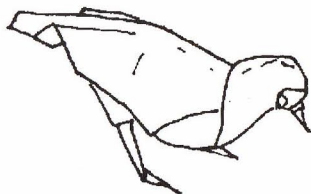


## A study of some of the techniques used by Akira Yoshizawa

### Introduction

Akira Yoshizawa has always been held in the highest regard as an origami creator, and I find myself hugely influenced by his work. Indeed there must be few creative folders in the world who have not been affected by his achievements. In 1980 I decided to make a trip to Japan where I visited Yoshizawa, a particular highlight of that journey being a day at his studio where I was privileged to be shown box after box of his work. Each box was labelled, for example "horses" or "chickens" or "monkeys", and within were scores of different variations of the respective animal, in a different pose or sub-species, revealing in many cases a sense of inner mood or psychology of the subject.



This is not the place to reveal the folding secrets of Akira Yoshizawa. Indeed it can be dangerous to look at "tricks of the trade" in isolation: rather one should regard any particular work as a whole. To concentrate too much on any isolated technique employed is likely to detract from the integrity of the design, and this I think is one possible fault of the approach of some origami "engineer" type creators of today. This belief stems from my own studies as an oil painter. I have always been encouraged to look at the complete subject, making comparisons with the whole of the painting on which I am working, and never to focus on details. I have been steered away from "How to do it" books on painting, which are generally filled with the authors' own devices for depicting, for example, the glint in the eye of the sitter, or the effect of the sun on a lake. These tricks are always far less important than the complete image which is being portrayed.

I believe that this philosophy translates neatly into origami terms, and in particular the work of Akira Yoshizawa whose origami work generally displays an elemental and yet complete simplicity. It is never a clumsy collection of accurate reproductions of the parts.

The author of several influential origami books, Yoshizawa has shown us a fairly wide range of his designs, but many of the most refined remain unpublished. In putting together this article I have restricted my sources to two of the books which I feel can be considered the most authoritative, as well as two other sources listed below.

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Vase and Flowers by Akira Yoshizawa



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Origami Dokuhon 1 (Green cover with two mauve peacocks)

Published by Kamakura Shobo Co Ltd 1957, revised 1969

Origami Dokuhon 2 (Blue cover with white Pegasus and stars)

Published by Kamakura Shobo Co Ltd 1986, ISBN 4-308-00400-4

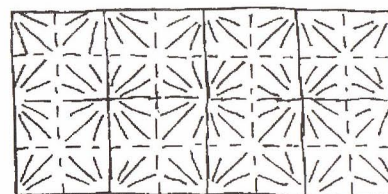
Oru magazine No 5 (Summer 1994) Published by Sojusha Inc

Origami by Akira Yoshizawa: Video produced by Kinokinuya 1997 - ISBN4-906329-46-2

For copyright reasons it has not been possible to reproduce all that I would like from these publications, so to further your studies on Yoshizawa, I heartily recommend that you try to add them to your collection of vital origami material!

### Sources and technology

For many contemporary creative folders, a strong fascination is the manipulation of the paper into undiscovered basic forms, using either combinations and extensions of familiar 22 1/2, 45, or 90 degree shapes; more unusual geometries such as 30 or 60 degree patterns; or developments based on A4 rectangles. Frequently these bases resemble the traditional shape of the bird base, although they may carry additional flaps to be used to portray extra details of the subject, such as horns or ears.



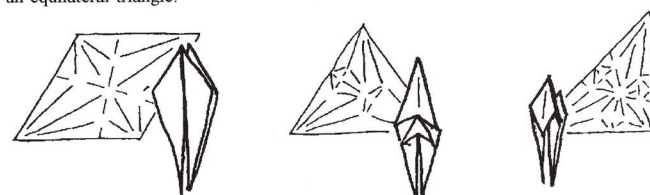
Study of Yoshizawa's published work reveals that the fish/bird/frog base patterns of the traditional bases are quite enough for his purposes. True, he does show how complex bases can be put together, but in relatively few cases do we see these used by him. One of the occasions when a more complex

basic form is used, is seen in the Video mentioned above, where the famous Cicada is shown together with a crease pattern. This shows that the insect is made from a 2x1 rectangle folded into an 8x bird base. In the majority of the other published work, however, the simple basic form is used alone, and furthermore Yoshizawa never seems to fall into the trap of revealing the starting shape in the finished design. Remarkable results are achieved with these initial building blocks.

