Design, Analysis and Research Corporation (DARcorporation)

ERRATA: Airplane Design Part VI

Year of Print, 1990
(Errata Revised August 9, 2022)

Please check the website www.darcorp.com for updated errata

page xx, Line 29	'$\overline{x}_{ac_h} = x_{ac} / \overline{c}$' should be '$\overline{x}_{ac_h} = x_{ac_h} / \overline{c}$'
page 27, Equation (4.9)	Should read: $C_{L_w} = C_L - C_{L_c} \frac{S_c}{S} - C_{L_h} \frac{S_h}{S}$
page 28, Line 3	Should read 'ε_t = wing twist angle in radians, positive for wash-in …'
page 46, Equation (4.33)	Should read: $C_{D_{L_{fus}}} = 2\alpha^2 \frac{S_{b_{fus}}}{S} + \eta c_{d_c} \lvert\alpha\rvert^3 \frac{S_{plf_{fus}}}{S}$
page 47, Figure 4.20	'$M_c = M \sin\alpha$' should read '$M_c = M \sin\lvert\alpha\rvert$'
page 49, Equation (4.39)	Should read: $C_{D_{L_{fus}}} = \alpha^2 \frac{\left(S_{b_{fus}}\right)}{S}$
page 49, Equation (4.41)	Should read:

$$C_{D_{o_{fus}}} = \left\{ C_{f_{fus}} \left(\frac{S_{wet_{fus}}}{S_{fus}} \right) + C_{D_{N_2}} + C_{D_A} + C_{D_{A(NC)}} + C_{D_{b_{fus}}} \right\} \left(\frac{S_{fus}}{S} \right)$$

page 52, Equation (4.43)	Should read: $C_{D_{L_{fus}}} = F \left\{ 2\alpha^2 \frac{S_{b_{fus}}}{S} + c_{d_c} \frac{S_{plf_{fus}}}{S} \lvert\alpha\rvert^3 \right\}$
page 70, Line 9	Should read '... of 4.2.2.1 but with the appropriate...'
page 73, Line 23	Should read 'Figure 4.36 illustrates two possibilities. $\varepsilon_n > 0$ for upwash and $\varepsilon_n < 0$ for downwash.'
page 73, Line 28	'Chapter 10' should be 'Chapter 8'

page 77, Line 17	'$\Delta c_{l_2} = -0.056(i_n)$' should be '$\Delta c_{l_2} = +0.056(i_n)$ (i_n is in degrees)'
page 86, Line 3	'Eqn. (4.1)' should be 'Eqn. (4.6)'
page 86, Line 23	'Chapter 9' should be 'Chapter 8'
page 88, Figure 4.52	'$\frac{b_f}{b}$' should be '$\frac{b_{f_o}}{b}$'
page 89, Figure 4.53	Add $\frac{b_{f_i}}{b} = 0.6$ to bottom graph margin
page 97, Figure 4.60	Horizontal axis title should read 'TAKE-OFF WEIGHT $\sim W_{TO}/1{,}000$'
page 104, Line 25	'inremental' should be 'incremental'
page 105, Equation (4.84)	Should read:

$$\Delta C_{D_{trim_{prof}}} = \left(\Delta C_{D_p}\right)_{\Lambda_{c/4_h}=0} \cos\Lambda_{c/4_h} \left(\frac{S_{ef}}{S_h}\right)\left(\frac{S_h}{S}\right) + \left(\Delta C_{D_p}\right)_{\Lambda_{c/4_c}=0} \cos\Lambda_{c/4_c} \left(\frac{S_{cf}}{S_c}\right)\left(\frac{S_c}{S}\right)$$

page 115, Equation (4.88)	Should read: $C_{f_{w_{lam}}} = \frac{1.328}{\left(R_{N_{w_{lam}}}\right)^{1/2}}$
page 115, Equation (4.90)	Should read: $C_{f_{fus_{lam}}} = \frac{1.328}{\left(R_{N_{fus_{lam}}}\right)^{1/2}}$
page 142, Line 7	'Chapter 6' should be 'Chapter 7'
page 146, Line 22	'form' should be 'from'
page 171, Equation (6.25)	Should read: $A_c = \left(\frac{1.08\dot{m}_a}{\rho U_1}\right)\left\{1 + k_{bl}\left(M_1 - 0.8\right)\right\}$
page 171, Line 7	Should read 'where: $\dot{m}_a$ follows from Eqn. (6.19)'

