

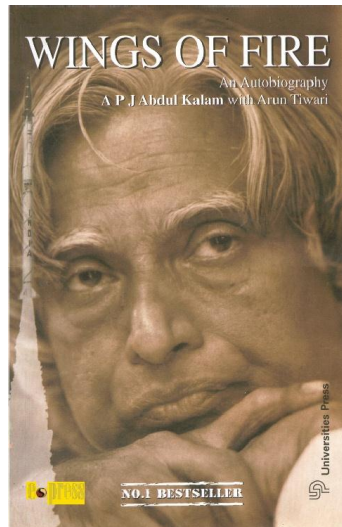
**LANGUAGE IN INDIA**  
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**Abdul Kalam : A Complete Man**

S. Somasundari Latha, M.A., M.Ed., M.Phil.

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**A Boy from Deep Rural South**

Arul Pakir Jain Ulabdeen Abdul Kalam's autobiography *Wings of Fire* is an excellent inspiring book. It gives a positive message to the frustrated people of India. Kalam's *Wings of Fire* describes how an innocent boy from a remote corner of Tamil Nadu achieved greatness in rocketry and missiles technology and thereby raised his country's

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position in this applied science and technology to the international standard. This book delineates how Kalam, a boy from rural background, without any influence, with his positive attitude and hard work and perseverance was able to attain the highest civilian award in India, the Bharath Ratna. Kalam's humble ways of observing and admiring stalwarts like Dr. Vikram Sarabhai and Dr. Brahm Prakash, and learning skills like leadership quality and time management is really remarkable. No doubt, Kalam is a charismatic person, a combination of scientific endurance and human diligence who can inspire people in the world irrespective of age, caste, creed, religion and country.

### **Structure of *Wings of Fire***

*Wings of Fire* has a preface by Arun Tiwari who worked under APJ Abdul Kalam for over a decade in the Defence Research and Development Laboratory (DRDL), Hyderabad. The book consists of four parts, namely, Orientation, Creation, Propitiation and Contemplation, and ends with an epilogue by Abdul Kalam.

There seems to be a deliberate attempt on the part of the author and collaborator of this book to bring in an aura of spirituality even as the topic deals with a man whose major work was in the fields of science and technology. The spiritual orientation is truly represented in the naming of the parts of the book.

### **The Beginning – Orientation or Initiation?**

'Orientation' (1931-1963) starts with a quote from Atharva Veda (book 4, hymn 16):

The earth is His, to Him belong those vast and boundless skies;  
Both seas within Him rest, and yet in that small pool He lies. (p.1)

It is a surprise that the great scientist's autobiography starts with a kind of prayer. Abdul Kalam was born in the island town Rameshwaram, Tamilnadu. His father Jain Ulabdeen was neither rich nor educated but had innate wisdom and generosity of spirit. His father avoided comforts and luxuries and lived a simple life. Kalam's parents were an ideal couple. Kalam recalls how Hindus and Muslims lived together amicably in that locality. It was Kalam's father who inculcated in him the faith in God. Kalam has three brothers and a sister. His companionship with illiterate Jallaudin and Samsuddin provided him with a lot of practical knowledge. In his childhood, Ramananda Sastry, Aravindan and Sivaprakasan, boys from Hindu families were his close friends.

The high priest of Rameshwaram temple, Pakshi Lakshmanasastry was a very close friend of Kalam's father. When Kalam was in the fifth standard at the Rameshwaram Elementary School, a teacher was unable to tolerate a Hindu priest's son Ramanandhasastry sitting with a Muslim boy Kalam. Kalam was asked to go and sit on the back bench. When this matter was brought to the notice of the respective parents, Lakshmanasastry asked the teacher not to spread the poison of social inequality and

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communal intolerance in the young minds. Such was the context, both amity and conflict, in which Kalam grew up. However, we also read that there were people who were keen to maintain communal amity.

Kalam joined Schwartz High School in Ramanathapuram. Though he was home sick, Kalam tried to concentrate on his studies. In Schwartz School, his teacher Iyadurai Solomon inspired Kalam by instilling in him a sense of self-esteem and self-worth. It was he who suggested to Kalam that he should have intense desire and motivation in order to achieve a particular thing.

In 1950, Kalam arrived at St. Joseph College, Trichy to study B.Sc. Physics. Kalam was much interested by Father TN Sequeria who taught English to him and he was also the hostel warden. Kalam developed an interest in reading the great classics of Tolstoy, Scott and Hardy. Kalam's ability to correlate the powerful and energetic planet with Milton's description of the world in Paradise Lost Book VIII shows his proficiency in poetry.

