How the shuttle developed:



Shuttle	Delivery date
Enterprise	Sept. 1976
Originally named Constitution; used for landing tests but not flown in space	
Columbia	March 1979
First shuttle to fly into orbit, April 1981; last Feb. 1, 2011 during re-entry	
Challenger	July 1982
Named after 1870s British ship HMS Challenger; exploded shortly after launch Jan. 28, 1986	
Discovery	Nov. 1983
Carried Hubble Space Telescope into orbit in 1990; has flown the most shuttle missions	
Atlantis	April 1985
Deployed Arthur Holly Compton Gamma Ray Observatory in 1991	
Endeavour	May 1991
Challenger replacement, scheduled to make the last shuttle flight in April 2011	



With final shuttle missions on tap, troubled history recalled

By **MARK K. MATTHEWS**
The Orlando Sentinel

WASHINGTON — Two days before the space shuttle Challenger made its final flight, Carl McNair spoke to his brother Ron McNair on the telephone. It was mostly small talk: Super Bowl XX being played that day, William "Refrigerator" Perry, the weather.

"He said, 'The weather is not looking good and things are icing up and I don't think we are going to launch,'" recalled Carl McNair, who had come to Florida to watch his brother and six crew members launch into orbit.

So he headed home to Atlanta with his wife and father, expecting to return in a week to see his brother's second spaceflight. Instead, on a cold Tuesday morning 25 years ago, he turned on the television and "there it was, taking off. I couldn't believe it."

Surprise turned to horror just over a minute later.

"I stood there with tears streaming

down my eyes, saying, 'Oh my God, oh my God' — what so many people were saying in unison around the world."

A select commission led by former Secretary of State William Rogers concluded that a breach in an O-ring on a solid-fuel rocket booster allowed hot gases to escape and burn a hole in the shuttle's 15-story external fuel tank, causing it to explode.

The 36-degree weather at launch caused the O-ring to shrink and give hot gases a pathway to escape. Worse, NASA managers had known about, and dismissed, partial failures of O-rings in previous launches and also ignored prelaunch warnings about the rings' vulnerability in cold weather.

But it would take 17 years and the loss of another shuttle before NASA finally got the message. A report after the 2003 Columbia disaster noted that NASA failed to change a culture that often rewarded ambition over safety.

Columbia was doomed when a briefcase-sized chunk of insulating foam peeled off the shuttle's fuel tank

during launch and punched a hole in the heat-resistant tiles on the leading edge of the orbiter's left wing.

When searing gases generated by re-entry entered the orbiter through the hole in the wing, Columbia disintegrated over Texas, killing the seven crew members.

Foam had been falling off the fuel tank for years, gouging chunks out of the orbiter's heat-resistant tiles. But NASA engineers, lacking a solution to keep the foam in place, elected to ignore the issue.

Diane Vaughan, a Columbia University professor who researched the agency's culture after both Challenger and Columbia, said the loss of Columbia was especially painful to employees who had lived through Challenger. "They had felt they had truly fixed things," she said.

Discovery's next flight, now set for Feb. 24, has been delayed since early November because of cracks in five support rods in the center of the external fuel tank.

During my career, I received many recognitions. The most prized were:

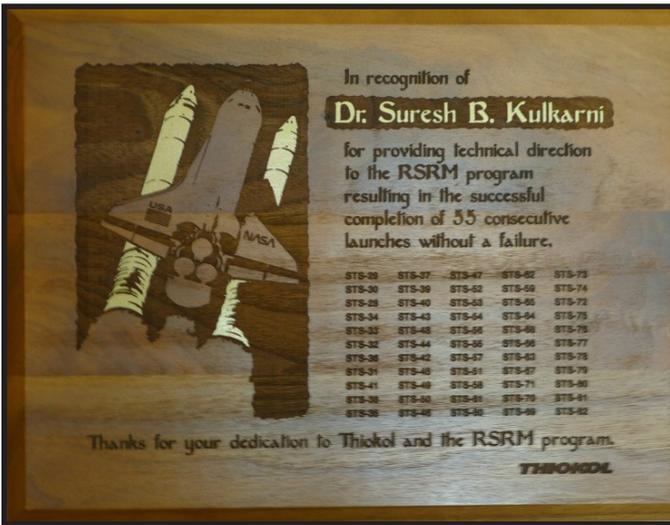


• **The Silver Snoopy Award.**
I received two in 1989. The first was given by Thiokol's General Manager, Joe Lombardo, the other by Dan Brandenstein, Head of the NASA Astronaut Office at Johnson Space Flight Center, Houston, Texas. Both

pins had flown aboard the Orbiter Atlantis on its May 4-8, 1989 flight. The award represents the astronauts' own recognition of excellence for outstanding achievements related to human flight safety or mission success.



With Dan Brandenstein



• **An laser-engraved wooden plaque given by Thiokol management at my retirement:**

“In recognition of Dr. Suresh B. Kulkarni for providing technical direction to the RSRM program resulting in the successful completion of 55 consecutive launches without a failure.”

• **NASA Flight Pins**, representing the 55 flights mentioned above, decorate this framed, counted cross-stitch gift. The cross-stitch was made for us by Joyce Speak, my colleague's wife, and the frame was designed and built by Josh Felix, my son-in-law. My family surprised me with this to celebrate my achievement.



Chapter Six

Life at Home in Brigham City



Sharmila was born September 16, 1974
at Cooley Memorial Hospital in Brigham City



Anjali was born January 23, 1979
at Brigham City Community Hospital

“First, we had each other. Then we had you.
Now we have everything.”

—Author Unknown

Raising a Family and Cultivating the Garden



Dinah and I moved into our home on November 10, 1972. Because we had only one car, a 1969 Mercury Cougar, it was important for me to find a carpool since Dinah was stuck in the house with our cat, Sluggo. It did not take me long to find a five-person carpool, so I only had to drive one day of the week. I would leave for work at 6:45 a.m. and after picking up the others, arrive at the plant 45 minutes later. Work began promptly at 7:40 with a half-hour lunch break, and we would leave the plant at 4:10 p.m. Dinah always had dinner ready.

Since we didn't have a yard at first, Dinah and I started work on it almost immediately, cleaning out weeds, removing rocks, etc. The next spring, we started to lay out a yard design. A friend of mine from work, Don Mason, had a little background in landscaping and the type of plants that would grow well in our arid area. Another friend, Jack Kapp, helped me design the sprinkler system layout. With these plans before us, Dinah and I went to work.

She was already familiar with how to use the shovel, which was good since in India, we didn't have that tool. I was used to the *sabbal* (crowbar) and the *phoudah* (hoe with a short handle). So she dug the trenches for the water lines, and I put in the PVC pipe for the sprinklers. Finally, on a Saturday afternoon, we were ready to make the final connection to the water line with a 3/4 inch union, which I did not have. We got into the car and drove 30 miles south to Ogden to buy it, but the store did not have it in stock. The manager said that his other store in Logan, 65 miles northeast of Ogden might have it. So we drove back to Brigham on Highway 89 (I-15 was not completed at that time between Ogden and Brigham City). We took the turnoff at 1100 South toward Logan. I bought the part, drove home, and hooked up the sprinkler lines. Everything worked. It was hard to believe that we drove almost 200 miles that day for a five-cent part!

With sprinklers working, we were able to plant the grass seed. The morning after we planted and left the ground well-watered, we woke up to find several horses turning all our hard work in the front into a mushy pit. They had somehow found a way out of their corral at the end of our road and wandered over to see what we had been doing. After checking the pipes for damage, we replanted. By the next year, we had a beautiful lawn and I had begun work on developing a vegetable garden in the backyard.



I found gardening and yard work very relaxing after a hard day's work and on the weekends when I could take advantage of the early morning hours. In 1977, our yard and garden won the Yard of the Month, and later the Yard of the Year Award given by the Kiwanis Club. Our yard was declared the best in town.



In 1978, we were one of the yards selected for the Spade and Hope Garden tour. While wandering through the vegetable garden, a sheriff's deputy stopped suddenly and bent over to look closer at the *ambada* plants that were growing—because apparently the leaves closely resembled pot and he had to be sure we weren't growing it.

In January of 1974, Dinah thought she had become gravely ill and went to the doctor for help. His diagnosis? She was pregnant! Her due date was early September. To say we were surprised is an understatement and from that moment on, our lives changed. Everything centered on this coming baby. We didn't know if she was a girl or a boy (there was no ultra sound back then), so to be safe, Dinah chose a circus theme for the nursery.

On 5 July, two months before Sharmila was born, Dinah's mother, Winnie, called to say that she was taking the Greyhound Bus from Denver for the weekend so she could help set up and stock the nursery. Early on 7 July, however, Winnie suffered a massive cerebral hemorrhage and died a few hours later. We were so shocked and devastated and immediately left for Denver to be with Dinah's family. We wrote home to tell my parents about this horrible event. My mother wrote back a few days later, breaking the two-year silence between us.

