

Table 6.2 Empty weight fraction vs W_0 , A , hp/W_0 , W_0/S , and V_{\max} (knots)

$$W_e/W_0 = a + bW_0^{C1} A^{C2} (hp/W_0)^{C3} (W_0/S)^{C4} V_{\max}^{C5}$$

fps units	a	b	$C1$	$C2$	$C3$	$C4$	$C5$
Sailplane—unpowered	0	0.76	-0.05	0.14	0	-0.30	0.06
Sailplane—powered	0	1.21	-0.04	0.14	0.19	-0.20	0.05
Homebuilt—metal/wood	0	0.71	-0.10	0.05	0.10	-0.05	0.17
Homebuilt—composite	0	0.69	-0.10	0.05	0.10	-0.05	0.17
Gen. Av.—single engine	-0.25	1.18	-0.20	0.08	0.05	-0.05	0.27
Gen. Av.—twin engine	-0.90	1.36	-0.10	0.08	0.05	-0.05	0.20
Agricultural aircraft	0	1.67	-0.14	0.07	0.10	-0.10	0.11
Twin turboprop	0.37	0.09	-0.06	0.08	0.08	-0.05	0.30
Flying boat	0	0.42	-0.01	0.10	0.05	-0.12	0.18