

## DH87B HORNET MOTH

### Introduction

These are purely my own informal views, jotted down long ago to help a friend who had bought a Hornet Moth. However, I read them through again today, with the benefit of having now flown over 500 hr in seven different examples, and found that I still agree with myself!

Mark Miller



- a) Remove the pitot cover. Make it the very first thing you always do on arriving to fly.
- b) Try lifting the rear fuselage (hands on longeron near tailplane strut attachment - NOT on strut ends as Tiger). You can't? That's an indication of how much mass is waiting to take charge if you don't keep the Hornet moving in a straight line! Occupants and fuel obviously increase the effect. It's not that the rear fuselage is of heavy construction, just that the mainwheels are very well forward.
- c) Lighten the fuel load at first, say 20 gals max just as the handbook recommends for local flying. Full fuel and 2 modern day POB will probably put you over weight. Even though the CG may be in limits the handling when heavy is much more demanding, especially directionally. Work up to it slowly.

### Wheel Brakes

- a) Do not misunderstand the brake operation: the brake 'bite' at full rudder travel is that which is adjusted into the system at maintenance. The brake lever is for parking and slowing down

only - it does not enhance differential braking as on Chipmunk.

- b) If there are any doubts about the brakes, just don't fly! They are your only defence against a groundloop after landing.
- c) Wipe the u/c struts immediately after each flight, to prevent oil running downhill and contaminating the brakes.
- d) Locking of the braked wheel happens easily on wet grass, and is not always apparent. Accept less crosswind component on wet grass runways.

### **Taxying**

- a) My own preference: taxi with rudder trim set fully to starboard. This reduces load on the rather flimsy spring system.
- b) Textbook aileron technique can be risky during crosswind taxiing. The balance arm on the upgoing aileron is perilously close to the ground, closer still if the wings rock while moving on uneven ground.

### **Takeoff**

- a) Until familiar with the centre control column, glance outside just before rolling, to see that aileron position is neutral, or appropriate to the crosswind.
- b) Don't be led astray by a very 'asymmetric' feeling, both to the controls and the forward view. Tiger-bred pilots often try to takeoff with the sharply tapering nose (on their side of the a/c) paralleling the edge of the runway!
- c) Don't attempt to force the tail up too early. As implied, it weighs a ton and therefore will only come up in its own good time. Premature forward stick merely compromises directional control. Note this point particularly when carrying over 25 gals of fuel.
- d) During a crosswind takeoff, be particularly wary of c), especially if the tail is lifting just as you emerge from the shelter of a hedge or buildings.
- e) When crosswind is from the right, anticipate a restriction between the right hand branch of the control column and the passenger's legs. Potentially hair-raising because you will be unable to get sufficient down elevator to stop the aeroplane hopping sideways. Best to remove dual control in these circumstances.

### **Climb**

- a) Caution the shallow climbing attitude. A 'normal' nose position will give dangerously low IAS. Hornets were originally placarded to this effect.
- b) In turbulent conditions, trade reduced rate of climb for increased climbing speed, to give better aileron response. Subject to clearing obstacles! Say 70 kt.
- c) Again in severe turbulence, forget normal light aeroplane advice to hold the controls gently. Grip hard! You may need sudden very large movements of ailerons (and rudder) to keep the

wings level.

### **Cruising**

- a) What the Hornet does best. Only beware of cruising so far that you run out of oil before fuel, as has been known.
- b) The Hornet makes heavier weather of hot turbulent days than a Tiger. Most comfortable to fly early or late, like the pioneers!

### **Stalling**

Don't believe established reports that claim a benign stall. At forward CG and with power off, stick held hard back, and slip needle centred, G-AELO normally fails to stall: it 'mushes' with a high rate of descent. But when CG is aft, the stall and accompanying wing drop are unpredictable and sometimes plain nasty. Most probably, all Hornets differ.

### **Approach**

- a) Control airspeed with care on a glide approach - below approx 52 kt the rate of descent can start to get out of hand. All will feel good but you can be going down nearly as fast as forward! No way can the elevators check this sink  
  
in the brief flare from a slow glide. (My theory: Hornet has very little wing stagger, and not much gap, so it could be that 'biplane effect' is more apparent than with Tiger)
- b) During approaches in gusty conditions, be ready to augment the ineffective ailerons with coarse use of rudder, to keep the wings level. Prudent to remove RH branch of the control column if you have a big passenger.
- c) Get properly aligned early on. The Hornet's poor controllability at approach speed, and very low wing tips, are not conducive to last moment jinks to regain runway centreline. It sideslips safely, however, airbrakes on or off.

### **Landing**

- a) Basic, but do look in the right place for judging the landing flare. Because the view downward and close in is extremely good, it is easy to look too "vertically" for good height judgement.
- b) Avoid inadvertent movement of the offset control column, to the left, as you ease back to round out. This is near inevitable at first, maybe even more so if the central armrest is fitted.
- c) Wheel landings are not helpful (my opinion) with the Hornet. Due to the CG well aft of the mainwheels, and the modest elevator power, I find that the tail drops too soon after touchdown. This increases the angle of attack at a moment when you are still close to flying speed, not really what you want.

- d) Crab (not wing down) crosswind landings are the order of the day, due to the minimal wing tip clearance. Beware of kicking off drift too soon over a hot tarmac runway, and the aircraft then waffling along in its ample ground effect...while starting to move sideways towards the runway lights!
- e) Don't hesitate to use firm differential braking during landing. It's the only way to keep straight, and there is less risk of a noseover than with any other a/c I know. Two well-known Hornets have collapsed the whole u/c one side, and still not touched the prop!
- f) Yet again, beware of conflict with pax as stick comes fully back.
- g) Never let ATC hurry you into a brisk turn-off after landing (e.g. PFA Rally) - remember all that mass ready to overtake!

### **General**

- a) Again, don't forget that out-of-sight pitot cover!
- b) Wipe fuselage floor after flying, to reduce ingress of oil.
- c) Above all else, back away from situations which might risk damage. There are next to no airframe spares and the Hornet Moth is not a straightforward type to repair. At best you could miss a season. And I have to insure mine!