



## Book Review

Sandeep Bali\*

A. Sivathanu Pillai, *The Path Unexplored, Success Mantra of BrahMos*. New Delhi, Pentagon Press, 2014, 205 pp., ISBN 978-81-8274-803-3.

There arrive certain moments in a nation's history that significantly enhance its stature in the community of nations and enable it to leverage this in global geopolitics. One such recorded and acknowledged moment for India was the development of its supersonic cruise missile BrahMos, as a joint venture with Russia, and its subsequent integration into the Indian Armed Forces. It is only logical and natural to recall the journey and celebrate the success of the mission with this book.

This volume is a first-witness account by Dr A Sivathanu Pillai, the erstwhile CEO of BrahMos Aerospace, and is aptly titled *The Path Unexplored, Success Mantra of BrahMos*. Being one of the leading actors and a prominent witness of those fateful years, which led to the successful fruition of the technological marvel, his narrative stands out on a factual matrix as well as a first-hand authoritative analysis. The volume has an interesting structure, as it is a mix of an autobiography and a concise historical account of India's missile programme, with detailed emphasis on the uniqueness of Indo-Russian BrahMos joint venture, a one-of-a-kind, successful defence cooperation in the world.

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The brief preface, elucidating the genesis of the idea to write this book, provides a glimpse of the perceptive side of the author, wherein he describes his contemplation in the Arabian Sea onboard an Indian warship after the successful launch of the prototype of BrahMos missile. Pillai emphasizes that despite India's glorious history of excellence in the field of mathematics, science, engineering, technology, medicine, astronomy and cosmology, it is the lack of documentation that has led to India's weak bonding with yesteryear achievements. The book therefore aims to reach out to the future generations, to provide them an opportunity to revisit the "sweat and grind", as well as the "trials and tribulations" that led to achieving the stellar success of BrahMos. In the author's words, "India needs to record and preserve knowledge, and it is knowledge that will help our progeny" [*sic*].

In the first three chapters, the author offers a lucid, step-by-step account of the genesis of the Indian missile programme and the challenges faced by the scientific community in the light of Missile Technology Control Regime (MTCR). Pillai uses history to weave and highlight a vivid account of the grit, determination and vision of the missile programme pioneers especially Dr APJ Abdul Kalam, who, despite tremendous constraints, succeeded in leapfrogging the Indian missile programme to world-class standards. This paved the way for the country to attempt a joint venture of the scale of BrahMos with technologically advanced Russia, which has a long history of developing sophisticated weapon systems.

He also attempts to explain to the uninitiated the threats that India faces as a nation, both strategically and geopolitically, and the inescapable need for the country to embark on an effective missile programme. The author showcases the fact that the policy makers were convinced with the success of missile attacks and the stellar role played by the "Tomahawk Missiles" during the Persian Gulf War. This led to the development of one of the fastest cruise missiles and delivery systems in the world. He also briefly touches upon the historic Indo-Russian relationship and Russia's contribution to India's economic development and military modernization since India's independence, which made Russia the natural partner for this joint venture. Pillai also gives a background to the circumstances that led to NPOM, the leading design bureau of Russia, being chosen as partner for the joint venture.

The subsequent chapters cover a step-by-step rendition of the journey of BrahMos right from the design stage to the various successful flight trials. The author attempts to reach out to a wider audience by simplifying the technological jargon and explains in layperson terms the intricate technology involved in the missile system. The concluding

chapters briefly outline the vision for the future generations and the author emphasizes that self-reliance is the only solution for India to cement its place in the world. Hence, policymakers need to pursue the development of a robust military industrial complex. He signs off with a word of advice for his teammates at BrahMos Aerospace and the chapter is aptly titled “A Word from the Captain”.

The book comes out to be an honest, anecdotal and a chronological description of development of a complex missile system, wherein the objectivity of the narrator is maintained throughout the book. The author, being a distinguished luminary, could have easily fallen in the trap of self-adoration. On the contrary, the narrative reaffirms the modesty associated with illustrious achievers that distinguish them from the ordinary folk.

The book, however, falls short in addressing the perpetual dilemma faced by the Indian decision makers for decades since independence – how to bridge the paradox of promoting self-reliance and indigenization vis-à-vis equipping the defence forces with cutting edge technology. Despite stellar success in the Indian space and ballistic missile programmes, the DRDO’s performance in meeting the requirements of the armed forces has been suboptimal. The success of BrahMos may hold a new promise, which can be replicated to bridge this Cartesian divide. One wished that Dr Pillai with his vast and enriching experience could have offered a fresh perspective and a solution to this ongoing predicament.

An observation that will interest India’s maritime community is that it is amply evident that the author has lost his heart to the “Sea”. Ostensibly, during his historic missile trials onboard Indian warships, his interactions with the Indian Navy were immensely satisfying for him and nearly all book chapters are peppered with a naval “patter”, and are accompanied with intricate illustrations of sailing vessels.

To conclude, the book is worth reading by the uninitiated for gaining a glimpse into the challenging lives of the Indian scientific community delivering robust technology against difficult odds. The book is equally important for cynics to understand that Indian scientists are amongst the best in the world, and are capable of surmounting the greatest challenges to deliver a world-class product for the nation. Last but not the least, the book must be read by the policy makers to acknowledge that the need of the hour is to nurture world-class organizations and industry, to enable young scientists and the technological community to develop a robust symbiotic relationship for catapulting India to the apex of global technological leadership.