My dear Suresh and Diana,

28 July 1974

Received Diana's letter yesterday and also Roshni's about the sudden demise of Diana's mother. I felt miserable and extremely grieved. I can quite understand the agony that Diana must have undergone losing her mother, especially when she is in this state, expecting her first baby. I really feel that I am of no use, especially from this distance, to relieve the pain and sorrow that she is undergoing. Shuru, you must be more kind and loving towards her.

I have been making up my mind for the last few months to end all this nonsense and write to you. As you know, I am not very good at letter writing. I did not know how to start it on the day we received your telegram about the news of Diana's pregnancy. I felt so happy and thought that this child will achieve now what I could not do. Both of you should be in a very happy state of mind now and the child should be brought up in the most loving surroundings.

It looks so strange that both of you are so far from us. Sometimes I wonder whether this world is real or not. With love to both of you, *Your Mummy*.

My dear Shuru and Dinah,

23 August 1974

Was very happy to read all about yourselves and that you hold a very satisfactory job and you like it. From the description, your house must be very picturesque. Waiting to get your photos. About the name for the baby, Sharmila is quite pretty. Some from which you can select will be Mallika, Renu, Radhika, Surekha, Sulak shana, Ambika. For a boy, you could choose Vikram, Surender, Ramesh, Sanjay, etc.

By-the-by Dinah, calling me Mrs. Kulkarni sounds very formal, so kindly accept me as your mother..... With love, *Mummy*.

Welcoming Sharmila into the World

16 September 1974



On 16 September at 4:46 p.m., Sharmila was born at Cooley Memorial Hospital on 1st East in Brigham City. I was able to photograph her birth and homecoming. She had jaundice for a few days, so she and Diane stayed in the hospital. As soon as she was born, I sent a telegram to my parents, notifying them of

her birth and the name we had given her. Days later, we received a letter from my mother congratulating us. That letter was such a joy to Dinah and me! We quickly sent her pictures.

When we brought Sharmila home, we experienced a huge change in our lifestyle—we no longer did what we pleased whenever we wanted, but our every effort was focused on her needs and what was best for her. She needed our attention 24/7. I remember the first night that she was at home, I walked her and tried to calm her crying by sitting on the couch and rocking her back and forth and patting her back. That did not work well, so the next day we went to Blacker's Furniture in Willard to buy a La-Z-Boy rocker/recliner. This greatly improved my job of rocking her to sleep.

We both had taken a delight in buying her crib and other furniture and in decorating the room in preparation for her arrival. Dinah stitched the window curtains for me to hang. I bathed her and learned how to put on her cloth diapers although Dinah had to do the cleanup first. Disposable diapers were not available, so washing and drying at the laundromat became a daily chore.

My Dear Suresh and Diana, Read your two letters and the crochet book. Your letters are really a joy to read. Your house is lovely, each bit of furniture looks grand. I am so happy to see all this at last in the lovely photos you have sent. The most beautiful of all these is darling Shammi. Is that the short name you have for Sharmila? I must come and see you all in these beautiful surroundings and share your happiness Wish you all long life and contentedness. With lots of love, *Mummy*

Our last trip to India in 1988, when Sharmila was 13, was a turning point for her when it came to visiting India. At home in Brigham City, she enjoyed meeting friends, TV soap operas, MTV music, and talking on the telephone. India had one TV channel that came on in the evenings with farm reports and an episode of *I Love Lucy*, the telephone was rarely used, and she had nobody with whom she could talk about her favorite topics.

I remember the time when we were going to go for a walk on the Tank Bund and my mother wanted her to wear Indian clothes. She wanted to wear her shorts and there was a standoff. I relented and she wore her shorts and walked well ahead of us. This caused quite a stir on the road, as other walkers were craning their necks, and bicycle riders were turning to look back at her, many colliding in the process.

After we returned from that trip, we received a telephone call in the middle of the night from a boy in our locality in Hyderabad. He was calling to ask for my permission to marry Sharmila.; she hadn't even turned 14 yet! I quickly ended his hopes.



1977: Mother brought Dinah this beautiful wedding sari, s gold necklace, earrings, bangles and a pearl necklace

My Mother's First Visit, 1976



I knew that Mother would retire in 1976 at age 60, the mandatory retirement age in India. So we started laying the groundwork for giving her a retirement gift, a roundtrip plane ticket to come and spend time with us. Fortunately, my sister, Roshni was in India throughout 1976, so she was able to take care of my father and brother while Mother was with us.

The paperwork required to make this trip happen was horrendous. I had to provide a letter of employment, a letter from the bank stating the amount we had in our checking account, a letter certifying that I would be financially responsible for her during her stay, called the "Affidavit of Support" in addition to getting her visitor's health insurance. I then asked my friend, Chris Bolieau who had a cousin in New York if she could receive my mother at Kennedy Airport and guide her to the proper terminal where she'd board the flight to Salt Lake City. Thanks to her, everything came together!

Mother arrived dead tired after flying 8,067 miles, over 15 hours between Hyderabad through Bombay to New York on an Air India Boeing 747, and then another 1,973 miles in four hours to Salt Lake City. We lived an hour north, so in all she was in transit for over 25 hours!

Because she was only going to be with us for six weeks, I had to ask my boss to grant me one week unpaid leave to add to my two week vacation. We'd planned to take her by car to Las Vegas, Los Angeles, and San Francisco to meet friends, and then to Denver to spend time with Dinah's family. Two weeks were automatic since employees were given that, but the third week without pay required special permission from the General Manager. Granting me permission was a first for the company.

Her entire visit brought a lot of joy to us. On 1 June we had a snowfall. She'd never seen snow. Everything was new to her and we made sure she saw as much as possible. Even the smallest things, from learning how to use a hand-held calculator to the ease of depositing or withdrawing money in a few seconds at the bank's drive-through window made her happy. She even rode in the front car of the roller coaster at Lagoon Amusement Park. When we began our road trip, she sat in the passenger seat and read the road maps, which she mastered in no time.

Being a strict vegetarian, however, made our travel a real challenge since there were no options available. "Two tacos, hold the meat and cheese, please" was not the answer. So we would buy hot rice from a Chinese restaurant, plain yogurt from Safeway and in our hotel room, she'd add some of her tasty mango *achar* for flavor to the mixture. If we could find warm tortillas for her, that would be a treat. By the time we reached San Francisco, she was eager to cook a full Indian meal for our friends, Bob and Lorraine Green.

During our two days in Denver, she made Dinah's family a vegetarian meal in Aunt Billie's kitchen, setting it out on the backyard picnic table with the barbecue spread Billie had prepared. Everyone loved meeting my mother and she loved them. Once back at home, she was very happy to settle into a more normal routine and we enjoyed everything she made for us to eat. Her visit ended so soon and we told her that we'd come to see her very soon.

After my mother came to visit us for the first time in 1976, we began visiting India every three years because I was only allowed two weeks a year vacation. To extend the stay and get five weeks continuous time, I combined two years' vacation, back to back, on top of the 10 days the plant was closed between Christmas and New Years. That meant that I had no time off for two whole years. Whatever we did during a short Thanksgiving break or on the weekends had to be within driving distance.

When we weren't going to India, we began attending my Little Flower/Osmania class reunions in Chicago and Seattle. We took the Amtrak through the Columbia River Valley, which was a real treat. In 1990, we had a reunion with these same friends in Breckenridge, Colorado. We floated on the Arkansas River in four rafts, but when we hit some rapids, Vishwas's daughter, Ketki fell in and Sharmila pulled her back into the raft.

From the beginning, Christmas was always special with Dinah and I shopping and placing presents under our tree, quietly assembling bikes and red wagons and other goodies “from Santa Clause” while the kids were asleep. We made sure that we bought them their favorite toys or things that would surprise them. Dinah made them dresses and was careful that one didn’t receive more than the other. Some things were the same, like winter jackets or dolls, but she bought them in different colors.

She tried to establish American traditions like having Thanksgiving and Christmas dinner, but because I was a vegetarian, she simplified the process by buying a Jennie-O frozen turkey with gravy that came to be known as our “turkey in a box,” which was served with mashed potatoes and cranberry sauce. The girls’ birthdays were also a time of celebration for the whole family. Dinah knew what they wanted, how they wanted to celebrate and with whom. She always had a special cake made to be served with ice cream. Our neighbor, Kathy Davis made some very interesting cakes so both girls were eager for their birthday parties every year.

Dinah learned some recipes from her mother and from me, so the children grew up eating both American and Indian food. We decided not to raise them as vegetarians so that they wouldn’t be limited as I had been. She sucked her thumb but eventually grew out of it. She didn’t need braces but adjustments to her bite. From the very beginning, Anjali showed an independent spirit, weaning herself from the breast to the cup at the age of 9 months. I remember trying to get her attention so I could take a photo one day in our kitchen and she brushed me off by saying, “Just a *minute*, I said!”

Sharmila was three years old in 1977 when she and Dinah flew to India to visit my family for two months. They stopped in Bombay to catch a flight to Hyderabad. They were met at the airport by my classmate, Jayaraman and because they had missed that flight, they spent the night with him and his family before flying out the next day. That was their first introduction to Indian life and when they landed, she met my father and my brother, Vijay who were waiting for her.