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## The Master's Touch

In Origami Dokuhon 1 (page 24-26) and Origami Dokuhon 2 (page 38) Yoshizawa shows charts of bases which he uses frequently: these are the bird base and the frog base applied not only to squares but to a 60/120 degree rhombus; a right angled triangle and an equilateral triangle.



In Dokuhon 1 he adds lists of various models which can be folded from each base, as well as further developments of these approaches in crease-pattern form. Photographs of these bases and other variations are shown in Dokuhon 2 (page 39).

So, it seems to me that, unlike creators such as Neal Elias, Fred Rohm, John Montroll, Robert Lang and Dokuotei Nakano, Akira Yoshizawa is not a great innovator of new basic forms or radical origami geometries. His bases stem from multiplications or distortions of the traditional shapes. In fact he proves quite convincingly that he doesn't need complex new geometries, and achieves miraculous results with just the well-known traditional bases.

Last year I received the video produced by Yoshizawa which is a fine record of his work, and shows a sequence of him folding a swan, illustrated in Origami Dokuhon 1 (page 64). For me this is a particularly exciting reminder of my visit to his studio in 1980, because Yoshizawa folded this same design for me then. I quote from notes made at the time: "He begins to cut an equilateral triangle from white paper, and I guess it's for the



swan, and a present for me? He prays briefly, and folds quickly and decisively. Uses a mallet for beak reverse folds, also signs and stamps the paper during the folding process. Tweezers, tools are also used for the shaping of the swan. He gets up to replace the tools in their respective drawers from time to time,

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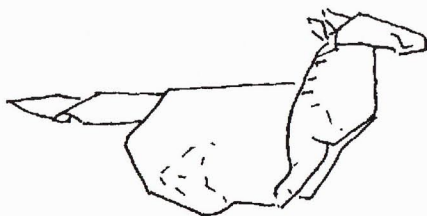
interrupting the sequence. He gives a curve to the paper on either side for the gentle reverse folds of the neck and body.

"We watch in reverential silence - indeed it's not possible to do otherwise. Here is a master at work and I'm privileged to witness it. He unfolds and refolds the body, wings, adjusts, twists. Again the hammer is used to flatten the head.

"At last it's finished. He seems satisfied. Of course the design I know, but it's a beautiful thing."

#### Suggestion and Subtlety

Yoshizawa is very skilful at portraying life and movement in his origami realisations of living creatures, and frequently the work is powerful because fine detail is omitted. Thus the result is obtained by suggestion and subtlety and a combination of hard and soft creases, rather than by photographic duplication.



A fine example of this is shown in Oru magazine no 5 (Summer 1994) in which is featured a detailed 16 page article with beautiful photographs of Akira Yoshizawa's work. In particular a colour photograph at the foot of page 7 shows a horse with legs merely suggested by gentle pleats and moulding. The horse nevertheless conveys a tremendous sense of motion, appearing to be cantering at full speed.

Yoshizawa's origami can seem to the casual viewer to be careless representations of the subject, with marks and indentations in the paper, not commonly associated with the precision and geometry of origami. However these "scars" are part of his skill, and are carefully considered to add to the sense of life and inner psychology of the subject. A comparison of a Yoshizawa original with a photograph of the subject will reveal many detail discrepancies, and even liberties taken with proportions, yet the overall impression of the origami version usually satisfies completely. It may even seem more "real" than the subject itself.

