WARBIRDS - What I Learned
by
Gerry Bishop

About seven years ago I became seriously interested in warbirds, They are great replicas of REAL airplanes! Now, to me, the only thing better than a warbird screaming down the runway is four or five warbirds SCREAMING DOWN THE RUNWAY!

Outlined here are a few things I have learned which may (or may not) help you if you are considering getting into gas warbirds.

First, I like the 30 to 60cc sized birds. For me they are easier to build, easier to see and are generally less affected by the wind. Speaking of wind, it took awhile for me to get comfortable with warbird cross wind takeoffs and landings. As you start flying warbirds you probably should takeoff and land into the wind.

Second, I like tail draggers and most of the warbirds are tail draggers which generally means landing on the main wheels. A good wheels landing is awesome to behold.

Actually flying a warbird is easy. Takeoff and landings not so much – it's still a bit of a challenge for me.

Takeoffs – ease the throttle in (don't firewall it) and USE the rudder to keep the warbird straight. If you do it right the airplane is going straight down the runway and flying before you hit full throttle – if you do it wrong you MIGHT get it flying anyway. If your warbird turns left when taking off you gave it too much throttle too quick (and probably not enough right rudder). Just be ready to use right rudder on takeoff.

After takeoff climb slowly as you get your speed up. If you cannot see your landing gear as you climb out you might be climbing too quickly – DON'T stall it! Retract the gear and enjoy the flight. Be sure to check your timer. You don't want to run out of fuel especially if you need to 'go around' for another landing attempt or two (or three).

Landing - It's all about the landing. First, you DO NOT want to land too short - land in front of you or beyond you. When you land too short it is difficult to judge your landing speed. On approach keep the nose down – you should be able to see the area between the canopy and the prop. Ideally you should be six to ten feet in altitude as you cross the end of the runway. Higher than that and you'll probably be landing long, lower and you will be landing short - you DO NOT want to land short.

They say you have to 'fly it in'. They are correct.

I usually keep about 1/8 throttle until I get close to the ground – close being about one foot off the runway. Now its just a matter of elevator control as the airplane slows. Too much up elevator and the nose will rise slowing the airplane too much and, at that speed, it will drop out of the air. You do not want your warbird to stop flying and drop out of the air at an altitude of 3 or 4 feet. Too little elevator and the plane does not slow down enough causing it to touch down and then get the dreaded 'bounce'. Usually one bounce leads to two or three or four more – not pretty. Once the airplane is slow (and low) enough release the elevator and it will smoothly land on the main wheels. As it slows more bring the flaps up and add some up elevator to bring the tail down.

Landing a warbird successfully is really a matter of touch and feel. It will take some practice but, eventually, you begin to 'see' a good approach versus a bad approach and you recognize where your warbird should be and the speed that is required. If you don't have a good approach (or get a bounce) throttle up smoothly (be ready to use right rudder) and go around and try it again.

Like I always say – don't land too fast but don't land too slow.

Somtimes a landing (too fast or too slow) will cause a gear to get ripped out of the wing. I have learned to REINFORCE the landing gear mounting area when building my warbirds. Use tri-stock, fiberglass, extra ply, thin CA, and anything else to make it stronger. This is not necessary if you land perfectly EVERY TIME. I always reinforce my landing gear mounting area even though I plan to land perfectly every time.

Perhaps you have been out at the field and witnessed a wheel coming off of a landing gear. I have seen this and it has happened to me (oh yes, it is true). However, now I take extra care in mounting wheels to ensure they remain on the landing gear. If you lose a wheel on a warbird it will usually call for a belly landing. Aircraft damage could result.

Another area I reinforce is the cowl mounts. Use epoxy and tri stock and screws and dowels or anything else to keep the mount firmly attached to the fuse. I use blind nuts whenever possible to attach the cowl to the plane/mounts. There is lots of vibration up by the engine. Blind nuts hold the cowl tight so that it will not come loose and run in to the propeller, killing the engine, ruining the cowl and causing you to land immediately (ask me how I know this).

You can be sure that if your engine quits it will quit in the worst spot possible. Usually you won't make it back to the runway. If you cannot make it back then belly land with wheels retracted and flaps up. Keep the wings level as you land. Emergency belly landings can be done successfully if you don't hit a tree, fence or a lake. After the emergency belly landing my hind sight is usually 20-20.

Having a good running and reliable engine is very important in your warbird. Warbirds are not gliders. Learn to properly setup and tune your engine or become friends with a good 'engine guy'. You need a good reliable idle because, sometimes, when landing, you will need to give the engine a shot of throttle to avoid the dreaded bounce. You also need a good smooth transition from idle to power to 'go around' for another landing attempt.

I use air retracts and set them up so they come down quickly and retract a bit slower. I always try to remember to air them up (100 psi) before flying. If your air is leaking look closely at the control valve. I have not tried electrics but I am not against them.

I have noticed that there are many ways to crash a warbird. For instance....

When making a low pass and your propeller hits the ground you will probably crash.

When flying with 12 or 14 other warbirds you must maintain space around your aircraft and fly the circuit without loops and rolls otherwise you will probably crash.

When one flap will not come down (clevis failure, servo failure, or just failure) you will probably crash.

When you do not frequently inspect and maintain your warbird you will probably crash. This includes changing fuel tank and lines and close monitoring of batteries. Check servo screws and connections. Tighten everything – muffler, spark plug, spinner and check those clevises.

Most warbirds need nose weight to balance properly. If your weight breaks loose you will probably crash.

If you fly warbirds alot you will probably crash.

These are some of the things I have learned about those awesome warbirds.

I am still learning and I hope some of this helps you.