CHAPTER 6

SCOPE FOR FURTHER RESEARCH
AND CONCLUSION
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6.1. Scope for Further Research

Our ancient texts have a treasure hidden in them. The concept of ‘Thought powered aircraft’ described in the Ramayana and Mahabharata is currently in experimental stage. Research in this area definitely can bring in wonders in the Aviation industry. Research is happening on Vymanika Shastra since past five to six decades. There is a lot to explore in each and every chapter of Vymanika Shastra. By reading the materials used in the preparation alloys, purification of metals, achieving the special features using mirrors, lenses and crystals it seems silly for us but definitely there is something hidden there. Only when subject experts in all the fields collaborate and carry out the research we can uncover the hidden treasure in Vymanika Shastra. We have just explored a handful of water from the ocean and the entire ocean of knowledge is open for us to fetch whatever we can. A few of the areas where we will have to explore are listed below.

- Vymanika Shastra which we currently have does not seem to be complete. Even though it describes in detail about various features and components of Vimana, materials used in the construction of the various contrivances of the vimana, steps to manufacture various contrivances, technical details regarding the functioning of various contrivances it does not detail the complete steps required to construct the Vimana using all the contrivances described. Definitely there should be a manuscript which can give us this missing link. Searching for manuscripts which have details regarding ancient vimanas and technical details of their construction is definitely an area where we have scope for further research. There are more than forty texts which are quoted in Vymanika Shastra, if we can find them definitely we will get the missing link to design the Vimanas described in Vymanika Shastra.

- Many of the materials used in the purification of metals, preparation of various oils and decoctions for electric propulsion are not easily available today. We really do not know whether those materials described are actual materials or code names for some other
materials. If we can decipher the components of the actual materials and try out with the alternatives currently available, we can observe the outcome and come up with our findings.

- Detailed study of various layers of atmosphere and different air routes described might help us to understand our atmosphere better and achieve safe flights avoiding air crashes.

6.2. Conclusion

As a part of this research we have studied the description of Vimanas in various ancient Indian texts like the Vedas, Ramayana, Mahabharata, Srimadbhagavatam, Vymanika Shastra and Samarangana Sutradhara of Bhojadeva and tried to conceptually compare the features of these ancient Vimanas with Modern aircraft. We have studied various research papers on ancient Vimanas and also advanced research articles and research papers on concepts like ‘thought powered aircraft’ which are published by researchers across the world.

- Vehicles with different modes of transportation described in Rig Veda can be compared with our modern amphibious aircraft, assault amphibious vehicles, three storeyed Sky Whale, air flyers which has three wheels in landing gear and power driven vehicles.

- The concept of “Thought powered aircraft” or “Kaamagam Yaanam” is used in the Vimanas described in Ramayana and Mahabharata. This can be conceptually compared with “Thought powered aircraft” being researched by researchers from the University of Minnesota, USA and Technical University of Munich, Germany.

- When have wonderful description of luxuries and ambiance of Hiranyapura and Indra’s aerial chariot described in Mahabharata, Saubha Vimana in Srimadbhaagavatam and Pushpaka Vimana in Ramayana. The concept of luxuries and interior designs described in these ancient texts can be compared with the trending concept of luxurious planes. Even though those descriptions were suitable for that era our modern, luxurious planes have similar interior designs and comforts suitable for the contemporary world.

- Destruction caused by Hiranyapura and Saubha Vimana described in the Mahabharata and Srimadbhaagavatam can be compared with those caused by huge bomber aircraft in modern wars.
• Destruction caused by astras used in Mahabharata and Salva’s war against Vrishnis can be compared with the destruction caused using Nuclear weapons. It even reminds us of the destruction caused during the nuclear disaster of Hiroshima and Nagasaki.

• Description of size of the Airport Terminal at Indra’s Amaravati can be compared with many times the size of the King Fahd International airport, Saudi Arabia. It is described that Arjuna has seen thousands of aircraft parked and hundreds of aircraft taking off and landing at the airport terminal of Indra’s Amaravati. This is something which is beyond our imaginations.

• Concept of Mercury being used as a propellant in Vimanas is described in the text Vymanika Shastra, a similar concept is mentioned in Alaghu Daaru Vimana described in Samarangana Sutradhara of Bhojadeva. Even NASA has tested the ion thrusters which use mercury as a propellant. They have successfully tested Suborbital flight of this engine in SERT-1(Space Electric Rocket Test-1) on 20th July 1964. But later have found out the residue generated by mercury is hazardous to health and the environment and hence started using Xenon.