During that first trip to India, Sharmila was old enough to recognize that India had a vastly different culture than the one she knew at home. She was very inquisitive and adapted very well to family, friends, food and surroundings. However, hot weather depleted her energy very quickly so we were careful to give her plenty of time to rest and play at home. We took her on a bus trip to Bangalore and a train trip to Madras. She also attended the marriage of my cousin, Jakku and Padmini in Bangalore.

Outings in Hyderabad revolved around going to various parts of the city to see the sites, play in the park, visit the zoo, and shop for necessities, like bread, eggs and household items, all which she loved. She was still in diapers and Dinah had to wash them by hand, kneeling on the floor of the bathroom and scrubbing each one with a clothes brush and a bar of laundry soap. Chlorine bleach was not available. Occasionally, the whole

family went to Gandipet, a beautiful lake about 10 miles from home for a picnic. We brought prepared food from home in *tiffin* boxes, including rice and yogurt, and rice and *rasam* mixtures along with *chapatis*, fruit and sweets.

One time, after lunch, my father had lain down for his usual siesta and Sharmila went over to him calmly and sat on his stomach. I was able to get this photograph of their moment together.



Sharmila took great delight in holding a mongoose, the enemy of the cobra.



Meeting With My Father

1977

In December of 1977, two months after Dinah and Sharmila had arrived in Hyderabad, the entire family, including my parents and brother, Vijay, were waiting to receive me at the airport. I determined that I would act as if nothing had happened between my father and me; he also acted normally. I felt that Dinah and Sharmila had softened him up. Sharmila at the age of three was very cute and a delight to both my parents. Her vivaciousness and bubbly personality provided an atmosphere of happiness in the house.

While nothing was said between me and my father about his disowning me five years earlier, I could tell that he had become far more aloof from me. His conversations with me were more blunt and curt. There wasn't much discussion about trivial matters. I could tell that he was hurt because I had married against his wishes. Our relationship had definitely changed.

For me, returning home to India after five years was true bliss. I was so proud to show off my lovely wife and daughter to all my friends, everyone in the locality, and the general public as a whole. Having an American girl for a wife was very unique in those days, almost unheard of. People thought I had brought home a "white" *memsahib*. They were very curious about what and how she ate, how she dressed, how she talked, and how she related to others. Many a time, we would be invited to dinner only to find out that the family had eaten before we arrived so they could watch every move she made, especially how she ate with her hands like a native, just as I'd taught her. We traveled to Bangalore to meet my maternal grandmother Thangadi and other family members. On the way back to the U.S., we met Mother's sister and daughter and family in Delhi and took a day to see the Taj Mahal.

In 1980, I went to my father's village in Maharashtra to meet my 80-year-old grandmother, Bai and other family. The village was about 40 miles from the railway station, but she wanted to come to meet Dinah, Sharmila and our one-year-old Anjali who were waiting for me on the train. The engineer allowed Bai to come on board to meet them. With kind words and blessings in Marathi, she put a five rupee coin in Dinah's hand to show that she'd been accepted into the family. Then the train left for Aurangabad where we met my father's brother Krishna and family from the village. They joined us to see the Ellora and Ajanta caves, historic places with shrines to Buddha carved in stone.

In 1983, my mother enrolled Sharmila in a Montessori School not far from our home. Although Sharmila was in first grade at Foothill School in Brigham City, the Montessori teachers advanced her to third because she was such a good reader. When not in school due to the many religious holidays that required school closure, they traveled with my mother to Bangalore and after I joined them in late December, we went to Madras to visit Roshni's husband, Thiru's family and other friends.

To make sure that we all celebrated Christmas, Dinah asked me to bring the cactus we had in a pot outside our veranda into the living room. She decorated it with crepe paper and decorations bought in Hyderabad and wrapped the practical gifts she and the girls had bought in advance.

My father said that he had never received Christmas gifts in his entire life. "This is a first." Dinah and the girls sang "Away in a Manger" for us before breakfast.



Welcoming our Second Baby, Anjali

23 January 1979



L: After Anjali was born, Diane said she was ready for number three, but her varicose veins would have become a major complication, the doctor warned.

R: Randi Hunsaker crocheted her blanket.

In preparation for the birth of our second baby, Dinah and I went through Lamaze training because Dinah wanted to experience natural childbirth. Sharmila's birth had not been complicated, but since then we'd discovered that Lamaze was "the best thing" to do for the baby. I became Dinah's coach, anticipating when the birth pains were beginning by watching the heart monitor and helping to keep her focused. Both of us learned the breathing method for the various stages of delivery. We'd had an ultrasound and knew that we were going to have a girl.

Dinah was already experiencing some early labor pains when I arrived home late one evening after a day of skiing with my neighbor, Chuck Weiss. He helped me to the door because I had fallen in the deep powder snow and was in a lot of pain. Lying in the snow, I used the same breathing techniques she would use during the labor process. That really helped. I knew that I had most likely broken one, maybe both legs. When she saw me, she was horrified. We went to the doctor for X-rays and found that I had broken my right tibia, and the other leg was just sprained. They put me in a cast from the knee down, an extremely uncomfortable situation. I was finally able to get around by sitting on a large plastic serving tray and dragging myself along the carpet. Dinah's labor effectively stopped until they put me in a walking cast.

On 22 January 1979. I wrote these notes:

Water broke at 7 p.m. Contractions 10 minutes apart

Called the hospital. Maternity nurse said to bring her right in.

Dinah took a shower and we left at 7:15, arriving at 7:20. Chuck drove us in his truck.

Dinah ran down the hall to the maternity ward with water sloshing into her shoes

Nurse Ruth Velasquez checked her and said she was 2-3 cms. dilated at 7:30

Dinah called Randi, Gail, Ginny, Nell, Kathy Davis and her Lamaze teacher, Sharon Johnson

She turned on the TV, sitting up to watch the George Burns Special on CBS, 7:32 p.m

I kept meticulous records of each contraction duration and the space apart while Dinah watched TV and did her breathing exercises as I instructed. She had a tennis ball at her back and was feeling fine, she said. We didn't know that the baby was posterior until Dr. Keller was called and told her to lie down. As she was being wheeled into the delivery room she had a lot of pain, but it was too late for any medication. On 23 January at 3:48 a.m. Anjali was born. She weighed 6 pounds 11.5 ounces.

Just as with Sharmila, I was allowed to take photos of her birth and proudly showed her off to everyone. We felt better prepared for a second baby by then. Both girls kept us so busy, but raising them with Dinah was a real joy. We planned outings on the weekends and trips to Disneyland in California, meeting friends in San Diego, and Dinah's family in Denver.

Family Travels to India

1977-1988

Being from India and having married a native-born American was a wonderful opportunity for our whole family to not only visit many parts of the US on our vacations but also expose them to a very different culture and country. The strained relationship between me and my father began to thaw after our eldest daughter, Sharmila was born in 1974. It began with my mother's visit in 1976 when she stayed with us in Brigham City for four weeks. From then on, we tried to visit India every three years.



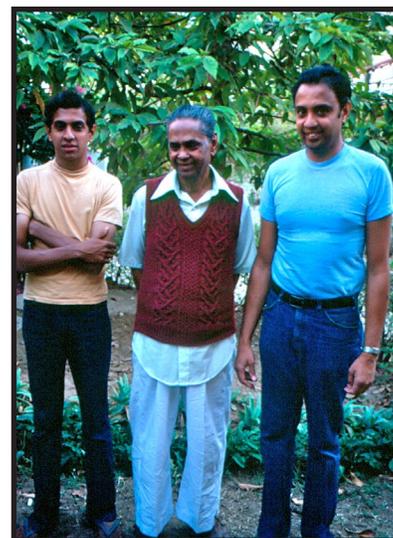
Top Left: Sharmila with my mother, father and Vijay, 1977.

Top right: Sharmila and Dinah with Mother and Grandmother Thangadi.

Below left: Anjali with the family. 1981.

Below center: Anjali and Sharmila sharing a secret

Below right: Vijay, my father and me.



• **October 1977-January 1978:** Diane and Sharmila (age three years) traveled by Air India via London and landed in Bombay before arriving in Hyderabad. I was only able to spend four weeks, taking each year's two-week vacation days back-to-back. We visited Bangalore to spend some time with Suresh's maternal grandmother, Thangamma (Thangadi) Shamma Rao; we also met family in Chennai, and New Delhi on our way home.

