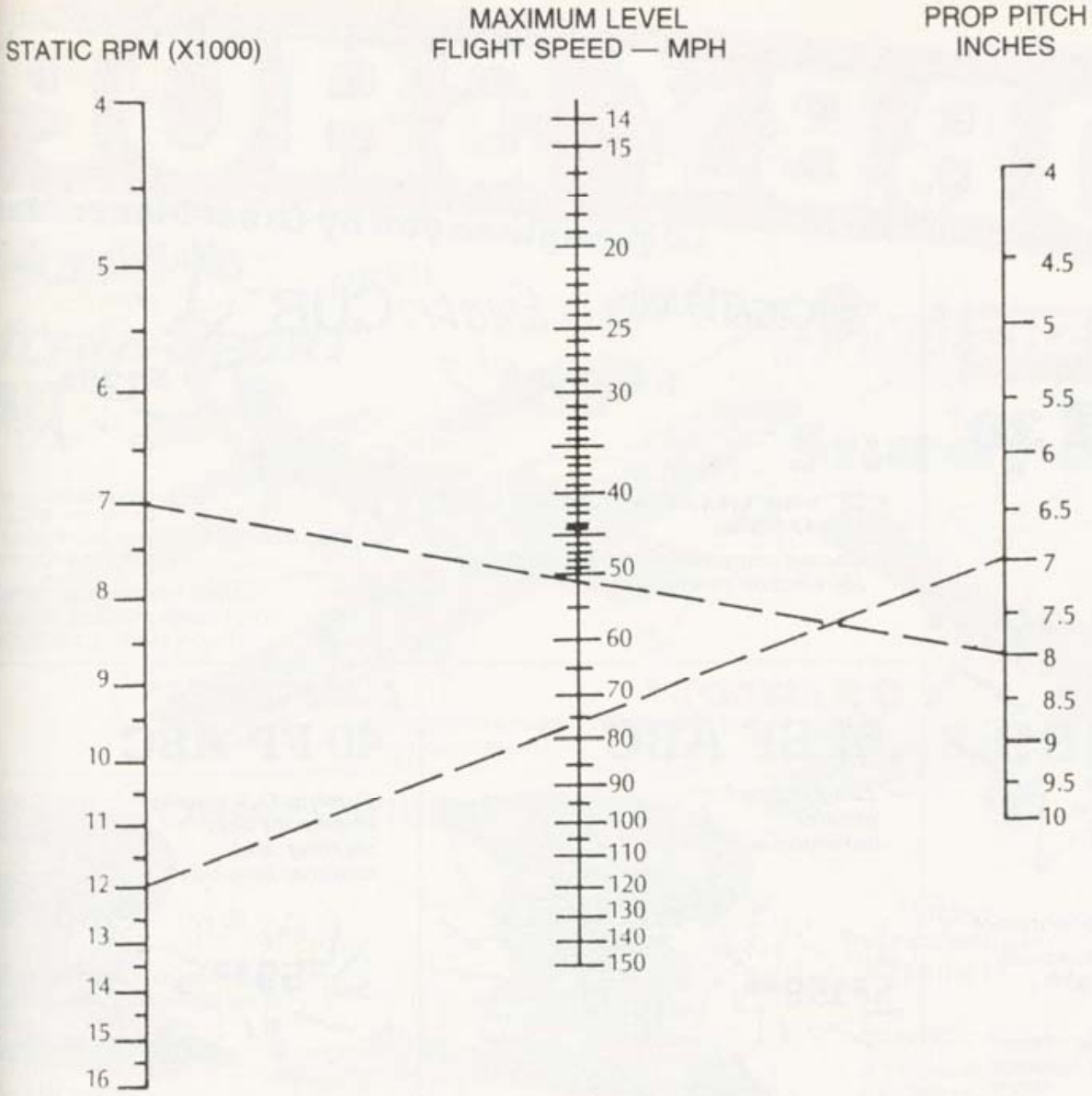

FIGURE 9-4
NOMOGRAPH FOR QUICK DETERMINATION OF RPM, PITCH & SPEED

plus pitching load as described in

The lift co-efficient per degree is:

determine the aft wing angle of attack.

To obtain the front wing's stalling angle adjusted for aspect ratio, planform, and RE, a similar procedure is followed.

Referring to Figure 9-2 again, select the peak of the lift curve at the RE involved. In the case of E214, this is C_L 1.20 at 10° angle of attack and RE 100.000. Total degrees to zero lift are 10° + 4.50 = 14.5°. Using AR of 6 and straight wing planform, the total of "section" and "induced" angles from zero lift is calculated:

$$14.5° + \frac{(18.24 \times 1.25)}{6} \times 1.17 = 18.94° - \text{say } 19°$$

From this value, deduct the degrees to zero lift of 4.5°: 19° − 4.5° = 14.5°.

Similar procedure applies to the aft wing's stalling angle. Normally the aft wing's chord is longer, so that it will be operating at a higher RE.

Section 10
Configurations and C.G. Location

There are many configurations for tandems and canards, ranging from wings of equal span, chord, and area, to those where the foreplane is 20% of the total wing area and the aft wing 80%.

Irregardless of these variations, it is relatively simple to locate the C.G. correctly **on the drawing board**. It is