

**To Enrich Life**

**Klaus-Jürgen Bathe**

**P**ositive attitude

**R**esponsibility

**I**ntegrity

**D**etermination

**E**nthusiasm

.... a **P**ride that leads to Success

Preface	ix
Chapter 1 My Infancy	1
Chapter 2 Growing up in Germany	7
2.1 Some Events in Hannover	7
2.2 The Excitement of Travel	10
2.3 A Critical Event in my School Education	15
2.4 The Formative Years in Oldenburg	17
2.5 Leaving Germany — but Never in my Heart	23
Chapter 3 Five Wonderful Years in Southern Africa	27
3.1 Cape Town and the Travel to South West Africa	27
3.2 On the Farm in South West Africa	30
3.3 Working in a Gold Mine	34
3.4 Working on Road Construction	36
3.5 My Studies at the University of Cape Town	48
Chapter 4 My Graduate Studies in Calgary and Berkeley	63
4.1 A Student at the University of Calgary	64
4.2 Starting at UC Berkeley as a Doctoral Student	73
4.3 My Doctoral Research — a Great Experience	77

Chapter 5	Three Years in Berkeley as a University Research Engineer and a Consultant	83
5.1	To Advance Finite Element Methods	85
5.2	The Development of SAP IV and NONSAP	89
5.3	My First Book: Numerical Methods in Finite Element Analysis	98
5.4	The Creation of ADINA	102
5.5	An Interview and Hired at M.I.T.	105
Chapter 6	Professor at M.I.T.	109
6.1	Moving to the Boston Area — and Staying	109
6.2	My Teaching and Research at M.I.T.	117
6.3	Connecting with Academia and Industry	128
Chapter 7	The Thriving of ADINA	151
7.1	Founding ADINA R & D, Inc.	153
7.2	A Small Company in Competition	155
7.3	Computational Engineering Greatly Enriches our Life	159
Chapter 8	My Quest to Make a Lasting Contribution	171
Chapter 9	In Closing — a Few Reflections	177



## Preface

When I revealed to my wife, Zorka, on Saline beach of Saint-Barthélemy, the French island in the Caribbean, that I would like to write a book on my life, her immediate and very natural response was “Why would you want to write a book about your life?” My short answer was “I will much enjoy writing it”.

My long answer is that I would like to tell how I had a great journey through life, that by writing this book, I would experience some of that journey again, and that I believe there are people interested in my life story and thoughts.

However, I shall not tell in this book every detail of my life, and in particular not much about my family and loved ones. Instead, I focus in this book on how I grew up in Germany after the War, how I left Germany, and how I developed in my profession as an engineer, with the dream “to enrich life” – my life and the life of others, all within my modest abilities.

As I tell in the book, Beethoven has been my hero since high school, for how he has enriched life with his wonderful music. Of course, there have been many great people who have enriched life

with great accomplishments. My dream has been to achieve as much as I could, with my only fair abilities.

There were wonderful times and there were hard times, and I shall tell about these in this book. However, in the interest of avoiding boredom, I shall focus on important events of my childhood, and those that I remember well, that shaped my future, and which eventually instilled me with the desire to enrich life.

I remember the important events of my life crystal clear. This is the reason why I wanted to write this book while still relatively young. In addition to telling significant but at times also small humorous events, I shall also comment and give my insight. Throughout, I have endeavored to tell the events as they happened, and I use the actual names of every person, place and detail.

I wrote this book for my family, friends, and others who might be interested in my life story with a focus on my professional development. Perhaps you too will enjoy reading how I grew up in the Germany right after the War, how I left Germany after my school education, in the early 1960s, how I ventured, through a myriad of events, to South Africa, Canada and the US, and how I found much happiness and success, with my family, as a Professor

at M.I.T., leading my company ADINA R & D, and in my endeavors to enrich life.

While I largely focus on my life story, I hope that this book will also contribute a little in telling how much — in general — engineers have accomplished to enrich life on our planet!

KJ Bathe

St. Barth, 2007



## Chapter 1 My Infancy

I was born in May 1943 in the middle of the Second World War, in Berlin, Germany, two years after my brother Volker, and six years prior to my sister Ingeborg. I remember nothing of the Berlin at that time. All I can recall of my very early years is what my dear mother told me over many years at a later age.

My mother told me, prior to her passing away in 1998 at the age of 84, that I was a very quiet baby. I hardly cried and mostly slept. During these years of the War, Germany proper and the German occupied lands were of course under attack. And one day, in Lissa, today's Leszno in Poland, my mother had forgotten that her quiet baby was still in the garden in the baby carriage. I was sleeping in the garden during another airplane attack, and did not wake up. That seemed to have been many times the case. Indeed at some occasion, I was sleeping in the garden and forgotten by everybody.