• **October 1980-January 1981:** In 1979, our second daughter, Anjali was born. Eleven months later, Anjali, Sharmila and Diane flew by Air India via London and Bombay. Anjali had an ear infection and cried all the way. Again, I did not travel with them because in order to spend four weeks, I needed to combine both year's vacation days, back-to-back. We visited Bangalore, Madras and Aurangabad. Sharmila was in first grade (standard). My mother enrolled her in the

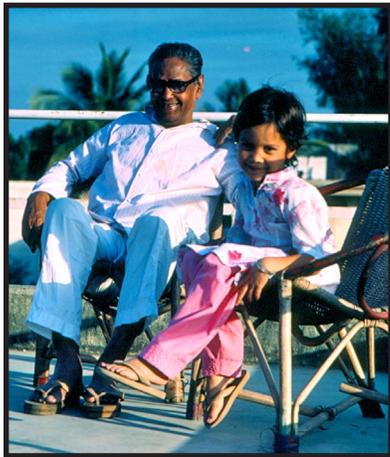
Montessori School, where they advanced her to third standard because of her reading skills. She learned beautiful Indian script, how to cut vegetables and enjoyed all the children. When she returned to Foothill School in Brigham City, they did not permit her to continue writing the way she had learned but insisted she go back to printing to stay with her class.



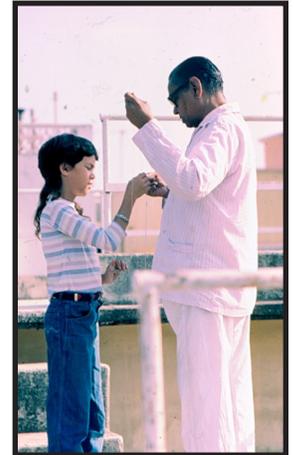
My grandmother, Bai

During this second trip, I also met several relatives on both my paternal and maternal sides of the family. I went to my father's village, Borgaon to meet his mother, Bai as well as many uncles, aunts and cousins. One of my uncles, Balu, was the principal of a school in the town of Jalna and he asked if I could give a talk to the students about life in America. The students were really intrigued by the fact that we used credit cards rather than cash because credit cards had not yet come to India. They also wanted to know more about the space program and the burning up of Sky Lab, because they knew it had fallen back to earth the previous July. They had been told by their teachers and religious leaders that they would be safe if they held their chalkboard slates above their heads to protect them from the falling debris.

On the last day of my visit to the village, my aged grandmother decided to accompany me to the railway station by



rickshaw at 4 a.m. where I had planned to join Diane, Sharmila and Anjali when their train from Hyderabad stopped on its way to Aurangabad. Bai wanted to meet them in person. That meeting was emotional when my grandmother gave Diane a five-rupee coin as a formal acceptance of her into our family. It's something I won't forget.



- **December 1983-January 1984:** In the fall of 1983, Diane had returned to college to finish her English degree, and both girls were attending St. Joseph's in Ogden, so their trip to India was not as extensive as it had been the past. We traveled together this time, via Tokyo, through Bombay, staying at home in Hyderabad but also visiting relatives in Madras and Bangalore. My mother, brother, Diane, children and I took

a long train journey to Goa with Krishnaswamy who provided us our own train car, complete with staff to take care of us and prepare our meals. Anjali became quite ill along the way with pharyngitis and to this day will not eat some South Indian dishes. She never did not like using the Indian toilet, worried that when she pulled the water closet chain that the flush would take her down with it.

- **June-July 1988:** We traveled on Air India to Bombay before going to Hyderabad. We visited family in Bangalore and Madras. Toward the end of our vacation, Diane and I left the girls with my mother and father and flew to Calcutta to see Mr. and Mrs. Krishnaswamy. We took the train back to IIT Kharagpur where I earned my masters degree. We stopped in Puri and Anaparthi before returning home. During that trip, Diane became ill and was laid up with fever, body aches, and extreme fatigue—"Flu like I'd never had before," she said. It was H1N2 (Influenza A, bird flu), lasting 10 days. I came down with it next. After having endured illness during the intense heat of summer, we decided never to visit India again, except during the winter months.

- **January-February 2004:** After Anjali graduated from the University of Utah, she wanted to return to India to discover her roots. The last time she was there, she'd been nine years old. We traveled by Emirates via London, visiting Hyderabad, Bangalore, Madras and Bombay. On the return journey, we had a short lay-over with Nancy and Peter Kai in England.

- **January-February 2013:** Diane and I went to India via Singapore to Chennai (Madras) for a seven-week visit with family and friends. We also stayed in Hyderabad, Pune, Mumbai and Bangalore. This was her first trip in 25 years and although enjoyable, it was not easy for her.

In addition to these family trips, I traveled alone several times to India to meet my parents and brother, attend his wedding in 1986, and returned for my father's passing and cremation in March of 1992. I brought my mother back to Utah with me that year and she lived with us for the next 20 years before her passing at the age of 96 in 2012.

Losing My Father

5 March 1992

On 16 January, 1991, the paperwork for my parent's immigration visas was approved and my father applied for a new passport. However, a few months later, his health began to decline. Roshni decided to go to check on him. In February, he was diagnosed with liver cancer, and his end was near. Roshni called to tell me about this and she said she'd let me know when I should return home. I was working when her call came. I called an Indian travel agent in Los Angeles, requesting a ticket as soon as possible. He said it would be ready for me at the Delta Airlines desk that afternoon in Salt Lake. I could pay him later.

I rushed home from work and packed. Diane drove me to the airport and I boarded the plane. When I landed in Madras, I found out that my flight to Hyderabad was delayed and instead of arriving at 8 a.m., I wouldn't reach home until noon. I found him in a coma and sat down next to him, holding his hand. "I'm here, Daddy." I sensed a sigh of relief come from him. Three hours later, he was gone, indicating that he'd been waiting for me.

Prashant, a Little Flower classmate who was a doctor, arrived to pronounce him dead. Sunil, another friend had already arranged for a hearse (an open van with a loudspeaker intoning a mantra announcing a dead body was passing by—I told the driver to turn it off). I went with my father's body to the crematorium. Within the hour after his death, I was pulling the lever to transport his body on rails into the blazing oven. Returning home, I wrote letters to all the relatives to inform them about what had happened. A couple of days later, I contacted the U. S. Consulate in Madras to let them know that I would be bringing my mother there to sponsor her for an immigrant visa to the U.S. They were very helpful and remained open for us even though it was Holi, a national holiday.. On my return to Hyderabad, I asked my good friend, P. S. R. Murty to help me decide what to do with the house. His recommendation was to sell all the contents before we left. He would take care of the house sale and would send the money to me later.

Roshni had returned to America by then. I advertised an "American Garage Sale" in the local paper and many came for the event. Within a day, practically everything had been sold, except for our personal belongs and three beds for me, my mother, and Vijay. Another friend, Karwande, offered to have Vijay stay with his family until such a time that he was granted a visa. He had to remain behind because visa rules allowed only parents of a U.S. citizen be given a green card on the spot. All other relatives would have to wait, and for Vijay, that meant four years.

9 March 1992 – My Dear Suresh and family,

How are you all? I have been thinking about each of you for so many days and wondering how you survived such a sad turn of events. I'm particularly thinking of how Mother will do after such a long married life. Has she done the typical Hindu things, like break her bangles and remove her bindi and necklace to inform the world that she is a widow? Please fill me in on all that's going on, Suresh. How are you, dear, and are you feeling all right? I worry about you in all of this as much as I do the family there and Roshni. Give me the details. Sharmila has asked me a couple of times why you haven't called, and I think she is missing you quite a bit. She asked me also about the card we sent and if you had read the words we wrote to Grandpa before he died. I told her I thought you had. She seemed relieved. We all wanted him to know how much we cared and would miss him.....*Dinah*

Dr. B.S. Kulkarni

Dr. B. S. Kulkarni, 83, of Hyderabad, India died at his home on March 5 of cancer.

He was born December 13, 1908 in Borgoan, Maharashtra, India. He married Dr. Nagamani Rao from Bangalore in 1943.

Dr. Kulkarni received his postgraduate education from Nagpur University and his Chemical Engineering training and Ph.D. research at the Indian Institute of Science in Bangalore, supplemented by technical field training in various factories. He was awarded a Ph.D. degree from the University of Bombay in Applied Chemistry, together with the sudborough Gold Medal for best research in 1939.

In 1943 Dr. Kulkarni was appointed Reader by Osmania University to initiate technology courses with just 12 students, and over the next 15 years the section became a full-fledged Department of Chemical Technology. Dr. Kulkarni acted as professor and head of the department and also as the Dean of the Faculty of Technology until his retirement in 1964.

During this period Dr. Kulkarni was deputed by the Government of India to do research for some time at the Southern Regional Research Laboratory in New Orleans, U.S.A. where he helped the Filtration-Extraction Process.

Dr. Kulkarni published 45 research papers in Indian and foreign journals. He was a member of the Oil Technologists' Association of India and also a founding member of the Indian Institute of Chemical Engineers and its Hyderabad Regional Center. He was associated in various capacities with the universities at Nagpur, Bombay, Madras and Banaras.

Surviving are his wife, Nagamani and youngest son, Vijay Kulkarni of Hyderabad, his eldest son Dr. Suresh Kulkarni of Brigham City; and his daughter, Dr. Roshni Kulkarni-Thiruvengadam of Okemos, Michigan.



