

VAMPIRE

By WAL KNIGHT

Vampire – a good name and very appropriate.

At one time I had little interest in the type as the design seemed too radical. But after disposing of my Supa Pup and looking for some desirable features in my next aircraft, I found many in this one. Such as- Folding wings, Tri-cycle undercarriage, Pusher airscrew (would work on engine without being in slipstream, No danger walking accidentally into propeller, Could attach woollen thread on wind-screen in free flow of air for slip/skid indication (as per glider practise), Single brake on nose wheel to avoid danger of one side "brake lock", Enclosed engine canopy with little risk of parts flying back into propeller, and also less chance of engine ice, Enclosed comfortable feeling in cockpit with excellent visibility, Flaps, all-metal airframe with easy worked Pop Rivets, effective skin operation, simple rubber block type undercarriage, modern design wing tips for less loss of lift at tips, well known 2 stroke engine, and with its extra special paint scheme to be a "crowd pleaser".



After purchasing the Vampire I found all these "desirables" just as I expected. What I did not expect was the fright I got on the first flight. Oh Boy. "Flat tack", full bore in forward down our huge main run way at Moruya, with back pressure at advised rotation speed of 45 Knots---nothing happened -except soon I discovered most of the run-way behind me---not getting airborne-not enough runway ahead to stop in---and the control column feeling as though locked solid. And with some desperation and huge abnormal back pressure the poor little Vampire leapt into the air as though up a vertical wall- and left me wondering if the advice I had received prior to take off to "heave it off" at 45 Knots applied to something else, ie. Flying Tank. Of course at that time I had not deduced the negative nose attitude as manufactured could result in a lifting wing into the ground. If we assume that lift is at right angles to the airflow., the faster we go the greater this effect will be. On the advice of a Senior Flight Instructor who claimed he could rotate with two fingers (which I did not believe at the time), I was able to do so. But it requires much practise and is not a good point. Then on landing (as per the Vampire Operation Manual) "grease" mains on and with back 'stick' hold nose wheel off ground. Do that and front end drops about 18 inches and as the speed washes off, you arrive with a hell of a thump. After some experiments it occurred to me that the aircraft has a very large area elevator to overcome these problems. In time this problem and its solution became better known and a modification to the nose leg lengthening it several inches and raising the nose made it improve (and an existing drawing explains this). I must add, this summary is as I found it, and it worked for me on my aircraft. It is known most aircraft of the same design fly differently so that if your aircraft does something else you are back to base one.

The actual flying feel in flight is reasonably normal, but due to the type of wing folding it is necessary that long encased "rod in conduit" control-runs be employed and these have some acute bends. Result is a heavy control field on the control column due to friction. Combine this with a need for a more rudder control and the balance is not normal. Some Pilots will disagree, and tell me that the aircraft flies like a little fighter. At a cruising speed of 80 Knots it does indeed and will "tighten-up" with a big aircraft feel. There is no way to avoid the lack of rudder control on the ground and if there is not differential brakes on the main wheels, turning is in a wide radius. Stalling is docile with a mushing wallowing feel and a minimum loss of height. It is difficult to name a speed, as it is difficult to get a definite "break". Speed in Sub Section is copied from the Makers Manual. It is easy to restart the engine in flight with the normal rope type start. Taken in all, a nice aircraft.

The original design in America by Mr Sadler (ie. Sadler Vampire) was a very different aircraft. The SV1 had a larger wing span, was constructed of lighter Alloy sheet, and was powered by an engine of

about 25 HP. The stress Analysis load applied to the main plane to be enormous for this large span. The aircraft was aerobatic in America.

The aircraft was built under licence in Australia by Sky Wise at Bankstown airport and under the guidance of Chief Engineer/Manager Mr Ken Garland was drastically redesigned. After a huge amount of "Paper Work" with the department, the aircraft re-appeared with lessor span, heavier Alloy covering, more powerful engine of 42 HP and various other mods such as the undercarriage. This span became SV2, and about 28 of these were built. A testing program followed and a video was produced showing the aircraft being (thrown around the sky enthusiastically, and landing in a paddock. However, it is not a paddock aircraft at all, having a slim undercarriage, small wheels, and large running radius. This is obvious when turning on the ground in a crosswind.

Completely against the law in this Country, I am told the aircraft has been Looped and Rolled, as has been seen by a very reliable witness. You don't have to be mad to do this with a 2-stroke motor but it does help.

This design was readily accepted in America and a plan was proposed to build a much bigger aircraft with a huge engine to gain entry into the Military Market. With this sort of background one would expect the aircraft to be huge success in this country. So why only so few built. From my own humble opinion the first thing coming to mind is the Material/Man Hours/Type of Construction problem. It must have been a nightmare to produce with some margin of profit. It certainly would not be possible to complete a full Ground and Flight Test program to find and eliminate all the "bugs". Cessna and other big Companies spend millions on this and sometimes it takes considerable time and never seems to be completed. This requirement must be almost impossible to complete in the small limited industry such as the Ultralight, and when the final product is sold it is a credit that so much is achieved in the limited capital and time frame. From my observation other small manufacturers have had the same problem and have left the Industry for much the same reasons.

So, keeping this in mind, if I had to sort out some "bugs" in the Vampire, the first would be to get it up off its knees. The nose wheel structure needs to be lengthened not just the amount shown in the modified drawing (this problem was recognised by some one else) but even greater than shown on that drawing. Next would be to eliminate that awful heavy feeling in the Aileron Control. I see no easy way to do this, and must be acceptable as is in view of the ease of folding the wings. Next the control column needs re-shaping to give more "back stick" control. This is just a small modification, some more of simple change could also be made, but the aforesaid is enough. The worst problem of all is the lack of access to the internal structure for normal maintenance. Panels sometimes must be removed especially those of load carrying ones to complete a normal routine task. In a normal circumstance a few removable Inspection Panels is a simple answer. One needs extremely small shaped hands to get "inside" in some cases, and in others, one cannot see but also cannot reach. Removing the engine for normal Ignition maintenance is a major operation. But what do we expect. The aircraft was produced during 1989 in a fully built version for a mere \$24000. It is not a sail cloth aircraft that needs strict attention if not undercover, but a modern design that should stand the test of time for a long time. It is sad that more are not built, and it will be even sadder still if they just "fade out" as some other types have.



As I have recently been "slowed down" by an age-type problem, I have decided to sell my Vampire. This article must not be thought of as an exaggeration of the true facts since I wrote this article before the afore-said happened.

Wal Knight