# A light in the toolbox

Richard Bach

That which a man believes, the philosophers say, is that which becomes his reality. So it was for years as I said over and again “I’m no mechanic,” I was no mechanic. As I said “I don’t even know which end of the screwdriver to hit the nail with,” I closed a whole world of light from myself. There had to be somebody else to work on my airplanes, or I couldn’t fly.

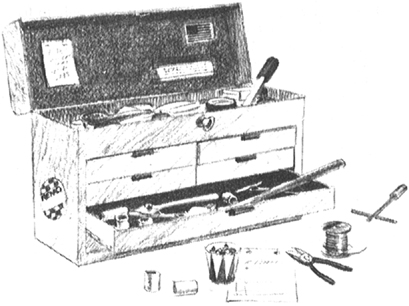
Then I came to own a crazy old biplane, with an old-fashioned round engine on its nose, and it didn’t take long to discover that this machine was not about to tolerate a pilot who didn’t know something of the personality in a 175 horsepower Wright Whirlwind, something about the repair of wooden ribs and doped fabric.

That was how the rarest event in life came to me … I changed the way I thought. I learned the mechanics of airplanes.

What everybody else had known for so long was brand-new adventure to me. An engine, for instance, torn apart and scattered across a workbench, is just a collection of odd-shaped pieces, it is cold dead iron. Yet those same pieces, assembled and bolted into a cold dead airframe, become a new being, a finished sculpture, an art-form worthy of any gallery on earth. And like no other sculpture in the history of art, the dead engine and the dead airframe come to life at the touch of a pilot’s hand, and join their life with his own. Standing separately, the iron and the wood and the cloth and the man are chained to the ground. Together, they can lift on up into the sky, exploring places where none of them has ever been before. This was surprising for me to learn, because I had always thought that mechanics was broken metal and muttered curses.

It was all there in the hangar to see, the moment I opened my eyes, like an exhibit in a museum when the light is turned on. I saw on the bench the elegance of a half-inch socket set; the smooth, simple grace of an end-wrench, wiped clean of oil. Like a new art student who in one day first sees the work of Vincent Van Gogh and Auguste Rodin and Alexander Calder, so I suddenly noticed the work of Snap-On and Craftsman and the Crescent Tool Company, gleaming silent and waiting in battered toolbox trays.

Art of tools led to art of engines, and in time I came to understand the Whirlwind, to think of it as a living friend with whims and fancies, instead of a mystic sinister unknown. What a discovery that was, to find what was going on inside that gray steel case, behind the spinning flash of the propeller blade and the flickering bursts of engine roar. No longer was it dark inside those cylinders, around that crankshaft; there was light—I knew! There was intake and compression and power and exhaust. There were pressure oil bearings to hold whirring high-speed shafts; carefree intake valves and tortured exhaust valves darting down and back on microsecond schedules, pouring and drinking fresh fire. There was the frail impeller of the supercharger, humming seven times round for every turn of the propeller. Rods and pistons, cam-rings and rocker-arms, all began to make sense, clicking to the same simple, straight logic of the tools that had bolted them in place.



I went from engines to airframes in my studies, and learned about weld clusters and bulkheads, stringers and rib-stitching, pulleys and fair-leads, wash-in, offsets, rigging. I had been flying for years, and yet this was the first day I ever saw an airplane, studied it and noticed it. All these little parts, fitting together to make a complete aircraft—it was great! I raged in the need to own a field full of airplanes, because they were so pretty. I needed them so that I could walk around and look at them from a hundred different angles, in a thousand lights of dawn and dark.

I began buying my own tools, began keeping them on my desk, just to look at and touch, from time to time. The discovery of the mechanics of flight is no small discovery. I spent hours in the hangar absorbing Michelangelo airplanes, in shops studying Renoir toolboxes.

The highest art form of all is a human being in control of himself and his airplane in flight, urging the spirit of a machine to match his own. Yet I learned, courtesy of a crazy old biplane, that to see beauty and to find art I don’t have to fly every moment of my life. I have only to feel the satin metal of a nine-sixteenths-inch end-wrench, to walk through a quiet hanger, simply to open my eyes to the magnificent nuts and bolts that have been so close to me for so long.

What strange, brilliant creations are tools and engines and airplanes and men, when the light is turned on!