supersonic transport in low-speed flight is shown. As can be seen in this example, there is dynamic instability in the statically stable M_α range enclosed by $M_{\alpha 3}$ and $M_{\alpha 4}$. From the root loci possible, it follows that this can only be an unstable oscillation and not a divergence.

In the second case of interest, the opposite of Eq. (9b) has to be considered. The corresponding M_u case has shown that $M_{\alpha 2}>0$. From this and the possible location of the stability boundaries it follows, that the origin $M_\alpha=0$ now lies between the intersections $M_{\alpha 3}$ and $M_{\alpha 4}$. This means that it lies in an unstable region. As a result, a reduction of M_α now leads to an aperiodic divergence before the static stability boundary is approached. This is illustrated in Fig. 4, which shows the characteristics of the SST of Fig. 3 when the drag-due-to-lift slope $\partial C_D/\partial C_L$ is assumed to be doubled. The instability developing is such that a reduction of M_α initially introduces an unstable oscillation. This is the case when M_α approaches the value

$$M_{\alpha 3} \approx 2\, Z_w M_q + (Z_u/X_u)(g\, Z_w - (X_\alpha - g) M_q)/U_o \qquad (11)$$

A further reduction of the static margin, being still positive, converts the unstable oscillation into a divergence. Its unstable root at the static stability boundary can be approximated by

$$1/T_{div} \approx X_u - (Z_u/Z_\alpha)\,(X_\alpha + g\, M_{\dot\alpha}/M_q) \qquad (12)$$

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Errata

Design of Crashworthy Aircraft Cabins Based on Dynamic Buckling

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THE quantities J_r and J_s represent the torsional rigidity constants of the rings and stringers, respectively, and not the polar moments of inertia. This changes the corresponding colums in Table 1 to read as follows:

Aircraft	J_{s_4} (in.)	J_{r_4} (in.)
A	0.000005	0.000027
B	0.00016	0.000057
C	0.00001	0.00014
D	0.000006	0.000049
Representative	0.00001	0.00014

Table 2 Buckling analysis results

Subshell	$\bar{F}_{cr}$	n at $\bar{F}_{cr}$
I	1.21	17
II	1.76	17
III	2.20	17

Table 3 Influence of number of stringers on buckling load of SSII

Number of stringers, M	$\bar{F}_{cr}$
30	1.02
40	1.16
50	1.27
60	1.38

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Table 4 Influence of spacing on buckling load

Dimensionless ring spacing, l/R	$\bar{F}_{cr}$
0.50	1.96
0.75	1.68
1.00	1.52
2.00	1.21

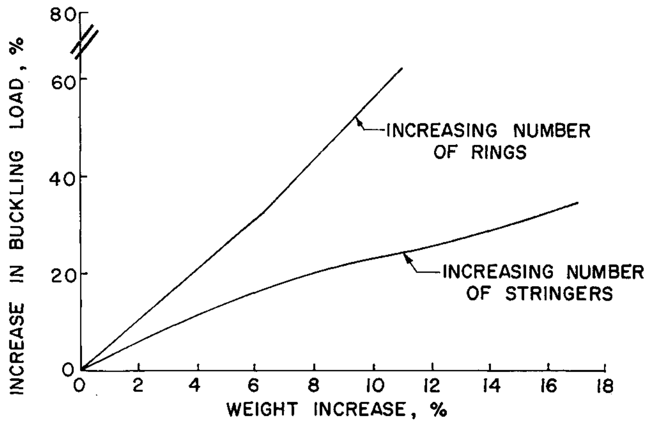

Fig. 2 Minimum-weight design considerations.

The above changes in input data for the representative aircraft changed Tables 2, 3 and 4 and Fig. 2 as will be shown. It is noted that reducing J_s and J_r by two and three orders of magnitude respectively reduces the dimensionless buckling load $\bar{F}_{cr}$ by as much as about 57%. However, the qualitative trends are the same as before and the number of circumferential waves at buckling were increased from 15 to only 17.

In the first paragraph of the section on "Modeling Using Subshells" (p. 694), reference was inadvertently made to Table 1 instead of Table 2.

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