Page 5 - How to Make Alexander Graham Bell's Winged-Cell Tetrahedron Kite
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total aeroplane surface is the sum of the surfaces of the three kites. The ratio of weight to surface therefore is the same in the larger compound kite as in the small? er constituent kites, considered individually." Dr. Bell's next step is obvious, adds to stability and lift, and is important to anyone who will undertake the making of a kite along tetrahedral principles. When you make a compound kite, it is possible to have all the cells (and thus all the surface available to the wind) without having all the struts (and thus all the weight) it would take to make those cells individually. Look at the drawing of the compound triangular kite and its end view. The doubling of the longitudinal struts is not necessary. Three struts could be eliminated and you would have end view two. "The weight of the compound kite is less than the sum of the weights of the compo? nent kites, while the surface area remains the same. If kites could only be suc? cessfully compounded in this way indefinitely we would have the curious result that the ratio of weight to surface would diminish with each increase in size of the compound kite." This is where the Hargrave model fails. With the covered structure fore and aft, the uncovered center framework would become sufficient dead weight to so increase the ratio of weight to surface it would not be possible to get a kite large enough to hold a man and an engine off the ground. Hargrave had actually got a man off the ground by using teams of several small box kites, but that's hardly a promising method for developing a useful aeroplane. Dr. Bell wrote: "Passing over in silence multitudinous experiments in kite construc? tion carried on in my Nova Scotia labora? tory, I come to another conspicuous point of advance • the adoption of the triangular construction in every direction...and the clear realization of the fundamental im? portance of the skeleton of a tetrahedron, especially a regular (all sides of equal length) tetrahedron, as an element of the structure or framework of a kite or fly? ing machine. • ..Most of us are no doubt familiar with the common puzzle • how to make foux triangles with six matches* The difficulty lies in the unconscious assumption of the experimenter that the four triangles should be in the same plane....Place three matches on the table so as to form a triangle, and stand the other three up over this like the three legs of a tripod stand. The matches then form the skeleton of a regular tetrahe? dron..,. It is not simply braced in two directions in space like a triangle, but in three directions like a solid. If I may coin a word, it possesses 'three-dimensional' strength; not 'two-dimensional' strength like a triangle, or ??one-dimensional' strength like a rod. It is the skeleton of a solid, not of a surface or a line." Excellent Accomodations nbe makRLand OINGWALL. VICTORIA COUNTY, N.S. • PhOflK OIngWMll 48 Mrs. Chester McBvoy, Manager JLi/nwood ANTIQUES ART HANDICRAFTS WOOLENS BADDECK, NOVA SCOTIA P.O.BOX 178 295-2950 Jg GALLERY OP ARTS & CRAFTS Pleasant Bay on the Cabot Trail The finest in Nova Scotia Crafts Canadian made souvenirs, Kodak dealer Look for, the SHOP OF INTEREST sign A Fine Seafood Restaurant 7 Days a Week / 7 AM to 11 PM The Skye Restaurant Fully Licensed and Air Conditioned ANOTHER FINE FISKE MOTEL Cape Breton's MaT- Turfos To NlVv'r Scr> Avsfti eloS