Chapter Seven

Early Retirement & Community Outreach

2003

“When people ask me what I’m expecting from your retirement, I’d have to say that I’m looking forward to a great lessening of the load you have been carrying all these years. I’m hoping for time to sit together in our shady backyard to drink iced tea, read, enjoy the birds, take cool morning walks, travel and meet many family and friends. Retirement is your reward for a job well done. I feel it is also my reward.”

– Diane, spoken to the people present at my retirement party in Ogden Canyon

An Unexpected Change of Direction

2003

In early 2001, a routine physical exam with our family doctor, John Markeson, yielded a tremendous shock to me. I was diagnosed with Type II Diabetes. I thought my world had crashed. I delved into books on diabetes, went to classes at the Brigham City Hospital in hopes that I could do something to avoid the disease. But that was not to be. I had to prepare myself mentally for a future of regularly poking my fingers to determine blood sugar levels, eating less carbs, exercising regularly, etc. My research revealed that my condition was primarily due to four things:

1. My father developed diabetes when he was in his early 60s
2. I didn't eat breakfast or lunch on workdays and ate a large dinner later in the evening before bed
3. I endured a lot of stress at work
4. I had no exercise at all

As far as not eating right, my workdays on the Shuttle program began at 6 a.m. and ended at 6 p.m. I usually got up at 3 a.m. to begin work at home. Sometimes I didn't have weekends off. I was always on call, involved in a lot of meetings, traveled extensively and along with other colleagues, only drank a Diet Coke for lunch. While I was working, my attempts to control my blood sugar were very difficult.

Finally, in 2003, Dr. Markeson said that I had a choice to make. "Either quit or suffer a heart attack in six months," he said. That did it. I decided that I had enough financial resources to take care of my family in the future, and it was time to take early retirement. My last day at work was just before my 60th birthday.

29 April 2003

TO: Ed Hikida

V. P., Science and Engineering

Subject: Retirement

I plan to retire, effective 1 June 2003. My last day will be 31 May 2003. My 31 years at ATK Thiokol have been very rewarding, and I appreciate the many opportunities that I was given. I wish the company the very best in the future.

–Suresh. B. Kulkarni

13 May 2003

TO: All ATK Thiokol Propulsion Leadership

FROM: Edward T. Hikida

After more than 30 years of service with Thiokol, Suresh Kulkarni has announced his plans to retire, effective 31 May 2003.

Suresh has had an outstanding career working extensively with design, analysis, testing and manufacture of solid rocket motors and related technologies. His current assignment is Director of Systems and Analysis where he has technical responsibility for proper conduct of systems engineering and analysis for all programs, including RSRM, Minuteman, Trident II (D5), CASTOR 120, CASTOR IV A-XL, GEM motors, Titan-SRM motors, and contracted technology/IR&D motors.

Suresh is especially proud of his accomplishments while Vice President of RSRM Engineering (1989-1997). He had technical responsibility for RSRM mission readiness and success, and presented flight readiness for 55 shuttle launches. Suresh's other assignments include chief engineer on the very successful Small ICBM first stage rocket motor, manufacturing manager for Peacekeeper, Trident and space motors, and composite structures supervisor.

Suresh serves on the external Advisory Committee for the University of Illinois School of Engineering, Champaign, IL, and Weber State University Mechanical Engineering Department, Ogden, UT. He represents ATK Thiokol on the Rocky Mountain NASA Space Grant Consortium and was a member of the Presidential Commission on the Space

Launch Broad Area task force in 1999.

Suresh has a Ph. D. in Engineering Mechanics from the University of Denver and has published 12 technical papers pertaining to rocket motor design development. He and his wife, Diane, live in Brigham City, Utah. They have two daughters and one granddaughter. Please join me in wishing Suresh a safe and happy retirement. –*Edward T. Hikida*

The company held an Open House in the cafeteria for employees to come and say goodbye to me. My mother and Dinah were able to attend this, and I was amazed at how long the lines were all afternoon as the employees came to wish me well. A couple of days later, the Chief NASA program manager, Keith Henson, flew out to honor me with a plaque. The company also gave me the laser-engraved plaque, shown in chapter 5. Finally, Thiokol gave me a big send-off dinner for 120 of my close friends at the Management Training Center in Ogden Canyon.



NASA's commemorative collage

The First Days of the Rest of My Life

My first days of retirement were spent taking my mother to and from the Senior Center for her Japanese Bunka embroidery class, to and from the fire station for her bridge group, and playing with my granddaughter, Madeleine. I was giving my mind time to wind down.

I decided to beautify my garden by collecting small white rocks about the size of eggs, which I'd found along the dirt road in rural Perry, not far from where Sharmila lived. I placed them carefully around the tree trunk. A beautiful carpet of stones soon spread further into the garden as I thought through what to do next. During that time, it occurred to me that since my 88-year-old mother had been finding it hard to climb the steps in our three-level house on Medoland, building a new house on one level would be a good idea. We wanted to be as close to Sharmila as possible, so Dinah and I began looking for land on which to build a ranch-style home.

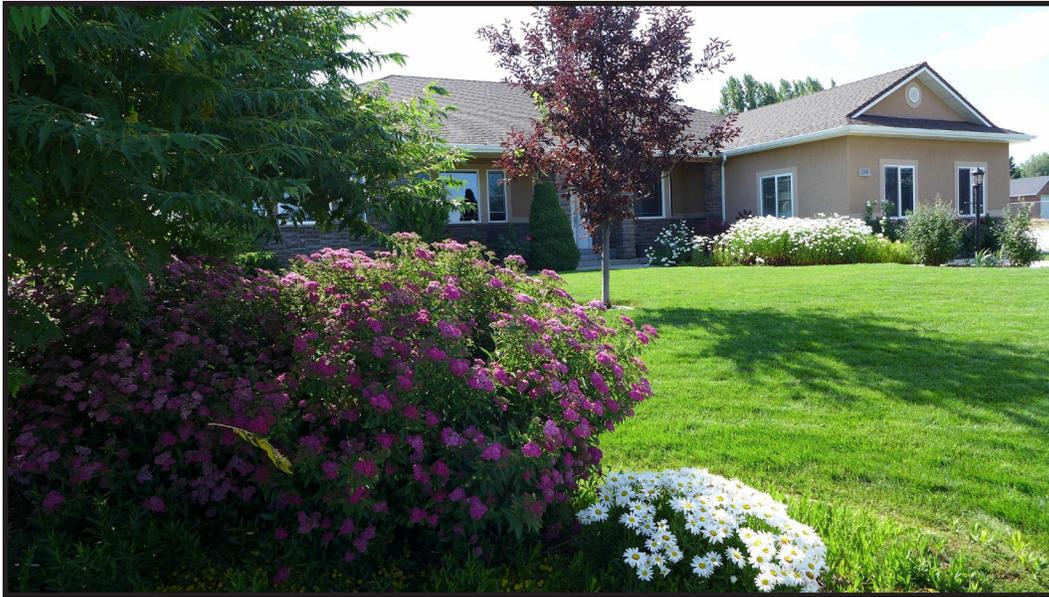
A close friend of ours, Dr. Richard Dunn the radiologist at the Brigham City Community Hospital, talked me into joining the hospital Board of Trustees in 2003. I knew nothing about healthcare or how the hospital worked, or how my experience learned on the job as an engineer and a manager would improve the hospital to benefit the community.

Anjali graduated from the University of Utah that summer and said that for her graduation gift, she wanted to go to India with me to rediscover her "roots" by meeting the family. I jumped at this and booked two round-trip tickets for a six-week stay, leaving in late December and returning in early February of 2004.

The day after Christmas 2003, Anjali and I left for India. She sweet-talked the Delta Airlines agent into upgrading us to first class from Cincinnati to London. From there, we flew Emirates to Hyderabad, spending a week with my good friend, Chalapathy. We traveled by train, spending a week in every place we stopped: Bangalore, Bidadi, Madras, and Bombay. We met a lot of friends and family on both sides before returning to Hyderabad. There we reconnected with some people from the old locality and with my Little Flower/Osmania classmates. This trip was a great bonding experience for Anjali and me. On our return trip, Emirates allowed us to take a three-day layover, so we stayed with my former neighbor and close family friend, Nancy and her husband, Peter Kai in Redditch, England. Anjali was ready for steak and anything other than Indian food.

One day, I stopped by the city office in Perry and met with the mayor, Ed Skrobiszewski, or Ski. I already knew Ski well because he was the NASA representative at Thiokol. I asked him if he knew of any good properties we might look at. He told me that the city owned a 3/4 acre plot, which they wanted to sell. To my surprise, this land just happened to be next door to Sharmila's house! Dinah and I went to talk to Sharmila and Josh and told them that we didn't want to intrude in their future lives, but if it was okay with them for us to live next door, we'd like to put in an offer on that land. When we got the green signal from them, I made an offer, which was quickly accepted by the Perry City Council.

