

## The Mitchell Wing B-10 Ultralight Motor Glider

The B-10 is a product that wears many hats. It can be enjoyed as a foot-launched hang glider, an Ultra-Light, or an Ultra-Light Motor Glider. And because it can be assembled and torn down in less than 15 minutes, towed with a small trailer, hauled in a pickup truck or even packed on and in a station wagon, operational costs are kept to a minimum. When the B-10 needs to be relocated, you just fold up the 8.5 foot outboard panels on top of the center section. Or they may be removed if desired. Three pins connect each outboard panel to the center section. Quick release pins connect the cage to the main wing body and the rudders are attached to their tube seats with removable bolts. Within minutes the B-10 is apart and ready to be stored in your garage. No tie-down fees or hangar rent.

The B-10 wing is based on NACA's 230-15 airfoil. It has been described as the finest ever developed for good lift and inherent stability. It's a well-proven design, judging from the testimonial of its many records and trophies.

It was back in the early 1940's that Don Mitchell first became involved with flying wing glider design and construction. But WWII interrupted his research and experiments. The War's specific needs for large payload capacity and space ruled out the flying wing design and Mitchell's vision lost its place in aviation history. Then in 1974, with the advent of hang glider mania, the Mitchell Wing resurfaced. It was at that time Dr. Howard Long took an interest in the half-forgotten project and asked Mitchell to make him a flying wing hang glider. The result was the foot-launched Mitchell Wing and it astounded the world of hang gliding. George Worthington, holder of eight world records in hang gliding and author of the book *In Search of World Records*, wrote in the book... "I predict that the Mitchell Wing will be the highest performance foot-launched hang glider we'll see for a long time." He was right and it was from this preliminary design that Mitchell developed his later powered models. The B-10 and U-2 Superwing.

The leading edge of the Mitchell Wing has a single built-up "D" spar with aircraft birch plywood torsion proof leading edge. Foam ribs placed every 4.5 inches hold the D shape. The built-up truss ribs aft of the spar are covered with fabric. This structural design is simple, extremely strong and light. Net weight is under 80 lbs.

In the B-10 the pilot is positioned inside an open-frame cockpit below the wing and controls the flight of the wing through the use of a "joystick", just like a regular sailplane. The STABILATORS give the wing stability, with pitch and roll control. Wing-tip rudders, sensitive to a bar under the feet, are used to initiate a turn and to steepen the glide path for landing. Thus the pilot has aerodynamic control about all three axes. Ignition and throttle are conveniently located near the left hand and the joystick reaches down from the wing toward the pilot's right hand. The cushioned "bucket" style seat puts the ultralight pilot in the familiar supine position and offers him superb visibility to the front, sides and rear.

The extremely flat glide and low sink of the B-10 allows the plane to be used for soaring. The 8.5 foot outboard wing panels turn up in a 6 degree dihedral. This, added to the main wing-body's 12 degree sweep back, gives the Mitchell Wing the stability one would normally suspect might be missing due to its lack of a tail. B-10's have taken off and landed in "no wind" conditions. They have also flown in extreme turbulence, taking off with winds gusting 30-37 miles per hour.

According to FAA regulations the B-10, being a true Ultralight, requires no pilot's certificate to fly, although U.S. Pacific will not sell a plane to a customer who cannot demonstrate a basic knowledge of flight training.

Because no pilot's certificate is required to fly a B-10, no medical is necessary and there is no need for aircraft registration. This opens the door for people who would not normally be able to experience the thrill of flying an aircraft.