• Alaghu Daaru Vimana described in Samarangana Sutradhara of Bhojadeva can be compared with Hastiyantra described in Kautilya’s Arthashastra which can be used to scare away the elephants in battle field.

• Special features of aircraft described in Vymanika Shastra such as Goodha, Adrishya, Sankocha, Vistrita, Roopantara, Parashabda Graahaka etc. are very interesting features which can be compared with Stealth features in modern aircraft.

• Different layers of the atmosphere and the aerial routes described in Vymanika Shastra for the travellers in all the seven lokas show the depth of understanding our ancestors had on our atmosphere.

• The descriptions of metals and the preparation of alloys described in Vymanika Shastra shows the knowledge which our ancient scholars had on metallurgy. The description of materials used shows that our ancient scholars were trying to achieve whatever they want in an environmental friendly way by using materials naturally available to them during that period. The description of various Vyaasatikaas and crucibles used for melting metals shows the depth of knowledge our ancient scholars had in that area.
• The descriptions of various mirrors and lenses in Vymanika Shastra shows that our ancient scholars were trying their best to use solar energy to achieve whatever they want using mirrors and lenses as reflectors.

• Description of various yantras in Vymanika Shastra and Samarangana Sutradhaara of Bhoja deva shows that our ancient scholars had the knowledge of building various machines to achieve the complex functioning.

• Yuga Dharma based classification of Vimanas shows that during Tretha Yuga our ancient scholars were capable of achieving complex functions using their mind or concentration power, then in Dwaapara Yuga once that power got diminishing they could achieve the similar functions using tantric or technical means and finally in Kali Yuga when both Maantric and Taantric powers starting diminishing they started achieving them through Kritaka, i.e. artificial of mechanical means.

• The descriptions of Kritaka Vimanas like Shakuna Vimana, Sundara Vimana, Rukma Vimana and Tripura Vimana given in Vymaanika Shastra are not complete. With just that information aircraft cannot be constructed. Detailed research is required to uncover the hidden knowledge in this area.

• We not only have descriptions of ancient Vimanas, rockets and spacecraft, but also have carvings of them in ancient heritage sites across the world. Even if we argue that the descriptions in ancient texts are imaginary, these carvings shows that our ancient sculptors had even visualized these aircraft, rockets and spacecraft. Aircraft carvings on the ceilings of Seti I temple in Cairo and ancient gold model of aircraft found at Bagota Gold museum in Columbia resemble our modern aircraft. Ravana’s aircraft carving at Ellora Cave number 16 can be compared with Modern Jetpack. Carvings on the tower of Ganesh Ratha at Mahabalipuram resemble modern rockets. Various Ramayana based vimana carvings at Hampi Hazara Rama temple and Kailasa temple at Ellora shows the artistic representations of the Pushpaka Vimana by our ancient sculptors.

• Study of research on ancient aircraft by Chinese and Greek scholars and many other scholars across the world shows that people across the world were researching on constructing the aircraft and flying in the air like birds since hundreds of years.

• Even though we are proud that the first unmanned aircraft developed by Prof. Talpade flew in air eight years before the first manned aircraft Wright Flyer developed by Wright Brothers,
it is unfortunate that Professor Shivkar Bapuji Talpade and Subbaraya Shastry did not get the required support and funding to go ahead with their research. We really appreciate the efforts by them in achieving the flight of Marutsakha with all their shortcomings. If they would have got the required support, we would have got a very valuable contribution to the society by them. At the same time the efforts by Wright Brothers to build Wright Flyer is not small and is definitely something which should be appreciated. It is only because of the concept of ‘Roll’, ‘Pitch’ and ‘Yaw’ introduced by them our aviation industry has grown this wide today.

By comparative study on all the above aspects we can understand that there are conceptual similarities between Modern Aircraft and Ancient Aircraft, aviation science of ancient era and advanced aircraft technology. It is up to us to believe if the descriptions in our ancient texts are real or imaginary but in both the cases contributions of our ancient scholars to our society is highly appreciable. We do not have sufficient proof to prove the existence of ancient vimanas, and understand how the technology prevalent during ancient era was wiped off as the eras passed by. But with the available literature we understand that they have described wonders which our current scientists and researchers need next hundred years to bring it to reality.