“...What if the sun  
Be centre to the world, and other stars...  
The planet earth, so steadfast though she seems  
In sensible three different motions move? (p.15)

### **Yearning to Fly**

On seeing cranes and seagulls soar into flight into Rameshwaram, Kalam longed to fly in the sky. To realize his dream, after his B.Sc., he got admission into Madras Institute of Technology (MIT). He emotionally recalled how his sister Zohara has mortgaged her jewels to pay one thousand rupees as fees. Since he was very clear in his goal of flying aircrafts, he opted for aeronautical engineering in his second year.

Kalam recalls three stalwarts who shaped his professional career. Prof. Sponder taught him technical aerodynamics. He used to observe Indians' failure to discriminate between disciplines and to rationalize their choices. During the farewell function, Prof. Sponder summoned Kalam to sit with him in the front for a photograph. Since Prof. Sponder was sure that Kalam's hard work would bring laurels to the teachers in future. Yes, his prophecy came true. Prof. K.V. Pandalai had opened up the secrets of structural engineering to him. Prof. Narasimharao taught him theoretical aerodynamics. These teachers, with their intellectual fervour and clarity of thought, inspired Kalam to have a serious study of fluid dynamics.

Kalam attended the interview in Air Force as well as in DTD&P [Air] (Directorate of Technical Development and Production) of the Ministry of Defence. Upset by not getting selected in his air force interview, he met Swami Sivananda in the Sivananda Ashram. When Kalam shared his unfulfilled desire to join the Indian Air Force, Swami Sivananda looked at him calmly and said to him in a feeble voice:

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Desire when it seems from the heart and spirit, when it is pure and intense, possesses awesome electromagnetic energy. This energy is released into the ether each night as the mind falls into the sleep state. Each morning it returns to the conscious state reinforced with the cosmic currents. That which has been imaged will surely and certainly be manifested. (p. 25)

Swami's words filled him with confidence and peace and he collected his appointment order and joined DTD&P as senior scientific Assistant. In Bangalore, Kalam had the responsibility to make air-flying machine with his team. Kalam's first hover craft was christened Nandi. Then Kalam was absorbed as a rocket engineer at InCosPAR (Indian Committee for Space Research). In 1962, when InCosPAR set up the equatorial Rocket Launching Station at Thumba, Kalam got an opportunity to go to America for a six month training programme on sounding rocket launching techniques at the National Aeronautics and Space Administration (NASA) work centers. Kalam's strong spiritual foundation provided him with enough courage to proceed in his career.

## **Creation**

The second part Creation (1963-1980) deals with the creation of SLV – 3 and Devil Missile with Kalam's achievement of Padma Bhushan Award.

It is surprising to know the historical fact from Kalam that Tipu Sultan had 700 rockets and subsystems of 900 rockets in the battle of Turukhanahally in 1799. Kalam had an overwhelming admiration and appreciation for Prof. Sarabhai's working methodology. Prof. Sarabhai was optimistic, a hard task master, who often assigned multiple tasks to a single person. He would try novel approaches and a great leader.

Kalam with his team was assigned the task of preparing satellite launch vehicle and Rocket-Assisted Take-off-System (RATO). In 1968 when Prof. Sarabhai paid a visit to Thumba, Kalam asked him to activate the pyro-system through a timer circuit. Unfortunately the timer did not work. This incident taught Kalam that the best way to prevent errors was to anticipate them. The failure of the timer circuit led to the birth of a rocket engineering laboratory. Kalam regards Prof. Sarabhai as the Mahatma Gandhi of Indian science who generated leadership qualities in his team and inspired them with ideas and examples.

Kalam was appointed as the project manager for SLV and reported directly to Dr. Bhahm Prakash. After taking up the executive responsibility of implementing the project Kalam had a clear time schedule for carrying out various works since this project had made great demands on his time.

In order to lead a team successfully, the leader should be independent, powerful and influential. Kalam suggests two techniques in this regard.

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1. Build your own education and skills, since knowledge is a tangible asset.
2. Develop a passion for personal responsibility. Be active, take on responsibilities. (p.77)

Kalam understood the fascinating mysteries of science while working for SLV project. Though the loss of his relatives, Jallaludin, his father and mother, one after another had shaken him, he was able to overcome the grief, with divine power. Kalam hears a divine voice insisting his commitment and responsibility in this world.

