

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

MODELLING OF WAU BULAN CURVES

LIYANA AFIFI BINTI SAIFUL BAHRI

2014296858 D1CS2496B

NADIAH BINTI AHMAD AWANG TOSHIYA

2014638942 D1CS2496B

WAN MADIHAH BINTI WAN ISMAIL

2014406004 D1CS2496B

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ABSTRACT

Ethnomathematics shows the relationship between mathematical idea and culture that must be embedded in order to us understand the diverse culture. One of the cultures in Malaysia is playing Wau Bulan (moon kite). By taking the concepts of making Wau Bulan, a new research is made that relate it with Mathematics. It is to find the Wau Bulan curves shape by using three different equations which are Quadratic equation, Bezier equation and Hermite equation. To do this research, the data of a model of Wau Bulan is collected from the craftsmen in Kelantan that mastered in making Wau Bulan. The data obtained is then converted to be coordinates on the Cartesian Plane and used to create the Wau Bulan shape by using Maple software using Quadratic equation, Quadratic Bezier equation and Cubic Hermite equation. The result obtained is compared to the actual shape of Wau Bulan to get the best fitted curves which is Cubic Hermite equation.

1 INTRODUCTION

1.1 Research Background

Ethnomathematics shows the relationship between mathematics and culture. There is an interplay of mathematical idea and culture that must be together to help us in understanding our diverse cultures. The prefix ethno is from ethnography. Ethnography focuses detail in cultural interpretation. Mathematics is the study of topic such as quantity (numbers), structure, space and change. Ethnomathematics observes culture from the past, relate it with present situation and improve it for the future requirement. Culture is the system of knowledge shared by relatively large group of people.

Malaysia is synonym with multicultural society. One of our famous cultures is playing Wau Bulan (moon kite) that is well-known in Kelantan, the state of Malaysia. The name of Wau Bulan is derived from the shape of its tail that looks like crescent moon. This traditional kite come in many different sizes. Bamboo strips are used to make the frame of Wau Bulan. The Wau is decorated with light decorations mainly with floral motifs and is made of kite paper. The hummer that is attached at the top of the Wau Bulan creates sound depends on the force of the wind.

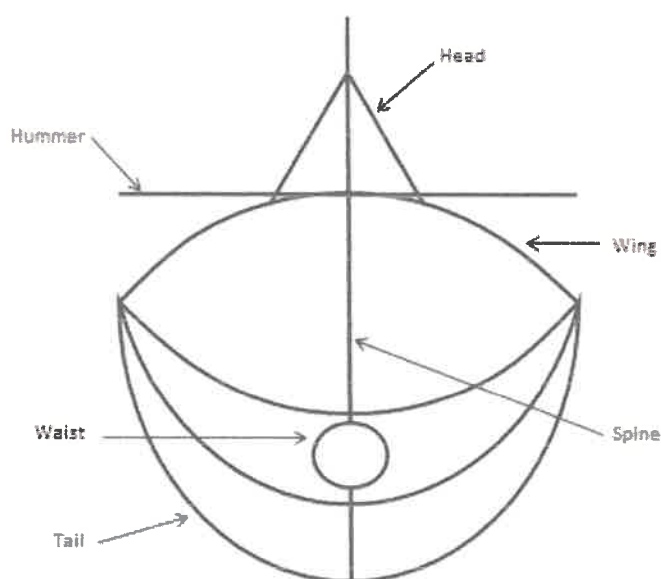


Figure 1.1: Parts of Wau Bulan