page 177, Line 22	'6.1.3.4' should be '6.2.3.4'
page 181, Equation (6.44)	Should read: $F_{inl} = 1 + 1.75\left\{\left(\frac{\mu_{inl} - 1}{\mu_{inl}}\right)\left(\frac{1}{\frac{A_m}{A_c} - 1}\right)\right\}$
page 200, Figure 6.38	Vertical axis units should be in 1,000 lb
page 205, Line 4	Should read '$P_{av} = \left(SHP_{av}\eta_{inl/inc} - P_{extr}\right)\eta_p\eta_{gear}$'
page 205, Line 5	Should read '$= \left(SHP_{av}\left(0.98\right) - 4\right)\left(0.88\right)\left(1.0\right)$'
page 205, Line 9	Should read
'SHP_{av}	285 248 206 172 140
$\left(SHP_{av}\eta_{inl/inc} - P_{extr}\right)$	275 239 198 165 133
P_{av}	242 210 174 145 117'
page 212, Figure 7.5	Vertical axis units should be in 1,000 lb
page 224, Figure 8.9	'NACA 63-005' should be 'NACA 63-006'
page 229, Equation (8.7)	Should read: $\Delta c_l = \eta_1\left(c_{l_{\delta_{f_1}}}\right)\left(\delta_{f_1}\right)\left\{\frac{\left(c + c_1\right)}{c}\right\} + \eta_2\left(c_{l_{\delta_{f_2}}}\right)\left(\delta_{f_1} + \delta_{f_2}\right)\left(\frac{c'}{c}\right)$
page 233, Equation (8.10)	Should read: $\Phi_{TE_{UPPER}} = \arctan\left\{10\frac{\left(y_{90} - y_{100}\right)}{c}\right\}$
page 236 Figure 8.26	Vertical axis values should be negative
page 239, Equation (8.19)	Should read: $\Delta c_{l_{\max}} = \left(c_{l_{\delta_{\max}}}\right)\eta_{\max}\delta_f\eta_\delta\left(\frac{c'}{c}\right)$
page 245, Equation (8.20)	Should read: $\alpha_w = \alpha + i_w$
page 259, Line 9	Should read '… leading edge flaps at $\alpha = 0$ may be estimated from:'

page 268, Equation (8.32)	Should read:

$$C_{L_o} = C_{L_{o_{wf}}} + C_{L_{\alpha_h}} \eta_h \left(\frac{S_h}{S} \right) \left(-\varepsilon_{o_h} - \alpha_{o_{L_h}} \right)$$
$$+ C_{L_{\alpha_c}} \eta_c \left(\frac{S_c}{S} \right) \left(\varepsilon_{o_c} - \alpha_{o_{L_c}} \right)$$

page 269, Equation (8.37)	Should read:

$$\eta_h = 1 - \left[\left\{ \cos^2 \left(\frac{\pi \, z_{h_{wake}}}{2 \, \Delta z_{wake}} \right) \right\} \left\{ 2.42 \sqrt{C_{D_{o_w}}} \right\} \bigg/ \frac{x_{h_{wake}}}{\overline{c}} + 0.30 \right]$$

page 269, Line 23	Should read

'where: $z_{h_{wake}} = a \sin\left(\gamma_h - \alpha - i_w + \varepsilon_h \right)$ (8.38a)

