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The Wheels of Ancient Sciences

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Abstract

The wheel was known to mankind for ages. We all know wheel for land, however, there is no wheel for air and water known to modern science. There is a high probability that Wheels for air and water (also known as compact and scalable hub cycloid propellers) are known to ancient sciences and most likely used them in making ancient vimanas as per the Vimanas shastra. This paper explores the possibilities of using a compact hub cycloid wheel (aka. SunPlower Propeller) for Rukma and Shakuna Vimanas and questions if this technology might have been known to ancient science in the past? Keela Shanku is mentioned many times in Brihad Vimana Shastra, what does it mean?

Keywords: Ancient Wheel, Cycloid Propeller, Kirsten Boeing Propeller (KBP), SunPlower Propeller (SPP), Propulsion Technology, Vimana Shastra, Rukma Vimana, Shakuna Vimana, Keela Shanku.

Introduction

The wheel (origin of a German word Rad is Ratha [रथ] from Sanskrit) is known to humans for ages, we have fine-tuned and perfected it. It is a widely used model of transportation on land. However, for air and water, we still donot have a wheel. We use a screw which will screw/cut (birds and fishes) through air and water. A screw propeller needs about 10 to 15 times more rotations to cover the same distance by a wheel in one rotation of the same diameter. The current day socalled modern science does not know how to use a compact and effective wheel in Air and Water. Now the question is: Does ancient science already knows and used wheels for Air & Water applications in the past? In Brihad Vimana Shastra [1], there are several references to Keela Shanku [कील शंकु] what is it?

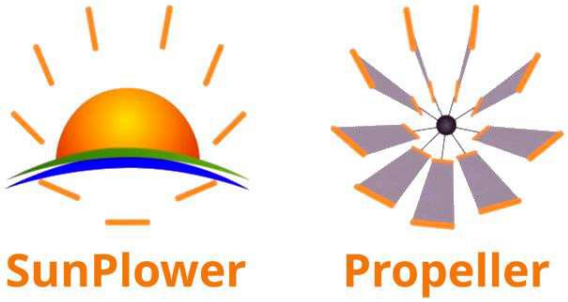
Mukunda *et al*., [2] came up with a baseless conclusion without studying and understanding the science behind ancient flying machines because modern science does not have the technology to make these advanced ancient flying vimanas explained in a highly encrypted Sanskrit text in Vimana Shastra [1, 3], which is considered to be more than 6000 years old advanced technology.

There are multiple meanings or advanced encryption methods used in ancient texts to avoid the misuse of technology. It's a concept of protection from mass destruction. This can lead to incorrect and sometimes absurd interpretations and translations, by people without sufficient technical expertise and cross-domain knowledge. The best example is scientifically proven Agastya Battery Technology shlokas from Agastya Samhita:

संस्थाप्य मृण्मये पात्रे ताम्रपत्रं सुसंस्कृतम् ।
छादयेच्छिखिग्रीवन चार्दाभिः काष्ठापांसुभिः ॥
दस्तालोष्टो निधात्वयः पारदाच्छादितस्ततः ।
संयोगाज्जायते तेजो मित्रावरुणसंज्ञितम् ॥

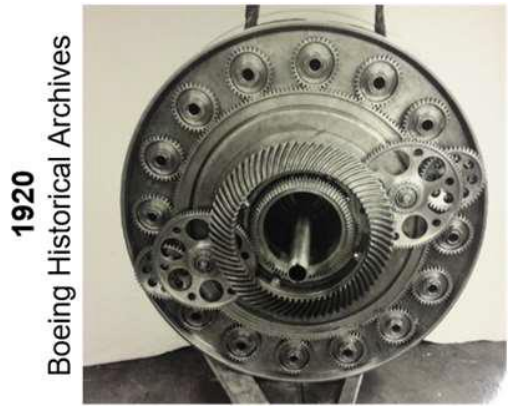
Shikhigreeva [शिखिग्रीव] in Sanskrit means Peacock Necktranslation, but it actually means Copper Sulphate - decryption. In Vimana Shastra there are many types of Vimanas explained. Two of them can be made to fly using a new type of SunPlower / wheel / cycloid propeller technology: Shakuna and Rukma Vimanas. The existing interpretation of the propulsion systems was incorrect for both Rukma Vimana and Shakuna Vimanas, as it is not possible to use existing screw propeller technology to make these two ancient vimanas fly as intended. There is a high probability that ancient advanced civilization is aware of much more complex and advanced propellers in the past, which needs to be explored and confirmed.

Note: This exploration work of potential use of SunPlower / Wheel Propeller in ancient sciences started in January 2021 after a suggestion given by a German Plasma Physicist to find indications in old Vedic texts for use of propellers similar to SunPlower Propeller. SunPlower Propeller is a compact hub wheel for air and water; blades rotate and revolve simultaneously in a unique pattern, which looks like our Sun. Hub at the center is the Sun, blades in the shape of sun rays. SunPlower Propeller can be used not only for thrust generation but also for power generation in air and water.