They carried out the task I designed for them with great care, dedication and Honesty and came back to me. Why are you mourning their day of Accomplishment? Concentrate on the assignments that lie before you, and Proclaim my glory through your deeds. (pp. 86-87)

After a lot of hurdles, on 18 July 1980, SLV-3 lifted off from SHRA successfully. Kalam and Prof. Dhawan met Shrimati Gandhi, the Prime Minister. Indira Gandhi lauded his achievement. It was a happy moment when he received Padma Bhushan award on the Republic Day in 1981.

### **Propitiation**

The third part Propitiation (1981-1991) begins with a few lines from Lewis Carroll.

Let craft, ambition, spite,  
Be quenched in Reason's night,  
Till weakness turn to might,  
Till what is dark be light,  
Till what wrong be right (p.107)

Kalam's joining DRDL on June 1, 1982 was a milestone in his career. Kalam realized that his scientist colleagues were still haunted by the failure of the Devil Missile. To inspire the scientists working there, Kalam invited experts from the Indian Institute of Science, Indian Institute of Technology, Council for Scientific and Industrial Research, Tata Institute of Fundamental Research and many other educational institutions.

With Defence Minister Venkataraman's initiative, Rs. 388 crores were sanctioned for surface-to-surface weapon system (Prithvi), the Tactical Core Vehicle (Trishul), the surface to air area defence system (Akash), the anti-tank missile project (Nag) and the last one Agni (Fire).

In this section Kalam mourns the death of Dr. Bhahm Prakash and Indira Gandhi as a huge loss to scientific community. With the successful launch of Prithvi, Agni, Nag and Akash, India found a significant place at the international level.

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The verb *propitiate* means “to receive the goodwill of, to stop from being angry, to appease or reconcile those in power” (*Dictionary New Encyclopedic Edition*, 2004). This section deals with his contacts and acts in his career. It is true that Kalam was blessed with many supporters, admirers and followers in his career as a missile technologist. His handling of higher authorities was also appropriate in the context that prevailed/prevails in India. It looks like that the intent of using the word *Propitiation* for this section was not only to indicate his good relations with all around him but it also indicates his total dedication to his career, goals and spiritual pursuits as a single person.

### **Contemplation**

The fourth part titled Contemplation begins with a quote from the Qu’ran.

We create and destroy,  
And again recreate  
In forms of which no one knows (p.157)

On the Republic Day in 1990, Kalam was conferred the Padma Vibhushan along with Dr. Arunachalam. Though Kalam received so many awards from various universities, this one is significant because at that time our nation was celebrating the success of its missile programme. Towards the end of 1990, Jadavpur University gave him the honour of Doctor of Science. Kalam was excited to find out that the legendery hero Nelson Mandela also received the Doctorate along with him. In his acceptance address, Kalam once again recalled the stalwarts who inspired and guided him in achieving his missile mission. He justified that rocket mission and missiles are essential for the security of our nation. He concludes the autobiography with a positive note that Self Reliance Mission and Technology Vision-2020 will make our country strong, prosperous and a developed nation. (p.180)

Kalam’s positive approach to life elevated him from Rameshwaram to DSRO, Hyderabad. From there he went to many places, met many leaders. Ultimately it brought him back to a locale closer home, in Kerala.

The autobiography clearly reveals Kalam’s spiritual moorings even as he worked hard to reach greater heights in his chosen field of missile technology. He was fully engaged in the development of technology that is double-edged: it could kill millions even as it could save millions in times of war. It could help exploring the vast universe and could even be an instrument for humility in individual lives. His awards were meant for developing missile technology in the context of India’s self-defence against possible and probable war mongering and belligerence from other nations. In real terms, he was and is on the Wings of Fire which could burn and destroy and yet would illumine the world and give it the much needed warmth. Dangerously close to the disastrous effects, Kalam was and is aware that this dangerous bent could still be used for the benefit and betterment of

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humanity. He sounds that this realization was not solely based on reason, but in seeking spiritual experience and wisdom.

Sometimes when we are ready, the gentlest of contacts with Him fills us with insight and wisdom. This should come from an encounter with other person from a word, a question, a gesture or even a look..... without the slightest warning, something new breaks into your life and a secret decision is taken, a decision that you may be completely unconscious of, to start with. (p.49)

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