

Me and My Drone - It's Just A Hobby



Radio-controlled military drones have been around for a long time. Lawrence Sperry's Doodlebug in World War I was a bold attempt 'way ahead of its time. Later attempts - the Buzz Bomb, the Mistral and the cruise missile - weren't very adaptable. The manned aircraft did not become obsolete.

Years ago I was having lunch with colleagues who were working on the F22 project. They complained that having a human on board severely limited the performance of the aircraft. The weight and drag of the cockpit instrumentation loaded down the aircraft. Just the canopy alone was a huge weight and drag penalty. And the redundancy and armor required for safety of the pilot consumed weight and space that limited the amount of instrumentation that the aircraft could carry. The ability to out-turn missiles, for example, was restricted by software to G-forces that the pilot could endure. My fellow engineers concluded that the F22 would be the last high-performance manned fighter aircraft. They took pride in taking part in the conclusion of that long history.



Teledyne Ryan Firebee

In those days, small unmanned aircraft were designed by miniaturizing full-scale aircraft. But then Israel took a different approach. Instead of scaling down full-sized aircraft, they scaled up model aircraft. These drones were pure model airplane technology - Futaba radios, balsa and foam wings, Zinger props and chainsaw engines. That revolutionary idea was used by Israel to destroy Syrian SAM sites. The models flew in, guided by Remote Control from airplanes following safely behind. Syrian SAM radars revealed their positions when they lit up and launched missiles at the models. Then the manned fighters destroyed the SAM sites with missiles. It was a turning point in both model aviation history and military aviation history. We modelers were a big part of that.

Since then, many model airplane designers have contributed directly to the development of military drones for the US military. Nick Zirola both senior and junior, Roy Vaillancourt, John Worth and at least three members of the **Scale Flyers of Minnesota** have served on drone projects.

In the winter of 2005, TCRC was recruited by the University of Minnesota to demonstrate for military officials the ability to drop a robot from a small model airplane. Early Navy surveillance drones were recovered by manually flying them into a net. Final approaches were flown visually with standard RC transmitters. They chose experienced RC model pilots for this task.

Today, drones are made of materials pioneered for aircraft by modelers - fiberglass, adhesives, composites, vacuum bagging, etc. And electronics are derived from decades of field trial by modelers - servos, simulators, cameras, retracts, thermal sniffers, spread-spectrum receivers, etc. The design principles of control, power, weight and drag for small aircraft have evolved by trial-and-error during millions of flights by modelers.



This year (2011), the U.S. Air Force will train more drone pilots than fighter and bomber pilots. The drone industry has moved on, beyond model airplane technology. But the partnership continues. Now we modelers benefit from the electronics and gasoline and turbine engines designed primarily to serve the drone industry.

So the next time someone says that you play with toy airplanes, think of recent events in the Middle East and the impact of drones on foreign policy, smile knowingly and say, as we modelers have always said, "It's just a hobby."