History of Cycloid Propellers

SunPlower Propeller (SPP – Cone form) technology is similar to the 100-year-old forgotten propeller concept: Kirsten Boeing Propeller (KBP -Cylinder form) by German Professor: Frederick Kurt Kirsten [4]. Even

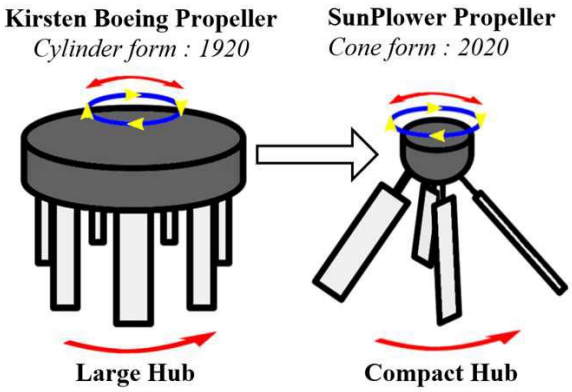


though it was the most efficient propulsion technology, it was not adopted due to the huge hub size (nonscalable), and also it is not optimal for a small Revolution per Minute (RPM) range of ICE engines. These are the two main reasons (huge hub and needs wide RPM range engine) why this efficient propulsion technology was forgotten and ignored for 100 years.

Recently the University of Siegen in NRW Germany has developed [5] the same old large hub (Cylinder form) non-scalable KBP for hydropower generation, it is a four years govt and EU-funded R&D project StECon! Uni-Siegen tried very hard to reduce the large hub size to a certain extent; however, it was challenging [6] to place all those

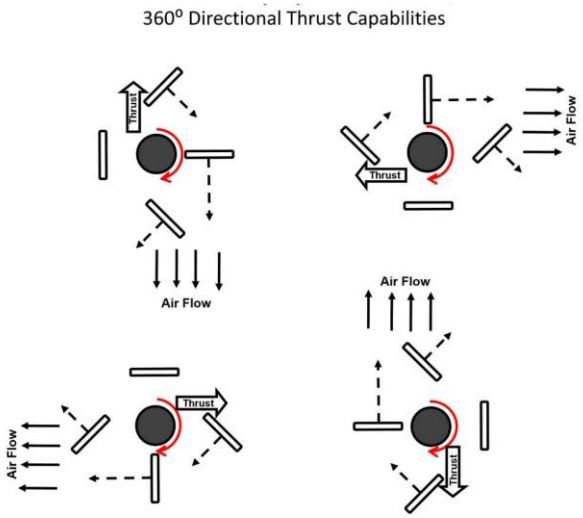
mechanisms at the zero radius point of a cone to make it ultra-compact and scalable! Many people still believe it is impossible tomake the hub smaller than that even today!

The SunPlower Propeller is the world's first 360^0 directional radial thrust propeller [7] to make this in a compact and scalable hub (Cone form). SPP/KBP is more efficient than screw propellers and far more efficient and older than Voith Schneider Propeller (VSP). SPP/KBP runs at a much lower RPM (lower noise) than any other propeller.



Directional thrust capabilities of Cycloid Propellers

Standard screw propellers produce thrust in the direction ofthe rotating axis, also known as axial thrust propellers. Screws are capable of producing thrust only in one direction in the direction of the axis, to change the direction of thrust, the axis of rotation or the whole propeller has to be rotated. In the case of a cycloid propeller, thrust is possible in 360^0 in a 2D plane perpendicular to the axis of rotation, they are also known as radial thrust propellers. The direction of thrust can be easily and quickly changed in the 2D plane just by changing the angle of the blades. While the axis of the propeller is fixed to change the direction of thrust in 360^0 just by changing theangle of the blades during operation for cycloid propellers, it provides and enables amazing flight features. This propulsion technology makes the vehicles highly flexible and maneuverable in any desired direction including Vertical Take-Off and Landing (VTOL) capabilities.