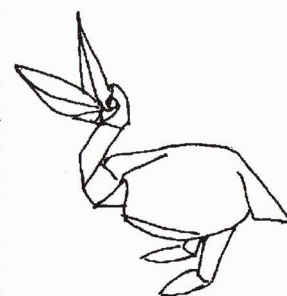
#### Problem solving

Tantalising photographs appear in the books of Akira Yoshizawa showing examples of

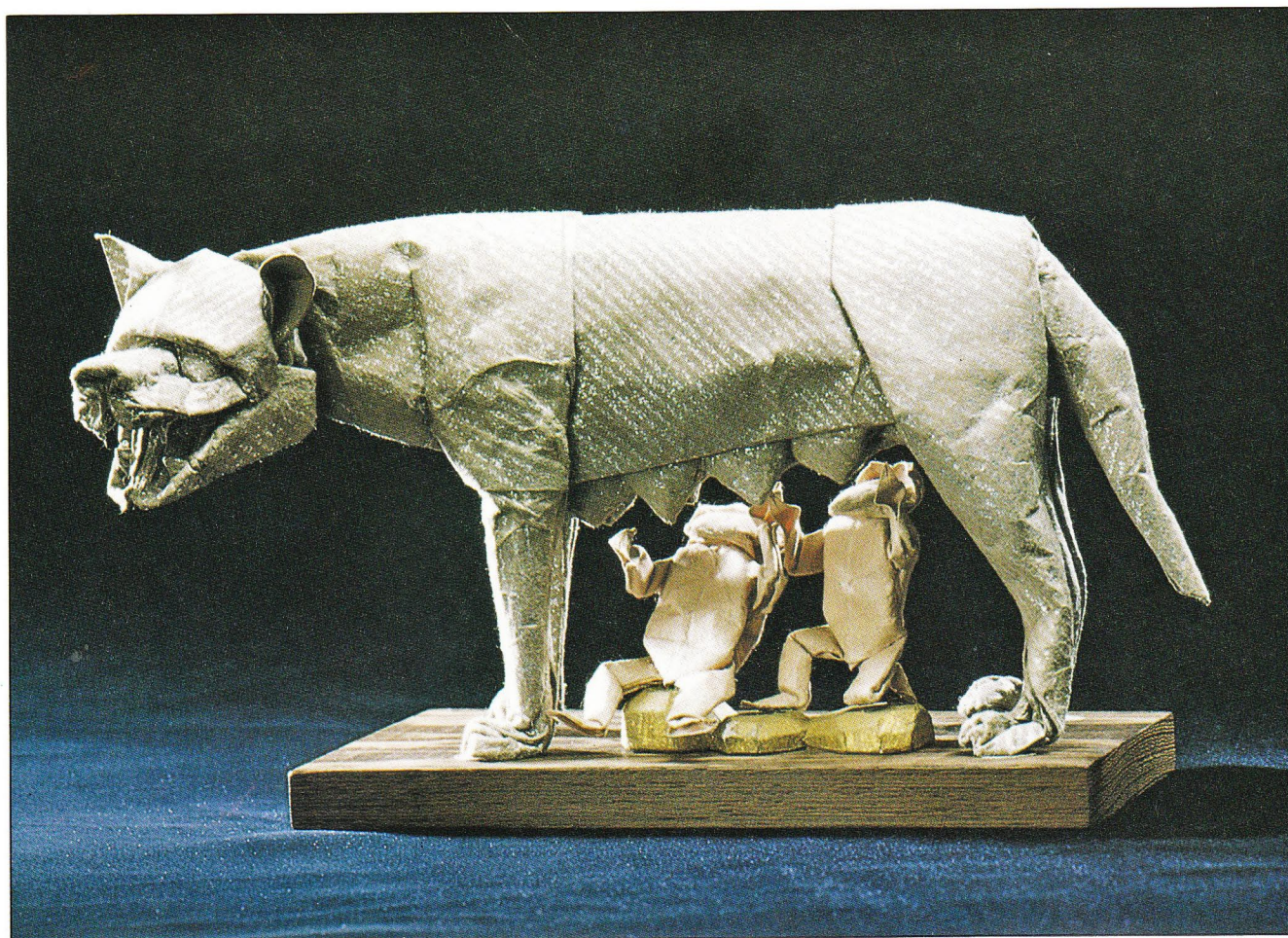
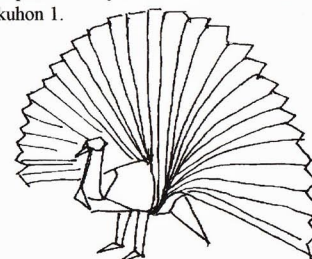
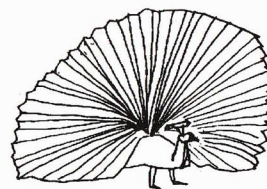
designs which are not diagrammed. These are frequently variations of the more basic version for which folding instructions are given. Many readers find this a frustration, others will take it as a challenge, a problem which begs to be solved. Yoshizawa is famous for his two-piece animals, usually made from two separate bird bases to form the front and rear quarters of the animal respectively. In most cases he will have achieved a similar animal from a single sheet, using lessons learnt in the folding of the multi-sheet version.

