

FLIGHT: A RECURRENT THEME FOR ADVANCED CIVILIZATIONS? B. Reiswig¹ and D. Schulze-Makuch¹, ¹School of Earth and Environmental Sciences, Washington State University, Pullman, WA 99164, USA; breiswig@wsu.edu/dirksm@wsu.edu

Introduction: There is uncertainty whether technologically advanced civilizations, as a general rule, would engage in space travel and visit other planets. A first necessary step toward space is the development of machines capable of achieving heavier-than-air flight. Here, we examine this question by searching ancient documents and artifacts to reveal insights into whether the interest in flight and the development of flight machines in particular, is a recurrent phenomenon of human history (possible evidence for convergent evolution) or only resulted once in Western civilization within the last 150 years.

General Results: Throughout history, there has been a fascination with heavier than air flight. The desire to fly, although successfully achieved in modern times, is not limited to the recent past. Many ancient legends, oral traditions, and documents, which are found world wide, speak of flying and describe flying machines. Ancient artifacts showing airplanes and other flying objects are also common around the world (Figures 1 and 2). Some artifacts are highly stylized, making it difficult to understand events being recorded. Some of these artifacts and drawings are undoubtedly forgeries done in recent times; however, others appear to be legitimate artifacts that record activities associated with flight in ancient times. The question remains whether all these documents and artifacts are recording just the wish to fly or if they are accounts of actual events.

Written or Oral Evidence: Generally, scholars collectively refer to oral traditions and ancient written documents as mythology since they refer to superhuman feats accomplished by heroes or gods. However, many times Western scientists too quickly dismiss these legends as completely fantasy, but many stories appear to contain some truth. Therefore, although these traditional stories do contain significant amounts of fiction, some information, particularly that related to technology, landscapes, and cities may in fact be quite reliable.

Written documents and oral traditions with references to flight in ancient times exist all around the world. The most detailed accounts come from the Middle East and India. The Epic of Etana, from Babylon, contains fascinating, and accurate descriptions of the earth as seen from various altitudes as the hero rides on an eagle [1]. Other Babylonian sources describe the privilege of operating an airplane and how to use the knowledge of flight [1]. The ancient Vedic texts and other, non-sacred Sanskrit texts, of India are



Figure 1: Top and side view of two Columbian Artifacts. (Top photograph from [7] and bottom photograph from [8])

full of references to flying machines. Some Sanskrit documents are extremely technical and refer to the operation, construction, and maintenance of these flying machines while others simply describe their role in everyday life [2]. The texts are deliberately vague on certain portions of construction, and propulsion in order to prevent persons from competing cultures or societies from discovering the secret of flight. Nevertheless, one interpretation of the Samarangana Sutradhara states that lightweight materials were used for the body of the flying machine and other construction materials included iron, copper, and mercury [3]. The mercury appears in connection with an iron framework and the method for use is currently unknown [2]. Other highly speculative interpretations even imply laser technology as part of the engine [4] and currently unknown technology (e.g., some type of antigravity mechanism).

These interpretations, however, appear very unlikely because it is doubtful that ancient civilizations would have developed such advanced technology. The fragmentary nature and intentional ambiguity of these texts prevents reconstruction of the propulsion system, thus limiting our understanding of its function with the consequence that any resulting interpretation is highly speculative.

Artifacts of Ancient Flying Machines: The Columbian Artifacts come from the Sinu Culture [1] in Central and South American and date to between 500 and 800 CE [5]. Most of these winged artifacts accurately represent known flying animals, such as birds, insects, or bats. However, fourteen zoomorphic models display features of a more mechanical than anatomical nature [5]. These models, which have many features resembling model aircraft [1] were uncovered during the course of normal archaeological expeditions and currently are in the Chicago Museum and the Smithsonian Museum (Figure 1).

Archaeologists recovered another airplane model in

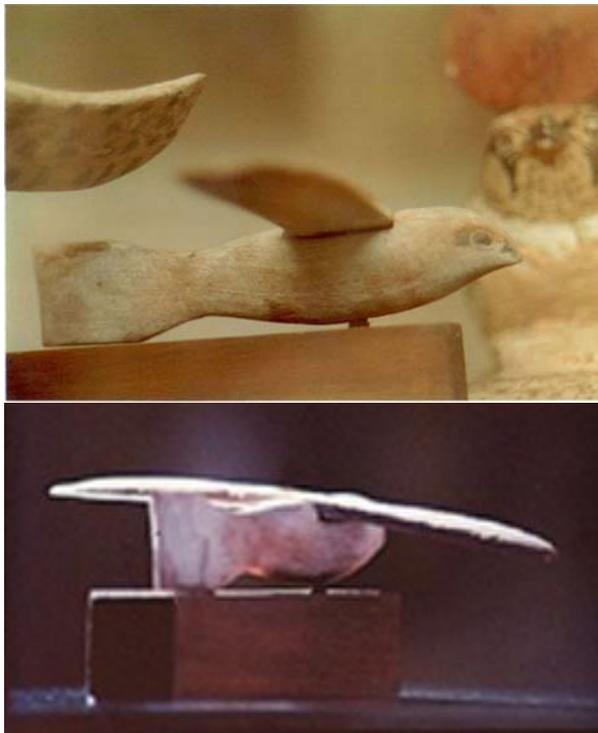


Figure 2: Side and back views of the Saqqara Bird. (Top photograph from [9] and bottom photograph from [10])

1891 as part of the contents of a tomb dated to 200 BCE in the Saqqara Necropolis, Egypt [6]. The artifact was in storage until 1969 when Dr. Kahlil Messiha found it in the Egyptian Museum in Cairo, Egypt [1] and interpreted it as a model plane (Figure 2). The

Egyptian Museum asked a panel of Egyptian aeronautic engineers to examine the craft in 1971 [6]. They concluded that the Saqqara Bird, or Saqqara Glider as it is also called, showed advanced features indicative of low speed flights with the capability of carrying large loads of freight [1].

There is fascinating, but highly controversial evidence for flight in the ancient past. Unfortunately, very little scholarly research is available for the documents and artifacts mentioned above. In order to determine whether ancient humans took to the air and if so how often, will require very detailed analysis of the evidence from artifacts and ancient texts. Ultimately, if enough information is provided, ancient designs should be tested in the field to determine whether they do work. Overall, though, our research points to the fact that flight is a feat that was attempted by ancient civilizations several times, and in some of the cases probably successful, at least in the form of lightweight gliders. Thus, fascination and attempts with flight seem to be a recurring theme for the one species on Earth that is able to experiment in this way, and implies that at least some intelligent species that may have developed elsewhere in our universe may follow this same path.

References:

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