Thrust Measurements of SunPlower Propeller

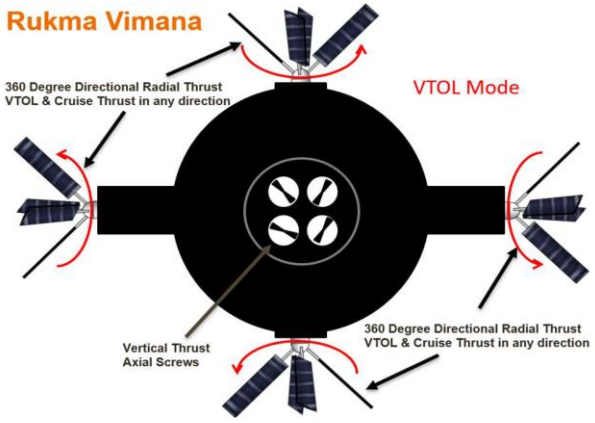
SunPlower Propeller compact hub was fabricated and tested for its amazing 360^0 directional radial thrust (seamless multiturn) capabilities [8]. The hub which is used for measurements is 25cm in diameter with four blades each 30cm x 40cm. The propeller was capable of delivering very high thrust at much lower RPM compared to a screw propeller. The operation of the propeller was relatively

quiet due to its lower RPM. SPP operates at about 10x lower RPM (similar to a wheel) in comparison to a standard screw propeller of the same size and thrust capabilities in the table below.

RPM	Power-Watts	Thrust -Kgf
55	40	0.6
115	112	1.1
220	260	2.1
330	506	3
445	760	4

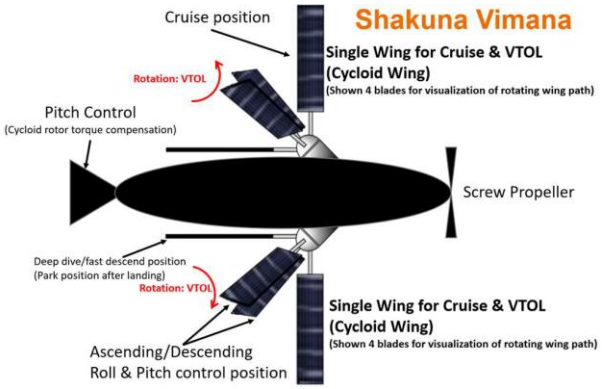
Rukma Vimana

In Rukma Vimana in addition to 4 small vertical thrust ducted fan propellers, there are 4/8 horizontal screw propellers (questionable translation), whose downwash is hitting its own fuselage! This configuration does not assist in generating lift and cannot help in changing direction. The issue is axial thrust, which cannot assist in any useful lift or directional control. The simple and elegant way to make Rukma Vimana fly in any desired direction instantaneously (including VTOL capability without using highly complex and slow responding tilting rotor technology) is to make the propellers thrust radial instead of axial! Looks like radial thrust cycloid propellers are already known and used in ancient times! Most likely the translation of the encryption was incorrect.



परिवर्तनावतनार्थं पश्चात तस्य यथाविधि ।
पीठमूले चतुर्दिक्ष्वर्धचन्द्राकारत क्रमात् ॥ ८४ ॥

As per above shloka 84 from Brihad Vimana Shastra [1, page 300] - For direction change, circular rotation direction is controlled by the blades. Half-moon-shaped devices are fixed in four directions. What are half-moon-shaped devices?



Using compact radial thrust SunPlower cycloid propellers in the existing decrypted Rukma Vimana configuration, we can make it fly!! We can also achieve movement and also change in direction of flight instantaneously to any desired direction.

Rukma Vimana Flight Capabilities

Rukma Vimana is capable of full six Degree Of Freedom (6DOF) linear movement on all three axes (Front-Back, Top-Bottom, and Left-Right) and also rotation on all 3 axes (Roll, Pitch, and Yaw) using four compact cycloid propellers, it's very unique like no other aircraft designed or used in the modern times. It's uniquely placed 4 propellers in all 4 directions not only gives VTOL capability but also the capability of instantaneously changing direction and speed. These unique features of Rukma Vimana make it eligible for a high-value combat plane.

Shakuna Vimana

Shakuna Vimana has a pair of wings for VTOL (Vertical Take - Off & Landing). The front screw propeller is used to generate forward thrust in the cruise. The issue is, using its pair of large single-piece wings, it's challenging to generate sufficient lift by flapping its wings like a bird. The easiest and elegant way to make Shakuna Vimana work is to rotate its wings like a cycloid propeller! Looks like a cone path cycloid propeller was already used in ancient times! Using cone-shaped SunPlower cycloid propellers in the existing decrypted Shakuna Vimana configuration, we can make it fly by rotating the wing in a cone path! Most likely the translation of the encryption was incorrect. The wing position can be easily changed and locked during the flight for different modes of flight and it can also achieve VTOL function very easily by rotating the wings!