This ability to sleep soundly even when severe events occurred did not last many years. While I certainly could, and would, take a lot of pressure later in my years, my ability to take it easy, and soundly sleep through 'pressured times' is long time gone.

My mother spent much time in Berlin with her two children, while my father was at the Russian front. My grandmother from my mother's side died shortly after the War in Berlin from hunger. Of course, I cannot remember her. Her husband, my grandfather



Our parents with Volker, left, and myself

Günther Martini, after then leaving Berlin finally found refuge in a small village, called Dinklar, near Hannover. He had been a high-ranking Navy officer during World War I but retired from the Navy and became a journalist before Hitler came to power. I

always had a tremendous admiration for my grand-pa. He had been a very successful Navy officer with commands over many large



My grandfather Günther Martini

battle ships during his career. I still remember photos of about a dozen ships he commanded, photos that my mother inadvertently

lost or discarded during one summer while I was on travel, far from home.

However, what perhaps impressed me most, later on, was that my grand-pa Martini was very much against Hitler and the Nazis. In fact, he warned my mother, his only child, that Hitler will do bad, very bad. How right he was! My young mother and father, unfortunately, were under the spell of Hitler and did not listen. My mother was simply in awe with the new exciting life in the 1930s, but my father clear-mindedly took part in the new movement in Germany. He only rather late realized the terrible nature of Hitler. I never understood why it took my father that long to realize that Hitler was bad for Germany and the world.

On my father's side, my grand-pa died as a young person, and I only saw pictures of him. He had been a high-school teacher, and had obtained a doctorate, which in the early 1900s was a tremendous achievement. His wife, my grandmother was a very quiet, religious and thoughtful person. In my teens, I developed a very special relationship with her, as I shall describe later.

My mother many times told me that she left Berlin with my brother and myself on one of the last trains from Berlin to the West of

Germany. The train was only carrying women and children, and wounded people, and it was clearly marked as a Red Cross train. However, on the way to the West of Germany it was attacked by British fighter planes which indiscriminately shot at the train wagons and at the people, who, when the train stopped, tried to flee into the forests. My mother was struck by this experience. We were lucky to make it through to the West, where after a stay with friends we finally settled on a farm in Borsum, not far from Dinklar, where our grand-pa Martini had found refuge. These villages are close to Hannover, the capital of Lower Saxony.

I remember that the times in Borsum were hard. Mostly we ate sugar beets, potatoes, nettles as spinach, and perhaps once a week an egg. There simply was no food available.

Early after the War, Gisela, a sister was born. My mother tried to obtain food and soap, and went to beg for it at the British garrison because Gisela was becoming rapidly weak. Unless better fed, she would clearly not survive. However, the officers refused to give any help. Gisela passed away shortly thereafter.

This experience with the British soldiers made us very sad. Of course, Germany was the cause of all pain inflicted onto many

people, but still, I could not understand why the soldiers did not help my mother and sister on a personal level, now that the War was over. Here I learned that it is very important to be able to forgive in life — although that can be very difficult — but doing so can much enrich life.

However, while these experiences are part of my life, I never had any bad feelings towards the British people and have made many friends among them. In fact, it is clear that the British have made great contributions to our life on this planet, including their efforts and sacrifices in the two World Wars.

My father had studied law. He obtained first a job as a clerk in the new German government, but later advanced to finally reach a much respected and quite well-paid position, called Ober-regierungsrat. This meant, however, that we moved about every three years, first to Sarstedt, then to Hannover, then to Osnabrück, and finally to Oldenburg i. O., where I graduated from high-school and left Germany for other shores. But before telling about those years, I shall tell a little more about my growing up in Germany.

The author, born during World War II, grew up in post-war Germany, left his home in the early 1960s for South West Africa (today's Namibia) to work on a farm, ventured to South Africa, worked in a gold mine and on road construction, studied at the University of Cape Town, went to Canada and the US for graduate studies and through a myriad of events finally became Professor at the Massachusetts Institute of Technology. While Professor at M.I.T. he founded the company ADINA R & D, which develops the software product ADINA used world-wide



for the analysis of engineering designs and, in general, for the prediction of nature. The author tells about his life, how he grew up and developed in his profession, with the dream to enrich life through his activities, and how he found much happiness and success.

ISBN: 978-0-9790049-2-6

