

CHAPTER XVII - Flying Machines Construction And Operation

In Chapter XVII titled "Some of the New Designs" from "Flying Machines: Construction and Operation," the focus is on the innovative steps inventors are making in the realm of aviation technology. Among these inventors, Frank Van Anden of Islip, Long Island, emerges prominently with his creation, the Van Anden biplane, which has been subject to experimental flights and showcases an automatic stabilizing device that proved its worth during a flight on October 19th, 1909. This device marks a significant advancement by automatically correcting the aircraft's position after a sudden gust of wind caused it to keel over.

The Van Anden biplane's construction features include 26-foot wide main biplanes coated with silkolene and varnish, a structure reinforced with spruce ribs and struts, and the inclusion of a two-surface horizontal rudder both in the front and rear, alongside a vertically hinged rudder at the back. The aircraft incorporates the Curtiss system for elevation and depression control of the main planes through the steering-wheel post, with additional control for turning through the steering wheel itself.

Notably, the Van Anden model introduces an automatic control for the wing tips connected to the engine, which played a pivotal role in stabilizing the aircraft during turbulent conditions. This innovation establishes the machine's distinctive feature amidst other designs.

Another novel aeroplane highlighted is the Herring-Burgess, created by A. M. Herring and W. S. Burgess, which leverages an automatic stability device for balance and sports a unique method for control handled by the aviator. This model also underscores the incredible lightness and efficiency of its 30-horsepower motor, which maintains high performance with minimal weight.

Furthermore, the chapter mentions the initiative by students at the University of Pennsylvania, led by Laurence J. Lesh, who constructed an aeroplane incorporating new ideas like a tandem steering gear design for a practical learning experience under guidance. Their machine, "Pennsylvania I," represents another step forward, featuring dual rear propellers powered by a Ramsey 8-cylinder motor and a novel lateral control system developed by Lesh and Octave Chanute.

These advancements illustrate a period of rapid evolution in aviation, driven by a mix of established aviators and inventive newcomers, all contributing to overcoming the challenges of flight through technological innovation and experimentation.