वातनालस्तम्भमूलमेकस्मिन् शास्त्रतो दृढम् ।
प्रदक्षिणावृत्तभागामूम्यक सयोजित भवेत् ॥ १३१ ॥

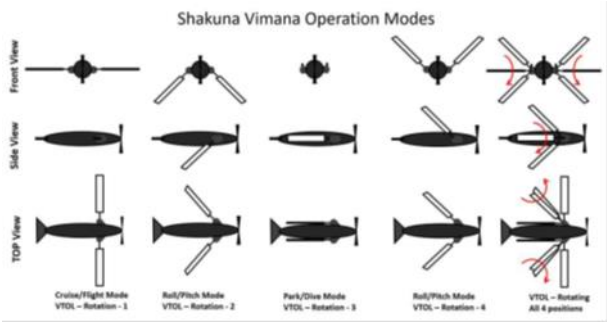
As per the above shloka 131 from Brihad Vimana Shastra [1, page 251] - Wing: Tube's air column base is firmly fixed to the rotating part. What is this rotating part?

Note: The proposal is to use only a single blade/wing cycloid per side. For easy visualization of the rotating path, four blades are shown at all positions in the above figure. Its also important to note that the shape, size, and structure (shown rectangular) of the wings shown are not optimal to handle stress and fatigue forces on the wings during VTOL operation.

The tail part is not a simple vertical rudder control, however, it's a complex pitch and yaw controlling mechanism (similar to a bird's tail fin), which has to rock synchronously to the rotating wings to compensate for high torque generated by both cycloid rotors rotating in the same direction. The tail can generate sufficient yaw control only during high-speed, however, at low speed, VTOL mode rotating differential directional thrust can generate a high degree of yaw control to change and stabilize direction.

Shakuna Vimana Operation Modes

In the below illustration: Top row shows the front view, the middle row shows the side view and the bottom row shows the top view of Shakuna Vimana for different modes of operation.



In the 1st column, the wings are stretched and locked horizontally, in this mode the wings are used for generating lift, and forward thrust is generated by the front screw propeller, which is used for normal flight or cruise mode. In the 3rd column, the wings are closed and locked vertically close to the fuselage, this is a low drag configuration that can be used for ultrafast descend, or can it can also be used for parking or shipping in a compact space. In the 2nd and 4th columns, the wings positions can be set in steps or increments independently for the left and the right wings to change direction for roll and pitch control. 4th column shows wings in all

four positions for easy illustration of how wings rotate during VTOL operation.

Shakuna Vimana can ascend and descend very fast and it is not only capable of VTOL, but also longer flights. Shakuna Vimana can be superior to Bell Boeing V22 Osprey (US Military, Tilt Wing VTOL) in both performance and reliability.

Summary and future work

Most likely the translation of the encryption was incorrect for both Rukma and Shakuna Vimanas propulsion systems. It is technically possible now (using SPP technology) to make these amazing Rukma and Shakuna Vimanas fly using advanced cycloid propeller wheel technology.

Legal and financial support is required to carry out the design and fabrication of a small-scale radio-controlled model of Rukma Vimana in India for proving that ancient vimanas and the vimana shastra technology is real to the whole world.

Need support of Vedic community and Veda Smaskruthi Samithi (VSS) to research further into the possible use of complex yantras or chakras (mechanisms/machines) similar to SunPlower / cycloid propellers for the propulsion of ancient vimanas. We have many Vedic experts and scholars who have already decrypted and re-invented many alloys and complex yantras or mechanisms, including successful fabrication [9].

There is a high probability that ancient advanced civilization is already aware and has already used these highly advanced compact cycloid propellers in the past, which needs to be further explored and re-searched/re-invented. Let's give back wings to our ancient Vimanas to make them fly again!

Acknowledgement

Keela Shanku [कील शंकु] – meaning rotating Joint/elbow in the shape of a cone/triangle. My sincere thanks to Dr. C.S.R. Prabhu for providing many references of Keela Shanku from the Brihad Vimana Shastra. The below is one of the shloka means 'Wheels inside pipe rotate and the Keela Shanku as well rotate / revolve in sequence'.

नालान्तर्गतचक्रारिण भ्रामयन्ति परस्परम् ।
तद्वेगेनाथ तत्कीलशङ्कवश्च यथाक्रमम् ॥६२॥

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The Chaturvedas said to have 1131 shaakhaas right up to the time of Aadi Shankaraachaarya and thereafter during last more than ten centuries, many shaakhaas are out of practice due to various reasons and presently only seven shaakaas are in the practice of Guru shiShya parampara.

There is a need to continuously preserve these available shaakhaas which may likely to disappear in future due to various external forces acting in the country vigorously with the power of money and global politics. It is time for the intellectuals of Bharata dEsham to wake-up and work collectively to protect and preserve Veda Samskruti of Bharata dEsham, by empowering the Youth of Bharat dEsham, the future care takers of this great Indian Heritage , with suitable education of our correct history and culture.

The above background lead to formation of this Veda Samskruti Samiti which is registered under Societies acts of Government of Telangana, with Regd. No. 961/2016 by Sri A.H. Prabhakara Rao, who is the Founder and President of the Samiti.

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