Josh and I selected a house plan, redesigned the interior layout, and hired his cousin, Joe Dunn, to build it. We broke ground for the foundation on Sharmila and Josh's 10th anniversary, 12 August 2004, and construction began. A year later, on 13 August 2005, we moved in. Selling our home in Brigham City did not present a challenge because we had followed our realtor's suggestions to remove all our belongs except a few items for staging and to update the paint color in the living room. We received a full offer within a week of the house being on the market.



Our current home: 2595 So. 1200 West, Perry City. Utah 84302



Once we were settled in our new house, I felt free again to look for something to do. I continued with my hospital Board of Trustees work, and in August of 2005 when Hurricane Katrina devastated New Orleans, I learned that Federal Emergency Management Agency (FEMA) funds are only available to a community if a disaster plan was in place. I went to Ski and told him about this and he said, "We don't have a disaster plan. But since you know more about this than me, why don't you write one?"

All of a sudden, I was involved in two major volunteer projects, both of which provided me great learning experiences. I was really busy. I also started helping the city on other committees: the Land Use Board, Economic Development, our 100-year Centennial celebration, etc. For all these efforts, the subsequent mayor, Jerry Nelson, presented me with the "Citizen of the Year" Award on 4 July 2009.

In 2008, the CEO, Mark Adams of our hospital, offered me the position as Chair of the Board. I accepted and attended training classes in Salt Lake City and on the internet to learn about the responsibilities of a board chair. I made it a priority to get acquainted with physicians, staff, and each board member and began implementing several initiatives.

In 2010, I won the Trustee of the Year award given by The Utah Hospitals and Health Systems Association. Some of the contributions I made were listed by Mark Adams for the award:

1. Significant Contributions to the hospital/system:

- Mr. Kulkarni has been instrumental in improving communication and collaboration with the physicians and administration. Encouraging meeting together, a physician newsletter encouraging physicians' attendance at meetings,

and other educational opportunities, such as helping to create the monthly “Ask a Doctor” article in the local newspaper.

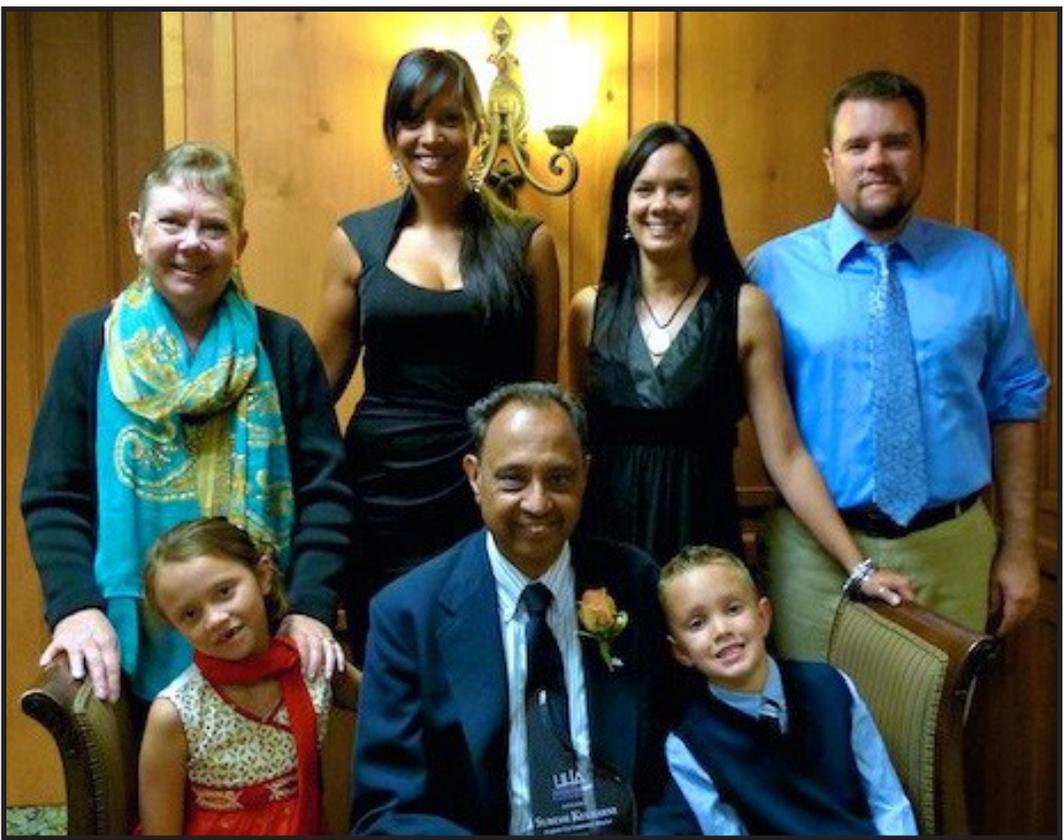
- He also encouraged the administration team to improve participation in the employee satisfaction survey. Survey participation was in the 60 percent area when Mr. Kulkarni started on the board. With his encouragement, hospital participation in 2010 was 98 percent.
- Mr. Kulkarni is a patient advocate, speaking to many members of the community about their experiences at the hospital and encouraging them to talk to the hospital about issues they have. He has been very active with the Patient Experience Committee, helping to improve patient perception of the hospital in the community. Monthly patient complaints are discussed in board meetings with discussion on how to improve care for each of these patients.
- Education for board members, physicians, and staff members are highly encouraged by Mr. Kulkarni. He encourages participation by the Board and medical staff members at leadership retreats, outside conferences when possible, and implementing the Topic of the Month in Board meetings. Each month a different Board member will bring a topic they would like to present. Physicians and Board members have been educated in many different topics they might not have been exposed to if not given these opportunities.

2. Significant contributions to Utah’s healthcare industry:

- Mr. Kulkarni exposed hospital administration members to “Best Practices” of the aerospace industry
- He represented Brigham City Community Hospital and local physicians as their “Ambassador” to the community.

3. Leadership in the community:

- Mr. Kulkarni received the “Perry Citizen of the Year” award in 2009
- He is a member of the Perry City Land Use Board
- He served as a committee member and in leadership roles for Perry’s community events
- He was a member of the Perry Economic Development Committee and Perry’s Centennial Committee
- He is active in the voting process for Box Elder County and Perry City



With the family at the Trustee of the Year award ceremony,

4. Office or positions held, or community appointments on hospital/system board:



- Mr. Kulkarni was appointed as Board representative on Credentials Committee, 2005-2008
- He represented Brigham City Community Hospital in strategic planning council session, July 2009

5. Other qualities of the candidate:

- Mr. Kulkarni retired as a senior executive, the Vice President of Engineering at ATK, formerly Thiokol in June 2003
- He is well-connected in the Brigham City and Perry communities with the mayors and council members
- He has a strong dedication and commitment to improving the hospital image in the community.

Adams included: “During Suresh’s tenure as Chair, the Brigham City Community Hospital was recognized by Thompson Reuters in 2008 as a “Top 100 Hospitals” nationally. He led efforts for the certification and designation as a level IV Trauma Center and for the design of our new Outpatient Surgery Department, which opened in the fall of 2009. We added 16 surgery beds and two GI suites. Since 2007, Brigham City Community Hospital has been recognized as one of the top five hospitals in the HCA system for employee engagement. The Board was instrumental in guiding and directing management in this important leadership engagement effort. Ninety-eight percent of the employees participated with a 94 percent employee satisfaction rating.”



On 20 December 2012, my four-year term as BCCH’s Chair of the Board of Trustees came to an end. As a Thank You, the hospital gave me the photograph that hung in the hospital hallway during my tenure, a beautiful plaque, a red shirt and a Roku streaming player for our television. Dr. Richard Dunn, the hospital radiologist who had first invited me to be part of the Board, gave a speech and then Richard Spuhler, the hospital CEO spoke. He also read the following letter from the corporate president of HCA, Mountain Division.

Dear Suresh,

I understand that your term on the Brigham City Community Hospital Board of Trustees will expire in 2012. I speak for many to say that your contributions as Chairman of the Board, and as a Board member, are appreciated and admired. It is no coincidence that your time on the Board correlates with a period of great growth and development at BCCH. There are measurable impacts of improved care and capabilities at the hospital under your Board stewardship.

I have appreciated your engagement and participation in all of our Mountain Division activities, in addition to your BCCH support. Finally, it has been a pleasure to know you. I know you will continue to be a huge advocate for the hospital. Please accept my best wishes for the future. –John Hanshaw, President

In November of 2017, I completed two years volunteering on the Aging Council at the Brigham City Senior Center by appointment of the mayor. In 2018, Diane and I will be working with the local police as volunteers for the Perry City Citizen Patrol.

We are both in good health, but Diane did go through some major health crises, surviving breast cancer twice in 11 years through early detection and two mastectomies, three heart ablations, and a major heart surgery to cure atrial fibrillation. I am so blessed to have her as my partner in this life!



Union Pacific Living Legend 844 racing past Perry City orchards, 25 April, 2017. Photo: Benjamin Zack, *Standard-Examiner*. Used with permission.