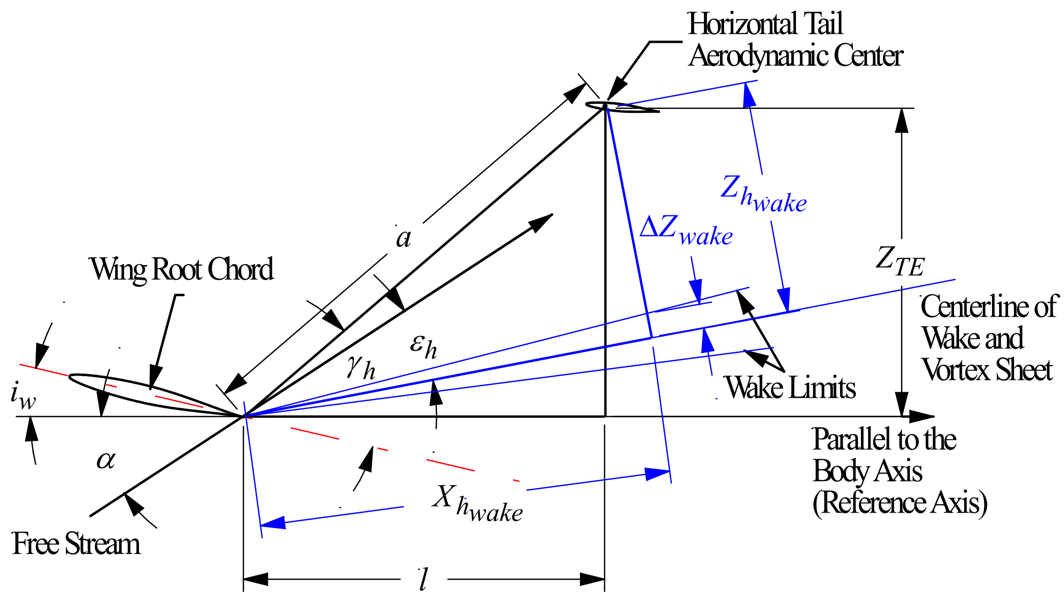
$x_{h_{wake}} = a \cos\left(\gamma_h - \alpha - i_w + \varepsilon_h \right)$ (8.38b)

with $a, \gamma_h, \varepsilon_h, i_w$ *and* α shown in Fig. 8.63.'

page 269, Equation (8.39) Should read: $\varepsilon_h = \varepsilon_{h_o} + \left(\frac{d\varepsilon_h}{d\alpha} \right)_{p.\,off} \alpha$

page 269, Equation (8.40) $\Delta z_{wake} = 0.68 \overline{c} \sqrt{C_{D_{o_w}} \left(\frac{x_{h_{wake}}}{\overline{c}} + 0.15 \right)}$

page 270, Figure 8.63 Should be



page 271, Line 28	Following Line 28, should read '$\alpha_{o_{L_h}}$ is the horizontal tail zero-lift angle of attack as found from 8.1.3.1 with appropriate substitution of tail parameters for wing parameters.'
page 271, Line 28	Following Line 28, should read '$\alpha_{o_{L_c}}$ is the canard zero-lift angle of attack as found from 8.1.3.1 with appropriate substitution of canard parameters for wing parameters.'
page 272, Equation (8.48)	Should read: $K_h = \dfrac{\left(1 - \left\lvert \dfrac{h_h}{b} \right\rvert\right)}{\left(\dfrac{2l_h}{b}\right)^{1/3}}$
page 273, Figure 8.65c	'K_H 'should be 'K_h'
page 273, Figure 8.65c	'$\dfrac{2h_H}{b}$ 'should be '$\dfrac{2h_h}{b}$'
page 273, Figure 8.65c	'$\dfrac{2l_H}{b}$ 'should be '$\dfrac{2l_h}{b}$'

page 273, Figure 8.65c ‘ $K_H = \dfrac{1-\dfrac{h_H}{b}}{\sqrt[3]{\dfrac{2l_H}{b}}}$ ’should be ‘ $K_h = \dfrac{1-\left|\dfrac{h_h}{b}\right|}{\sqrt[3]{\dfrac{2l_h}{b}}}$ ’

page 275, Equation (8.50) Should read:

$$C_{L_{\max}} = C_{L_{\max_w}} - \left(C_{L_{\alpha_{wf}}}\right)\Delta\alpha_{w/c} +$$
$$+\left(C_{L_{\alpha_h}}\right)\left(\frac{S_h}{S}\right)\left\{\left(\alpha_{C_{L_{\max}}}\right)\left(1-\frac{d\varepsilon}{d\alpha}\right)-\varepsilon_{o_h}+i_h\right\}+$$
$$+\left(C_{L_{\alpha_c}}\right)\left(\frac{S_c}{S}\right)\left\{\left(\alpha_{C_{L_{\max}}}\right)\left(1+\frac{d\varepsilon_c}{d\alpha}\right)+\varepsilon_{o_c}+i_c\right\}$$

