

HOW FAST IS YOUR PLANE GOING?

The pitch of a propellor tells you the number of inches that prop would move forward through the air in one rotation. So if you knew how fast the prop was rotating, you could calculate how many inches it would move forward in one minute, and so on, to mathematically calculate how fast the plane was flying in miles per hour. It's pretty easy to make the formula, or draw a nomograph, to calculate the speed in mph from prop rpm and pitch. But that wouldn't be too accurate, as it ignores all the variables.

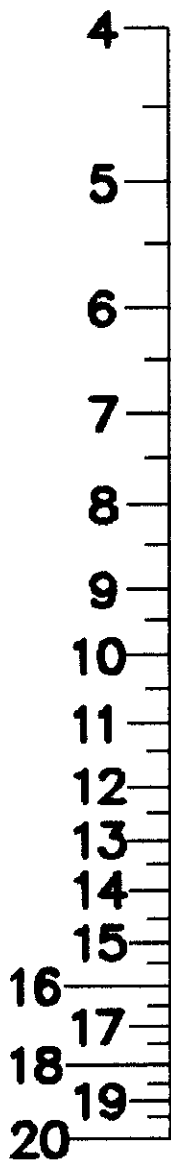
We know that our engines unload and speed up once the plane leaves the ground, and there is slippage of the prop in the air so it's not 100% efficient, and the aerodynamic drag of the airplane makes a difference in how fast it will fly. Weather conditions, air temperature and density, altitude all are variables that affect airspeed.

This nomograph was in one of the magazines a few years ago. Its author did some studying to take into account these variables and try to make his nomograph more accurate. It's still not perfect; a clean airplane with a thin wing will be going faster than predicted, and a draggy biplane will be going slower than predicted. But if you know the rpm's the prop is turning and know the pitch of the prop, this will give you a ballpark estimate of the speed the airplane is flying. Just take a straightedge, line up the rpm with the pitch, and read the flying speed off the middle column.

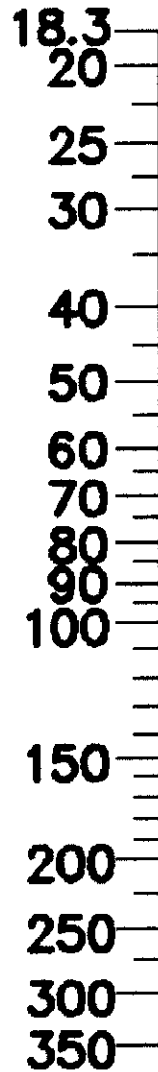
Have fun, and may the fastest plane win.

Research and text by Dick Sarpolus

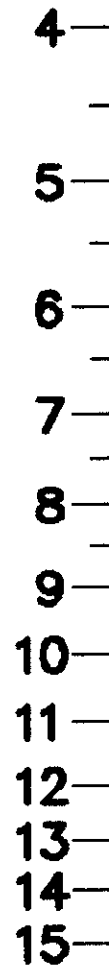
**Static RPM
X 1000**



**Level Flight
Speed (MPH)**



**Nominal
Pitch (inches)**



CAD layout by Ray Borden