



Dr. Tessy Thomas

Missile woman of India

(Born April 1963)

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It was the year 2014. Just a few days were left for the test launch of another prestigious AGNI missile of our country. Things did not go as expected, and there were more than 100 scientists working in different teams. A few seconds went by! "Failure should be considered as the first attempt in learning. After putting so much of work, sometimes we may miss the taste of success."

"We cannot afford to sit and brood over the hard work of so many scientists. It is our responsibility to figure out what went wrong to make the next attempt a successful one. And this is what science and technology is all about! There is always scope for learning and improvement, to find scientific solution. This is where one needs to develop inner strength and confidence, especially when you want to become a scientist!", Dr. Tessy Thomas, their leader

invigorated everyone to focus on what was necessary to accomplish their mission. Known as the **Missile Woman of India**, she has been an epitome of perseverance, teamwork and leadership.

Born in Kerala in 1963, life was not easy for her, as in every middle-class family. Her mother was a trained teacher but could not take up a job due to family responsibilities, while her father was an accountant. But they ensured all their five daughters and son had the freedom to study and aspired for a meaningful life. Her mother devoted her life to bringing them up and nurturing them with values. Along with love for science and maths, they were taught to savour every moment, which helped Tessy to focus on what is at hand, accepting the reality. Dr. Tessy recalls, "They encouraged us to be part of every opportunity we got, it could be



visiting a science exhibition, be part of it or go for science tour. That's how I got an opportunity to visit rocket launching station at Thumba, Thiruvananthapuram where my uncle lived. Those are very memorable moments etched in me. That fascination helped me to choose this path. I would always say these experiences we face as children are very important and this is where we need to focus."

Young Tessy obtained her B.Tech in Electrical Engineering from Calicut University. "When I first moved from my small town to Tiruchur to do my engineering in a government college, there were challenges - big and small in all forms. Even hostel food comes with its own plus and minus. I never used to bother much about any of these and managed with pickles and podis brought from home or anything that was palatable.

I would say all these are part of growing up. Nothing should matter, if we are focussed on our learning spree. Face every challenge, as these should not deter anyone from pursuing bigger life goals." In her final year, she learnt about application of RADAR system which inspired her to do M.E. in guided missiles from Institute of Armament Technology (now Defence Institute of Advanced Technology), Pune. Later she joined IAT, Pune as a faculty member in Guided Missiles in the year 1986. Soon after completing her Masters, she continued in the same institute as faculty member before moving to DRDL, Hyderabad in 1988.

She obtained her Ph.D in Missile Guidance from Jawaharlal Nehru Technological University (JNTU), Hyderabad. "Being in the field of defence research, our job is not a 9 to 5 job, especially

while doing research. Fabricating and designing something for the first time is always a challenge. The output may not be exactly the same as you might have expected.

Most importantly the mission in front of us has a bigger cause; whatever we do, it is for our country's defence requirements. This understanding of what we are working for, gives us the inner strength to do more and more. Self-motivation, decision-making abilities, 'I have to do' mind-set gives us the necessary strength to complete this mission laid in front of us. Also, this definitely needs support and understanding from the family," asserts Dr. Tessy Thomas about perseverance one needs to build to become a scientist.

Dr. Tessy Thomas has been associated with AGNI Programme right from its developmental flights. She has designed the guidance scheme for long range missile systems which is used in all AGNI missiles. Under her guidance, an energy management guidance scheme was designed and developed for the first time in the country for an all-solid propelled long-range systems, for which she was conferred with AGNI self-reliance award in the year 2001. She has contributed in various fields such as guidance, control, inertial navigation, trajectory simulation and mission design. She served as the Project Director for the AGNI IV and V missiles, making her the first woman to lead missile teams in India. These are intercontinental ballistic missiles that have very high ranges.

Every nation's progress depends on its science and technology capabilities. Dr. Tessy asserts the importance of application of science as a tool to handle local





as well as global issues. She says, "Once a person understands science, it becomes much easier to use it as a tool. For an outsider, they may say that scientists are carrying a very heavy burden; but the truth is it is not so, if you are dedicated!" She held various roles and responsibilities that led to the development of strategic missile systems from 2014 to 2018. Eventually, she took over as Director General (Aeronautical Systems) in 2018.

"I always keep saying that science has no gender. You work as

a scientist, not as a woman. It is the knowledge that matters. Of course, women do need support system and nothing should hold anyone from doing science. Perseverance and determination are something I learnt from my mother which has made me what I am today." She recalls her mother's words, "Answer to life is always YES. This is the only life you have and make the best out of it. You should not regret about the things you could not do, because you are afraid of trying. Take every opportunity that comes in your way as blessings! Consider risks as challenges and find solutions, that's when life becomes interesting. And when those challenges help society, then life becomes purposeful too."

Awards/ Accolades

2007 - DRDO award for Path breaking Research / Outstanding technology development

2008 - DRDO Scientist of the year

2011 - DRDO Performance Excellence Award for AGNI-4

2012 - DRDO Performance Excellence Award for AGNI-5

2014 - Dr. Y. Nayudamma Memorial Award

2016 - Distinguished Woman Scientist Award for her contributions in the field of Missile Technology by Andhra Pradesh Science Congress, Andhra Pradesh Academy of Sciences.

2019- Doctor of Science (Honoris Causa) from IIT, Kanpur

Many illustrious institutions speak of her contribution to the society through science and technology. These awards are testimony of her conviction and how she has handled every challenge. One needs to be prepared to take these challenges! There is no shortcut to success!!