page 279, Figure 8.70 Vertical axis should have units of degrees

page 280, Equation (8.54) Should read:

$$\Delta C_{L_{max}} = K_{cw}\Delta C_{L_{max_w}} - \left(C_{L_{\alpha_w}}\right)_\delta \Delta\alpha_{w/c}$$
$$+\left(S_c/S\right)\Delta C_{L_{max_c}} + \left(S_h/S\right)C_{L_{\alpha_h}}\left(-\Delta\varepsilon_f\right)$$

page 281, Equation (8.55) Should read:

$$\Delta\alpha_g = -F_{tv}\left\{\left(\frac{9.12}{A}\right)+7.16\left(\frac{c_r}{b}\right)\right\}\left(C_{L_{wf}}\right)+$$
$$-\left\{\frac{A}{\left(2C_{L_{\alpha_{wf}}}\right)}\right\}\left(\frac{c_r}{b}\right)\left\{\left(\frac{L}{L_o}\right)-1\right\}\left(C_{L_{wf}}\right)r_g +$$
$$-\left\{\frac{\left(\frac{\delta_f}{50}\right)^2}{\left(C_{L_{\alpha_{wf}}}\right)}\right\}\Delta\left(\Delta C_L\right)_f$$

page 305, Equation (8.73) Should read: $n_{ac} = n_{mgc} + 0.25\overline{c}$

page 311, Equation (8.74) Should read: $\Delta C_{m_w} = \left(\overline{x}_{ref} - 0.25\right)\Delta C_{L_w} + \ldots$

page 311, Line 25	Should read 'ΔC_{L_w} is the wing lift increment due to flaps.'
page 320, Equation (8.78)	Should read: $C_{m_{o_f}} = \left\{\frac{(k_2 - k_1)}{36.5S\bar{c}}\right\}\left[\underset{i=1}{\overset{i=13}{Sum}}\left\{\left(w_{f_i}{}^2\right)\left(-i_w + \alpha_{o_{L_w}} + i_{cl_f}\right)\Delta x_i\right\}\right]$
page 323, Line 1	Should read 'airplane zero angle of attach of the canard and of …'
page 333, Equation (8.97)	Should read: $\varepsilon = \alpha\left(\frac{d\varepsilon_h}{d\alpha}\right) + \varepsilon_{o_h}$
page 335, Equation (8.100)	Should read: $\varepsilon = \alpha\left(\frac{d\varepsilon_c}{d\alpha}\right) + \varepsilon_{o_c}$
page 340, Equation (8.107)	Should read: $K_{T_i} = \frac{\left\{550\left(SHP_{av_i}\right)(\rho)^{1/2}\right\}}{\left\{\left(2W/S\right)^{3/2}\left(D_{P_i}\right)^2\right\}}$
page 342, Equation (8.108)	Should read: $(dC_m/dC_L)_N = \underset{i=1}{\overset{i=n}{Sum}}\left[\frac{\left\{(dC_N/d\alpha)_{P_i}\left(d\bar{\varepsilon}_{P_i}/d\alpha\right)\left(l_{P_i}\right)\left(\frac{\pi}{4}\right)\left(D_{P_i}\right)^2\right\}}{S\bar{c}C_{L_{\alpha_w}}}\right]$
page 357, Table 9.1	Third row, second column '0.8' should be '-0.8'
page 374, Equation (10.8)	Should read: $C_{T_{X_1}} = C_{D_1}$
page 375, Figure 10.3	Caption should read 'Figure 10.3 Determination of: $\frac{\partial C_D}{\partial M}$
page 377 Equation (10.12)	Should read: $C_{m_u} = -C_{L_1}\left(\frac{\partial \bar{x}_{ac_A}}{\partial M}\right)M$