Careful study in other areas of Yoshizawa's published work may help with this problem solving. In Dokuhon 1, page 56, a photograph of a Pelican with gaping beak intrigued folk for quite sometime before folding instructions appeared in

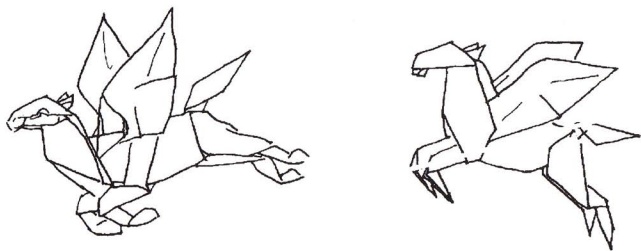
Dokuhon 2. However a clue had already been given in the original volume as the Pelican be seen to be a variation of a chick folded from a square: instructions for this appear in Dokuhon 1, page 53. The Pelican uses an identical folding method but the starting sheet is a 60/120 degree rhombus.



Check the two-piece peacock on page 59 of Dokuhon 1 and the single sheet version diagrammed on page 48 in Dokuhon 2, and continue your puzzling with the 4-piece Pegasus on page 81 of Dokuhon 2 and the variation photographed on the cover which I guess comes from a single sheet. A clue to this problem may be the 4x bird base from a single square diagrammed on page 26 of Dokuhon 1.

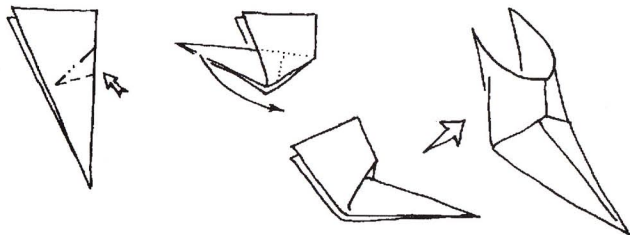






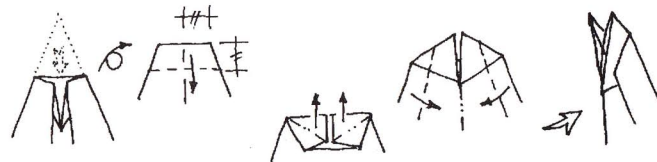
## Favourite folding ideas

You may wish to experiment with some of the following trademarks of Yoshizawa's style, though do bear in mind the place of these techniques in the overall design! Try starting with the "loose" reverse fold which is illustrated many times along with the symbols sections on Yoshizawa's many books. The result of this double reverse fold is to give a 3-dimensional curved tube shape to a flat flap. Note that the two crease lines do not meet at the edge of the flap, but a little distance in from the edge. Concentrate on making the folds precisely, yet encourage the volume that the creases give to the paper.



