**Blenheim operating limits and checklists**

After scouring left and right for a Blenheim mk.IV manual or pilot's operating handbook and finding nothing freely available, today i stumbled upon the POH for the Mk.V variant.  
  
I just finished reading through it and while there are certain differences in the placement of controls and gauges, it uses the same engines as the Mk.IV we have in the sim. There are also a lot of stuff that are half-way modeled in the sim (they are modeled but work automatically without input from the player) and it sheds some light on those too.  
  
For example, it says that there is an engine operated hydraulic pump but it can't provide sufficient hydraulic pressure for all systems, so there's a hydraulics selector valve for it. It can be set to provide hydraulic pressure to either gear and flaps or the turret, but not both at the same time. It also has an off switch to prevent it from overheating during cruise.  
  
So, a pilot would take off with hydraulics set to gear/flaps, cruise with them switched off and then switch it to provide power to the turret when nearing dangerous airspace.  
This is probably why the turret is inoperable in the sim when the aircraft is on the ground.  
  
There is also mention of a reconnaissance camera and this is also visible in our Mk.IV: go to the gunner's station, press the key that opens the canopy and switch to external view, you will be able to see an opened hatch on the top of the fuselage slightly ahead of the turret and through this opening the camera is visible. I hope it becomes operable at some point.  
  
So, on to the important stuff, engine operating limits. The Mk.V comes equipped with either mercury XV or 25 engines. The manual gives the exact same limits for both, the only thing that's different is the oil temps.  
  
Our in-game MkIV uses mercury XV engines, so the various settings should be the same.  
  
**However**, the most important difference is that the Mk.V comes equipped with constant speed propellers (20 degrees of motion, plus the ability to lock them in full coarse pitch for cruise by pulling the levers fully back, just like our Rotol Hurricane in the sim).  
Our in-game Mk.IV has the simpler two-stage props, so we won't be able to match the limits exactly because we lack precise control over RPM.  
  
The boost cut-out is said to give a maximum of +9 boost when it's on, +5 when it's disabled.  
  
That being said, here's the deal:  
  
Maximum takeoff power to 1000ft, 3 minutes limit:  
 with 100 octane fuel:  
+9 boost  
2750 RPM  
  
with 87 octane fuel:  
+5 boost  
2650 RPM  
  
Max. climb power, 30 minute limit:  
 regardless of fuel octane rating  
+5 boost  
2650 RPM  
cylinder head temps (CHT) at 210C  
oil temps at 80C  
  
Max. continuous power (no time limit) for rich mixture:  
 regardless of fuel octane rating  
+3.5 boost  
2400 RPM  
CHT at 190C  
oil temps at 70C  
  
Max. continuous power (no time limit) for weak (lean) mixture:  
 regardless of fuel octane rating  
+1.5 boost  
2400 RPM  
CHT at 190C  
oil temps at 70C  
  
Max. all out limit (war emergency power):  
 with 100 octane fuel:  
+9 boost  
2750 RPM  
CHT at 235C  
oil temps at 90C  
30 minutes time limit  
  
with 87 octane fuel:  
+5 boost  
2750 RPM  
5 minutes time limit  
  
Diving Restrictions:  
 maximum boost +5  
maximum RPM 3120  
exceeding 2750 RPM permitted only for 20 seconds with the throttle not less than 1/3rd of the way open  
  
Indicated Airspeed (IAS) restrictions:  
 Diving 325 mph  
Gear down 140 mph  
Flaps down 125 mph  
  
Clearance for bomb drop with 500lb bombs (no idea about the 250lb ones):  
 Dive 55 degrees  
Climb 40 degrees  
Bank 10 degrees  
  
Exceeding these during a bomb drop probably means that your bombs will bounce around inside your own aircraft.  
  
Carb heat use:  
 (i) Set to on:  
a) For all flying at less than +3.5 boost, unless the ambient air temperature is above +15C. When it is higher than +15C, turn it off regardless of boost settings.  
b) For all flying (irrespective of boost and atmospheric temperature) in conditions of high humidity, in or just below clouds, in rain, snow or sleet. It can also be used to help warming up the engines in very cold weather.  
  
(ii) Set to off for all other conditions including:  
(a) Engine start at all times (seems contrary to what we've been doing in-game so far)  
(b) Take off  
(c) Landing, except in the high humidity conditions described above in point (i)b)  
  
  
Lots of other interesting stuff in the manual as well. For example, starting and shutting down the engines is done with the props at coarse pitch instead of fine, it mentions it's longitudinally unstable and that trim should be set slightly nose down for take-off (probably to help raise the tail faster).  
  
I will link the complete manual to be hosted at airwarfare.com as long as their site admin (Gamekeeper?) can assure me there's no copyright troubles involved on their end. Until then, have fun with the abbreviated checklists above, cheers

http://forum.1cpublishing.eu/showthread.php?t=23192