The Biggest Surprise Ever

Diane did not let me know that DaNiece Mikkelsen, a friend of ours with whom she had been collaborating for over four years on a memoir, had been attempting for months to find a way to fulfill a long-held wish of mine. She wrote letters, made follow-up phone calls and finally, after more than a year's effort, was able to secure this most unusual permission. And she surprised me with the letter.

Dear Dr. Kulkarni,

With gratitude for your service to the United States, your remarkable career, and the friendship you have offered to so many, your friends and neighbors would like to present you with the opportunity to ride in a Union Pacific locomotive. Union Pacific and Thiokol and ATK have a long history together, and it's a unique opportunity to make this kind of presentation. It is a testament to the persistence of your friend (DaNiece) that this opportunity has come to fruition. We are looking at a few different options to have you on a train. When you are ready to make the trip, please complete the attached Permit and Release and contact me (my card is enclosed) to coordinate the dates with our operating team.

—Nathan Anderson, Director of Public Affairs, Union Pacific Railroad

On 25 April 2017, Diane and I both boarded Union Pacific, No. 844 in Brigham City for our 25-mile ride to Ogden. Number 844 was the last steam locomotive, known as Living Legend 844, delivered to Union Pacific in 1944, the year I was born. I climbed up into the engine cab while Diane sat with state dignitaries in a vintage dome car. The cab was amazing—lots of tubes, valves, gauges, levers, and crank wheels—an engineer's dream. The power of the engine was something to behold as it was huge.

People all along the line stopped to wave and take photos of Living Legend 844. That was a perfect day for me!



Another Great Loss



While all this was happening, I was also enjoying my time with my children and grandchildren. Anjali had settled in Las Vegas and was doing very well in her career. Josh was moving up the ladder at his company in Ogden, and the grandkids were growing up with Sharmila, their wonderful mom. My mother was enjoying her friends at the Senior Center and in her bridge group, but she loved most of all to spend time with the family, especially her great-grandchildren, whom she called “My Tonic.”

After we celebrated my mother’s 96th birthday on 11 January 2012, Diane and I were puzzled when the very next day Mother said that we needed to let her go. During our last dinner together that night, she told us how much she loved us and how she appreciated Diane for taking her in and caring for her, something “no other Indian daughter-in-law” would do. But her strength was lessening everyday and she knew it was her time to go.

I asked Dr. Markeson to have a chat with her. Afterwards, he said, “She has decided that her life is at an end, and she’s done. So I’m prescribing Hospice care.” They brought in a hospital bed and anything else we needed to make her comfortable. Mother had a nurse, an aid, and a chaplain/social worker. Each spent time alone with her. We were advised by the Hospice staff to call the nurse and not 911 if there was an emergency, since as soon as an ambulance takes a patient into the ER, the doctors will do everything to revive the patient, in spite of their wishes. Mother had been firm that she did not want any heroic actions.

The night that we had signed up for Hospice, sometime after midnight, Mother got up to go to the bathroom and fell on her face, breaking open the skin below her nose and bleeding profusely. She was confused and stunned, but we managed to get her back to bed and then called the nurse who said she was sending the aid. Over the telephone, Dr. Markeson prescribed super glue to close the wound, which stopped the bleeding and within a couple of days the wound was healed. Mother refused to eat or drink and began spending most of her time in bed.

The next 14 days were a blur as we took care of her needs. We gave her small oral doses of morphine with a small dose of Haldol to help with anxiety. She was able to say goodbye to her Indian friends from Ogden and Salt Lake and also some came by from the Bunka group. Anjali flew in for a few days to spend time with her grandmother. Roshni and Thiru and their son, Raj arrived. He could only spend two days. We took turns being on call and learned from the nurse how to turn her as a team. Diane’s assigned hours were midnight to 4 a.m. I took over until 8 a.m. when Roshni took her turn. Whenever we needed the nurse, we called and she rode down from Logan on her motorcycle, dressed in black leathers and boots. She was a dedicated lady as was the aid.

Early on, Mother was adamant that I be the one to flip the switch at the crematorium. I called the mortuary and they gave me permission. I asked Mother what she wanted me to do with her ashes—take them to India and immerse them in the Ganges or find a river in America? “Don’t even think about putting them in the polluted Ganges,” she said. “And do not bring the ashes home. It’s bad luck. I don’t care what they do with my ashes.” I called the mortuary again and they had never had such a request, they said. They had me come in and sign a paper giving up any right to return later for the ashes. I don’t know what they did with them.

The only other thing I asked her was what she wanted to say in her obituary. Diane woke up later that night to find her sitting in her chair and writing something in Hindi. This is what she wrote and I added it to what Roshni and I had put together: From a Sanskrit verse from the Vedas “*Sarve Janoh Sukhino Bhavantu,*” which means: “May all the people in the world get happiness and peace.”

Around 4:30 a.m. on 7 February, I went in to check on Mother. She had passed away. She looked very peaceful. I told Dinah and Roshni and then called the Hospice nurse who came right away and verified that she had died. Dinah called Dr. Markeson to come and sign the death certificate. At that time the nurse took all the remaining drugs from Mother’s medical box, and in front of us, poured them into a two cups full of laundry detergent so that there was no way they could

be retrieved and used illegally. Dr. Markeson came to meet her and to comfort us. We decided not to call the mortuary until after our grandchildren had left for their school in Marriott-Slaterville and the local school kids were in Three Mile Creek, behind our house. We didn't want any of them to be upset after seeing a hearse in front of the house.

The two morticians from Gillies Mortuary arrived in their dark suits and somber faces. They wheeled a gurney into her room, ceremoniously lifting her onto it and leaving an artificial rose in her place. She was cremated two days later in Ogden at Leavitt's Mortuary. Vijay, Thiru, Josh and I along with Roshni, Sharmila and Dinah were there. I pressed the button, which lit the furnace. The women had to leave.



Standard-Examiner Obituary

Nagamani Kulkarni: 11 January 1916 – 7 February 2012

PERRY, UT – Nagamani Kulkarni, an accomplished scientist, chemistry professor, champion bridge and tennis player, artist, quilter, painter, cook, embroidery expert, and great-grandmother left a large circle of family and friends here and in India when she passed away at her son's home in Perry on February 7, 2012.

Born on January 11, 1916 in Bangalore, India, at an early age, Nagamani lost her father, a doctor in the British Army, to the effects of mustard gas during World War 1 in Mesopotamia (now Iraq). With her mother's encouragement to get educated, she was one of the first Indian women to receive a PhD in physical chemistry in 1939 when India was still under British rule. She went on to become Professor and Chairperson of the Chemistry Department at a college of Osmania University in Hyderabad.

Following her husband's death in March 1992, she came to Brigham City to live with her son, Suresh. She enjoyed playing bridge and meeting her Bunka embroidery friends at the Senior Center. Her hand-embroidered saris and Bunka pictures were displayed at the Senior Center and Perry City Office.

The family is grateful to Dr. Markeson and his Hospice team, AFI Advanced Care, for providing outstanding and compassionate end-of-life-care.

Nagamani is survived by her sons Suresh (Diane) of Perry and Vijay of Brigham City, and her daughter Roshni (Thiru) of Lansing, MI; her grandchildren Sharmila (Josh), Anjali, and Raj; and great-grandchildren Madeline and Ian. At Nagamani's request there will be no service. In lieu of flowers, donations in her name may be made to AFI Advanced Care Hospice, 1916 North 700 West, Suite 115 – Layton, Utah 84041.

A believer of all religions, Nagamani's departing words were a Sanskrit verse from the Vedas "*Sarve Janah Sukhino Bhavantu,*" which means: "May all the people in the world get happiness and peace."



Madeleine with her great-grandmother working on a Japanese Bunka picture. She cross-stitched each square of her quilted bedspread.

Mother's Memories



My father, Dr. Shama Rao, was a captain in the British army during the First World War. He was sent to Kashmir, then to Afghanistan, Rawalpindi in Pakistan and lastly to Mesopotamia, which is modern-day Iraq and western Iran. During battle there he was exposed to chemical warfare, probably mustard gas.

Once back in India, he became active in the Indian Independence Movement. He set up his practice in Coimbatore in the south, but in 1923 he moved to Bangalore to be near his family. Saroja and I and our brother, Nagendra, attended Mahrathi school. Eventually, the dry, dusty climate of Bangalore negatively affected our father whose lungs had been damaged by the mustard gas, and he developed tuberculosis. He died in 1925 when I was nine years old.

After he passed away, his parents wanted my mother to arrange child marriages for each of us, but she refused, saying that she wanted us to get an education. Without their support, my family became very poor although we did receive some help from other relatives. My mother became a school teacher because she knew English. Saroja and I became known as the Singing Sisters. We sang for neighbors. We even sang for Gandhi one time. That's when a friend of my father's heard about our family's impoverished situation. He advised my mother to apply for my father's pension, which was due her, since he had served in the British Army. So she took us to see an officer and he made it possible for us to receive money and the pension; we also received a children's pension to help support us until we turned 21. This enabled each of us to get an education. My mother was able to rent a house close to our school. As we advanced through the years and changed schools, she would move close so we wouldn't have far to walk. She did the same thing when I was admitted to the Indian Institute of Science to work on my PhD in physical chemistry.

