

FORD TIMES



march 1951

FORD TIMES

March, 1951

Contents

Bolinas, California	2
J. RAY CORLISS	
Snowplanes in Yellowstone	12
RAY ATKESON	
Custom Conversions	16
BURGESS H. SCOTT	
Recording the Sounds of America	19
ROBERT M. HODESH	
First Flexible Kite	25
FRANCIS M. ROGALLO	
Why We Chose Southeast Arizona	30
WELDON F. HEALD	
At Your Request!	37
New Road in the Wilderness	38
FRANKLIN M. RECK	
Nature's Slickest Fat Man	45
GEORGE HEINOLD	
Food and Fun from Unusual Trees	49
J. RUSSELL SMITH	
Favorite Recipes of Famous Taverns	57

Victoria Arrives—10; One-Picture Story—24; Cartoon—
36; Games—60; Contributors—64.

William D. Kennedy **Editor-in-Chief**
Arthur T. Lougee **Art Director**
Edmund Ware Smith **Managing Editor**
Burgess H. Scott **Roving Editor**
Nancy Kennedy **Associate Editor**
Mary Richards **Associate Editor**
Malcolm T. Young **Production**
Pauline Syler **Circulation Manager**

The Ford Times is published monthly by the Ford Motor Company, 3000 Schaefer Road, Dearborn, Michigan. Board of Publishers: Walker Williams, Chairman; Charles E. Carll; J. R. Davis; B. R. Donaldson; Arthur T. Lougee; W. D. Kennedy. Copyright 1951, Ford Motor Company, Dearborn, Michigan. Printed in U.S.A. All rights reserved.

FIRST FLEXIBLE KITE

by Francis M. Rogallo

photographs by Lawrence S. Williams

For a hobby, an aeronautical engineer dips into his own boyhood and brings up a new kind of kite. His invention has reached a stage where the question arises: Will the man fly the kite, or will the kite fly the man—and perhaps even his automobile?

OF ALL the sports of my boyhood, kite flying was the most thrilling. Eagerly I awaited springtime when the fresh March winds would carry our kites high into the heavens, or across the canyons and almost to the mountains on the other side. For my early years of kite flying were spent in the Coast Range Mountains of California at Montezuma School, which was perched atop one mountain, but surrounded by higher mountains.

Here I learned to make and fly "bow" kites and "barn door" kites. The bow kites were made of two sticks in the form of a cross, the horizontal stick bowed so that the front of the kite was convex. The barn door kites were made of three sticks—two in the form of an X, and the third laid horizontally across the intersection of the other two. The bow kites

flew gracefully, with little or no tail, but didn't have as much pull as the barn door kites, which were our favorites. The barn door kites required long tails, having no stability without them.

We had difficulty finding suitable wood for our kites, using pine from packing cases or redwood shakes that fell from the sides of an old garage, sometimes with a little help. The covering was newspaper, held on with paste made from flour that we begged from the cook. These materials were so poor that many of our kites had broken-and-spliced sticks and patched covering even before they were flown.

Making a kite that would fly was a challenge, and those who succeeded felt a real sense of accomplishment and won the respect of their companions. The kites that flew well were highly



← *The author and his children on the shore near Fortress Monroe, Va.*

prized, and when one would break away and fall among the trees on the mountain or in the canyon, much effort was spent in finding it. Search parties would go out, and those who remained behind would anxiously await word of success or failure.

With such boyhood experience, it is little wonder that I aspired to become an aeronautical engineer, to design bigger and better kites, big enough for people to ride in, with engines and propellers to pull them through the air. After studying aeronautics at Stanford, I received an appointment to the Langley Laboratory of the National Advisory Committee for Aeronautics. At first I worked personally on research projects whose completion brought the same thrill as flying a kite, but gradually my work changed from research to the supervision of others who did the research. The projects, too, changed from those pertaining to aircraft that a private citizen might buy to those pertaining to very large or high-speed aircraft that only a government could afford. It was no longer as exciting as flying a kite.

Hobbies often provide something lacking in our vocational work, and, fortunately, my family was as eager as I for the kite-flying that I suggested. At first we made kites such as I had made as a boy,

but training in aeronautics and years of research in the aerodynamics of all manner of aircraft—from parachutes to supersonic airplanes—had had their effect. The kites of the last few centuries were suddenly not good enough.

If we could combine the shape of the supersonic airplane with the unbreakable structure of the parachute we would have a very fine kite indeed. But, for such a kite to fly, it must possess two kinds of stability—stability of shape and stability of position. If we could provide these, the rest would be easy.

We started by making small paper kites and dropping them as gliders. Then we attached threads to them at various points and towed them about the living room. When we found a promising configuration, we built a larger model of cloth and took it to an open field on the shore of Hampton Roads for a trial. If it didn't fly, we thought of a way to improve it; so home we went to make the modifications and then back for another trial.

We did our kite research on Saturdays and Sundays when the weather permitted, and on those days our trips to the flying grounds were frequent. Our efforts were not in vain, for after many attempts we succeeded in making

← *Mr. and Mrs. Rogallo work in their attic on their new kite.*



← *Kites away. The Rogallo family flies them from the beach.*

one of our kites fly. After that taste of success, weekends were not enough. In order to pursue our experiments at night we installed a thirty-six inch fan in our home so that we could test kites in the doorway between two rooms. Many shapes and materials were tested in our wind tunnel and in flight until we had developed a thoroughly satisfactory model.

Wherever these flexible kites are flown, they have attracted the attention and admiration of children and grown-ups alike. Most impressed are those who drive up as we are winding in. They see a beautiful and spirited kite being reluctantly pulled to earth from almost directly overhead. When the kite has fallen to the ground, it is obvious that it is completely limp, having no sticks or stiffeners, a startling thing to anyone familiar with previous kites. But the climax comes when we place the rack of string on one edge of the kite, roll the kite tightly around it, and drop the package into the miniature tow target that had served as a tail. It is almost like the snake that swallows his tail and completely disappears.

My wife's mother is an ardent kite flyer, as is the wife of our mayor. They never seem to tire of it. And our three children surprised us last Christmas by

asking for kites of their very own. We thought they would have been tired of kites, for we had been eating, sleeping, and living kites for a long time.

One of these days we're going to make one of our kites large enough to lift a man, and supply him with some controls which have already been developed on our small kites. To test it in safety, we'll probably tow it from a boat so that a crash will not injure the pilot, since we have not yet developed a pilot as rugged as our kite. If it proves successful over water, we can try it over land, probably in a mild wind rather than by towing, for there are few places on land that would permit towing for a very long flight.

A further development, already worked out with small models, would allow the kite to be flown as a glider. Imagine the thrill of carrying such a glider in your knapsack to the top of a hill or mountain and then unfurling it and gliding down into the valley.

But the most intriguing possibility is the use of this non-rigid wing as the lifting component of a combination auto-airplane. When the airplane alighted, the wing would simply be folded up, chucked into the baggage compartment and forgotten. The auto would then drive away unencumbered. ■

← *Mr. Rogallo and son Bobby make final adjustments on kite.*