to use Equation 8, is to obtain the speed polar curve for the aeroplane.

In order to demonstrate a method of calculation, the characteristics of an aeroplane widely used as a towplane, the De Haviland "Tiger Moth," will be employed. From various sources we have:

Maximum Power	140 b.h.p. at 2400 r.p.m.
Top Speed	107 m.p.h. at 1825 lb.
Cruising Speed	90 m.p.h. at 90 b.h.p.
Maximum Rate of Climb	750 f.p.m. at 65 m.p.h.
Wing Area	250 sq.ft.

For any light aeroplane with a fixed pitch propeller the following estimate of propeller efficiency will be sufficiently accurate for our purposes:

Top Speed or Cruising $n = 0.75$
Full Power Climb $n = 0.60$

Due to the biplane arrangement the effective aspect ratio is not obvious. However, with the help of photographs and a standard aerodynamics text we obtain:

Equivalent Monoplane Aspect Ratio $= 4.4$.

In level flight the total drag must be equal to the thrust, or in the usual notation:

$$550\ n\ b.\ h.\ p. = C_D \frac{\rho}{2} SV^3$$

Hence, substituting the values appropriate to top speed.

$C_{D\min} = 0.050$

(Continued on page 8)