page 377, Equation (10.13) Should read: $C_{T_{x_u}} = \left(\frac{1}{\bar{q}S}\right)\left(\frac{\partial P_{reqd}}{\partial u}\right) - 3C_{T_{X_1}}$

page 382, Equation (10.24) Should read: $C_{m_{\dot{\alpha}}} = -2\left(C_{L_{\alpha_h}}\right)\eta_h\left(\bar{V}_h\right)\left(\bar{x}_{ac_h} - \bar{x}_{cg}\right)\left(\frac{d\varepsilon}{d\alpha}\right)$

page 382, Line 15 '(10.23)' should be '(10.22)'

page 390, Figure 10.16 'z_h= vertical distance…' should be 'z_h= vertical distance between the horizontal tail aerodynamic center to the fuselage center line'

page 397, Equation (10.39) Should read: $C_{l_{\beta_v}} = \left(C_{y_{\beta_v}}\right)\left\{\frac{\left(z_v \cos\alpha - l_v \sin\alpha\right)}{b}\right\}$

page 397, Line 21 'C_{y_β}' should be '$C_{y_{\beta_v}}$'

page 398, Equation (10.44) Should read:

$$C_{n_{T_\beta}} = -\underset{i=1}{\overset{i=n}{Sum}}\left[\frac{\left\{\left(\frac{dC_N}{d\alpha}\right)_{p_i}\left(\frac{\pi}{4}\right)\left(D_{p_i}\right)^2\left(l_{p_i}\right)\right\}}{Sb}\right]$$

page 400, Equation (10.45) Should read: $C_{n_{T_\beta}} = -\underset{i=1}{\overset{i=n}{Sum}}\frac{0.035 m_{a_i} l_{n_i}}{Sb\rho U_1}$

page 401, Line 19 Should read 'where: σ_{β_α} is the sidewash contribution due to angle of attack, in $\deg^{-1}$. It is found from Figures 10.30.'

page 401, Line 21 Should read 'α_f is the angle of attack of the fuselage, in deg.'

page 401, Line 22 Should read 'σ_{β_Γ} is the sidewash contribution due to wing dihedral, in $\deg^{-1}$. It is found from Figures 10.31.'

page 401, Line 24 Should read 'Γ is the wing dihedral angle, in deg, as defined in Figure 10.7.'

page 401, Line 26 Should read '$\sigma_{\beta_{\varepsilon_t}}$ is the sidewash contribution due to wing twist, in $\deg^{-1}$, as obtained from Figures 10.32.'

page 401, Line 28 Should read 'ε_t is the wing twist angle, in $\deg$, as shown in Figure 10.26.'

page 402, Figure 10.30a Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 403, Figure 10.30b Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 404, Figure 10.30c Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 405, Figure 10.30d Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 406, Figure 10.31 Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 407, Figure 10.32a Include following Note that reads

'$z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34'

page 408, Figure 10.32b Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 409, Figure 10.32c Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 410, Figure 10.32d Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 411, Figure 10.33a Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 412, Figure 10.33b Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 413, Figure 10.33c Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 414, Figure 10.33d Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 415, Figure 10.33e Include following Note that reads

‘ $z_v = z_p \cos\alpha_f - l_p \sin\alpha_f$
where: z_p and l_p are defined in Figure 10.34’

page 417, Equation (10.50) Should read:

$$C_{y_p} = 2C_{y_{\beta_v}}\left(\frac{z_v \cos\alpha - l_v \sin\alpha - z_v}{b}\right) + 3\sin\Gamma\left(1 - \frac{4z}{b}\sin\Gamma\right)\left(C_{l_p}\right)_{\substack{\Gamma=0\\C_L=0}}$$

page 417, Line 14 — Following Line 14, should read 'z is the vertical distance between the airplane center of gravity and the wing root quarter chord point.'