In 1937, when I joined the IIS chemistry department, I met my future husband, Bapu S. Kulkarni. We realized that he had known my maternal uncle, Subba Rao in Nagpur because they both had an interest in music. Although I lived off-campus, I was invited to eat lunch with the other students and with the women who lived in the hostel. The men invited all the women, including me to play tennis. I also played bridge with the group. In the evenings, the men escorted me home.

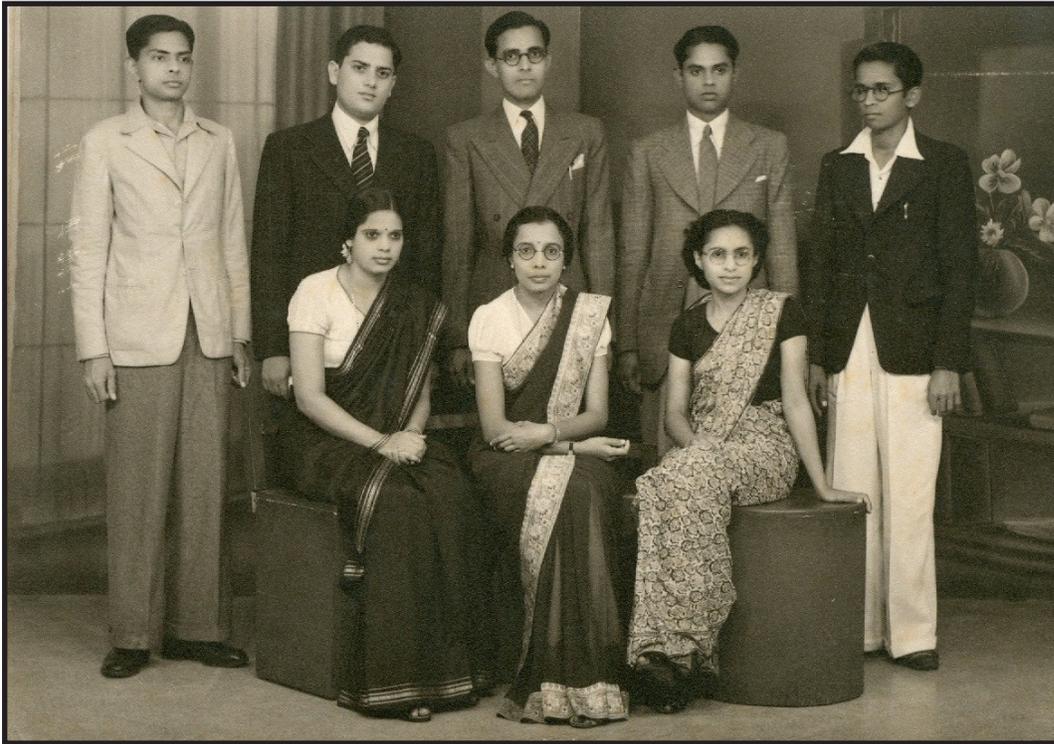
Over the next six years, the friendship between Bapu and me grew. He wrote to his father, Taty, in 1943 after I had finished my Ph.D. telling him that he had met someone and wanted to get married. Having a "love marriage" was highly unusual in those days. He described me as a PhD, a Brahmin and a strict vegetarian. His father sent a quick telegram: "Accepted. The marriage must take place within the month."

The preparations began when Subba Rao and his wife went to Borgaon to meet the Kulkarni family and to make the arrangements. They were treated so well, because Kulkarni's were relieved that Bapu had picked someone from their same caste who had their strict vegetarian eating habits. As the Director of Agriculture, Subba Rao later helped the village build a dam.

Taty and the Hindu priest decided on the date and time for the wedding, according to astrological charts. I bought a couple of saris and Bapu bought his suit from our respective, small savings accounts. My mother bought rice, bags of dal with spices, and the family hired a man to cook for the wedding, but he never arrived. Ramaswamy (my paternal cousin) and his wife, Sharda (her mother's sister) came from Hyderabad and met us on the train. We all traveled third class to Peparia to catch a bus for the hill station, Pachmarhi. Bapu's maternal uncle and aunt, although very poor, boarded the bus at Nagpur to present me with a blouse piece with *haldi* and *kumkum*. Since the cook hadn't arrived, she cooked *uppama* and coffee with milk for 30-40 people.

The maharani, the local maharajah's wife, heard about our upcoming marriage and brought me a gold-plated silver bangle for my upper arm. Nagendra, the town's anti-malarial officer, with help from the townspeople, had arranged all the accommodations for guests, including procuring the water, finding a *dhobi* to wash their clothes and even planned for sightseeing the day after the wedding.

Our ceremony was held in the morning and then lunch was served. From morning to evening, we had coffee and listened music and songs. Finally, in the evening, the crowd dispersed. We stayed another day and then went back to Bangalore for work. Two months later, we moved to Hyderabad because my husband had been invited to join Osmania University on September 15, 1943.



Center front: My mother; Back, second from the right: My father shown with their IIS friends



My closest maternal family. Front L-R: Cousin Sunita; Grandmother Thangadi; Great-grandmother Ammadi holding me; & my mother. Back L-R: Uncle Nagendra; Aunt Saroja; & a servant

Chapter Eight

End Notes

“Life is like riding a bicycle.
To keep your balance, you must keep moving.

–Albert Einstein

Family Transitions



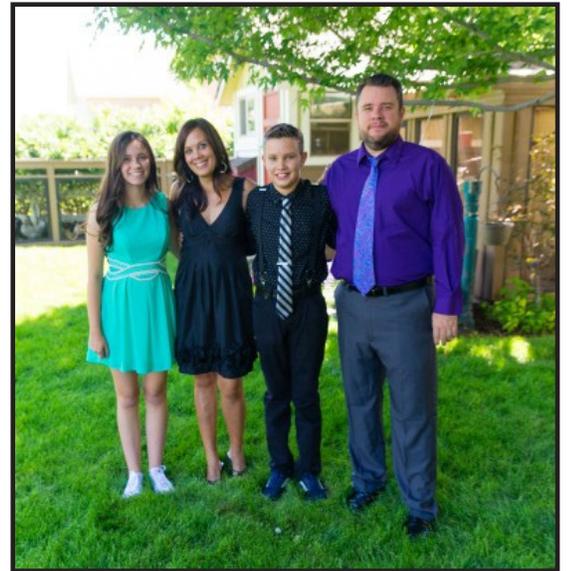
Both Dinah and I had a wish that one day our daughters would be educated beyond high school. We told them that we would financially support them completely as long as they were in college. They accomplished this with flying colors. Sharmila graduated from Weber State University, Ogden in 1998 with a bachelor's in Psychology and Child and Family Studies. Anjali graduated from the University of Utah, Salt Lake City in 2013 with a degree in Political Science and a minor in International Relations.

One other condition that I had hoped for was that they would complete their undergraduate degrees before they got married. That was not to be in Sharmila's case, but how this came about is interesting. Sharmila had been dating a Weber State student named Josh Felix. They were both 19 years old. I would occasionally talk to

Josh about his goals, not thinking that one day he'd be my future son-in-law. One day, my mother said, "Sharmila will be asking you something tonight and you should not say 'No.'" She made me promise, so I gave her my word.

That evening, at the dinner table, Sharmila told me that she wanted to marry Josh. I was surprised, but my mother gave me a reminding look, so I said, "Yes." Later, Josh came to ask my permission. I realized that I needed to help Josh focus on his educational desires so that he would be financially well off in the future. Eight months after they were engaged, their wedding took place on 12 August 1995 at the First Baptist Church in Brigham City.

At the time of this writing, the family is doing really well. Madeleine (14) is a freshman at Venture High School with a keen interest in debate, writing, reading and art. Ian (12) is in 7th grade at Venture Academy. Venture K-12 is an Expeditionary Learning charter school in a town about 20 minutes south of us. Sharmila chairs the Venture School Board and stays busy driving both children to their many activities. Josh works as an architect for Building God's Way, a Christian architectural firm that builds churches, schools, and other major projects across the country.



Meanwhile, Anjali dated but mainly focused on her retail career in Las Vegas, Nevada. She was able to buy a home and sell it in 2016 for a new custom-made home. She met Chris Chase in 2013 and finally brought him home to meet us. He asked my permission to marry Anjali, and I agreed. On 2 July 2016, they had a registered marriage in Las Vegas with both our families present. On 16 October that same year, they had a second ceremony with a large reception for friends and family. Chris works as a bartender and also helps his father with his extermination business. Anjali is a Communications Specialist, a 911 Call-Taker, with the Las Vegas Metro Police. They have two dogs and have adopted a miniature horse.

Dinah and I are very proud of our daughters, their spouses and our grandchildren and hope to continue contributing to their lives.

Journal of Cosmology, Vol. 26, No. 21, pp 15025.- 15109

P 15109