Another frequently used device is the double tapering pleat used on a head flap to give nose and eyes, as well as volume and curvature to the head. This is well illustrated in Dokuhon 2 in the Cat (page 72/3), the Koala (page 79) and the photo of the Rabbit (page 76). Have a look at Yoshizawa's diagrams for two versions of a squirrel which appeared in the BOS York 30th anniversary convention booklet (available from Ian Harrison, our Supplies Secretary). These also carry the pleats to form the head and details of the animal.

In Dokuhon 1 (p61) Yoshizawa diagrams a two-piece horse, and, perhaps shockingly, shows that the ear flap is to be cut. However he immediately redeems himself by giving a folded alternative to make the two ears emerge from the single flap by folding alone.



## Conclusion

In this article I have not touched on the other techniques for which Yoshizawa has become famous in the origami world, such as "wet folding". This and another related process called "urauchi", or the laminating of two different weights of paper with flour paste, could repay further examination in a further article.

I hope that I have opened (or perhaps re-opened) your eyes onto some of the ways in which Yoshizawa has secured his place as the world's foremost origami artist.

Dave Brill



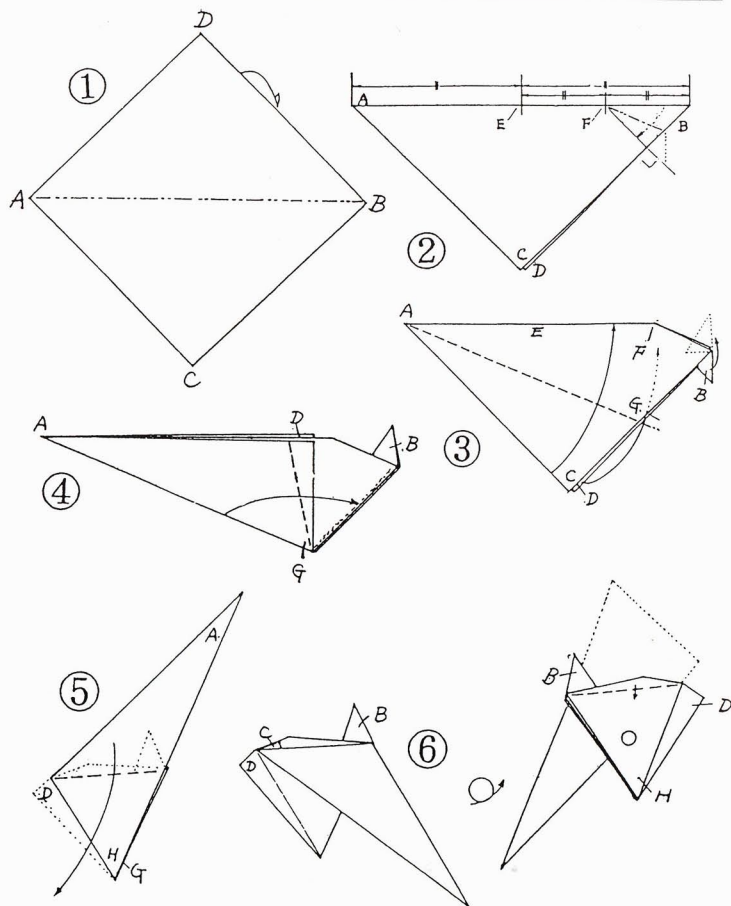
Mobula Japonica  
Yoshizawa holding a model of the Mobula Japonica ray.

(The diagrams for this model are printed on the next few pages.)

*Note the difference between the appearance of the model here and in final diagram 16, a difference which perhaps ideally illustrates the true genius of the Master's Touch at work. Ed.*

# Mobula Japonica

by Akira Yoshizawa



Mobula Japonica by Akira Yoshizawa

