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Popular Mechanics

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AIR SURFING: A new sport
takes off in kites
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**OUR GREAT
VIETNAM GOOF** Page 70

'Gadgets and exotic weapons—untested military hardware—
fouled us up'.—Col. David H. Hackworth, U.S. Army (Ret.)

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SHOULD AUTO MECHANICS BE LICENSED?

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**WHAT TO
LOOK FOR IN
WARRANTIES**



Although it looks like the Leonardo da Vinci model, this "Rogallo-wing" glider is based on the designs of a NASA scientist. The manta-ray wing seems more stable in flight than the biplanes and they have made flights lasting as long as 25 minutes and as high as 2500 ft.!

SPORT AVIATION

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Ken De Russy Collection

Soaring News

SOME PRIMITIVE FLYING EXPERIENCES

By B. H. Carmichael (EAA 3133)

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Capistrano Beach, California

(Photos by Ladislav Pazmany)

SEVERAL YEARS AGO I found my way to the ancient Archives of the Smithsonian Institution in Washington, D.C. where I was guided to a card index. Looking under the name "Lilienthal" I found that two of his papers, namely "The Problem of Flying" and "Practical Experiments in Soaring", had indeed been translated by the Smithsonian in 1893. The friendly custodian got down the ancient annals and provided me with a reading table. At last, I could read in English the words of the first flyer written at the time of his accomplishments and about three years before his untimely death. I ordered photocopies of the papers before leaving, and in about six months they arrived.

Each time I read these I marvel at the brilliance and courage of this great pioneer who first gave mankind wings. I would try to place my mind in the frame of reference of his times without our present knowledge, and soon I thought I really understood how it must have been to journey through the air on such primitive wings, with so little control and so much to learn about flying machines and the variations of the ever changing wind. There is, however, a world of difference in reading about an experience one has not had and reading of one that has been personally undergone.

A few years later this discrepancy was to be overcome. Shortly after the hang glider experiments recounted in the August, 1967 SPORT AVIATION, Richard Miller moved to San Clemente, California, bringing his two hang gliders of Rogallo configuration. Richard is a most remarkable person. Having been a soaring pilot and instructor, editor of Soaring magazine, world champion model, airplane builder and writer of many articles on model building, free lance aviation writer, and author of the books Soaring 65 and Without Visible Means of Support, he has taken up the challenging task of investigating the early history of flying in the most direct way possible. Through his generosity I also have been able to achieve this rare insight into the long past world of the pioneers.

Richard first let me fly the "Bamboo Butterfly." This was a simple Rogallo with a cross brace to fix the leading edge sweep angle and hang bars below the sail. It was an absolutely impossible flying machine due to its sensitivity to angle of attack. One would run with the sail just barely lifting and, at the brow of the hill, if one rotated just a few degrees for lift off the sail acted as a gigantic drag brake and brought you to an instant stop. If the angle were just right one could spend a few seconds in the air providing the hill was steep enough. In an attempt to get more speed and a flatter glide, a reduction in angle of a half of a degree would half the sail and drive one into the ground. This evoked much mirth from the spectators, and muffled curses from under the sail from the intrepid aeronaut. Sadly, I concluded that this machine was much too primitive compared to Lilienthal's first attempts to be anything more than a dangerous kite or parachute.

20 AUGUST 1971



What Richard Miller lacks in grace he makes up for in determination as he makes his leaping take-off run. Note the slotted effect provided by the jib sail.



Richard Miller, airborne on tow, with the Rogallo glider.



"Look out below!" means "hit the dirt" as Richard Miller comes at the photographer with legs flailing while the craft is only a few feet off the ground.

Lifestyle!

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