page 417, Line 14 — Following Line 14, should read

'$\left(C_{l_p}\right)_{\substack{\Gamma=0\\C_L=0}} = \frac{k}{\beta}\left(\frac{\beta C_{l_p}}{k}\right)_{C_L=0}$ (10.50a)'

page 418, Figure 10.35 — Vertical axis should read $\left(\frac{\beta C_{l_p}}{k}\right)_{c_L=0}$

page 419, Equation (10.55) — Should read:

$$\frac{\left(C_{l_p}\right)_\Gamma}{\left(C_{l_p}\right)_{\Gamma=0}} = 1 - \left(4z_w/b\right)\sin\Gamma + 12\left(z_w/b\right)^2\left(\sin\Gamma\right)^2$$

page 421, Equation (10.60) — Should read:

$$C_{l_{p_v}} = \frac{2}{{b_w}^2}\left|\left(z_v\cos\alpha - l_v\sin\alpha\right)\left[\left(z_v\cos\alpha - l_v\sin\alpha\right) - \left(Z_{ac_v} - Z_{cg}\right)\right]\right| C_{y_{\beta_v}}$$

page 421, Line 14 — Should read 'where: z_v and l_v are defined in Figure 10.27'

page 421, Equation (10.62) — Should read:

$$C_{n_{p_w}} = \left\{\left(C_{n_p}/C_L\right)_{\substack{C_L=0\\M}}\right\}C_{L_w} + \left(C_{n_p}/\varepsilon_t\right)\varepsilon_t + \left[\Delta C_{n_p}\Big/\left(\alpha_{\delta_f}\delta_f\right)\right]\alpha_{\delta_f}\delta_f$$

page 422, Equation (10.66) — Should read: $\alpha_{\delta_f} = \frac{\Delta c_l}{\left(c_{l_\alpha}\delta_f\right)}$

page 424, Equation (10.71) — Should read: $\left(C_{L_{q_w}}\right)_{M=0} = \left(0.5 + 2\frac{x_w}{\bar{c}}\right)C_{L_{\alpha_w}}$

page 430, Figure 10.42 — Vertical axis values should be divided by -4

page 435, Equation (10.89)	Should read: $C_{D_{i_h}} = \frac{2C_{L_o}}{\pi Ae} C_{L_{\alpha_h}} \eta_h \frac{S_h}{S}$
page 435, Line 36	Should read 'where: C_{L_o} is the airplane zero-angle-of-attack lift coefficient follows from Eqn. (10.90).'
page 436, Equation (10.90)	Should read: $C_{L_o} = C_{L_{o_{wf}}} + C_{L_{\alpha_h}} \eta_h \left(S_h/S\right)\left(-\alpha_{o_{L_h}} - \varepsilon_{o_h}\right) + C_{L_{\alpha_c}} \eta_c \left(S_c/S\right)\left(-\alpha_{o_{L_c}} - \varepsilon_{o_c}\right)$
page 436, Line 3-7	Remove Line 3-7
page 436, Line 7	Should read 'A is the wing aspect ratio'
page 436, Line 8	Should read 'e is the Oswald's efficiency factor as found from Section 5.3'
page 439, Equation (10.97)	Should read: $C_{D_{i_c}} = \frac{2C_{L_o}}{\pi Ae} C_{L_{\alpha_c}} \eta_c \frac{S_c}{S}$
page 439, Line 5	Should read 'where: C_{L_o} is the airplane zero-angle-of-attack lift coefficient follows from Eqn. (10.98).'
page 439, Equation (10.98)	Should read: $C_{L_o} = C_{L_{o_{wf}}} + C_{L_{\alpha_h}} \eta_h \left(S_h/S\right)\left(-\alpha_{o_{L_h}} - \varepsilon_{o_h}\right) + C_{L_{\alpha_c}} \eta_c \left(S_c/S\right)\left(-\alpha_{o_{L_c}} - \varepsilon_{o_c}\right)$
page 439, Line 8-12	Remove Line 8-12
page 439, Line 12	Should read 'A is the wing aspect ratio'
page 439, Line 13	Should read 'e is the Oswald's efficiency factor as found from Section 5.3'
page 439, Equation (10.100)	Should read: $C_{m_{i_c}} = \left(C_{L_{\alpha_c}}\right)\eta_c \overline{V}_c$
page 440, Equation (10.102)	Should read:

$$\left(\alpha_{\delta_c}\right) = K_b \left\{ \frac{c_{l_\delta}}{\left(c_{l_\delta}\right)_{theory}} \right\} \left(c_{l_\delta}\right)_{theory} * \left(\frac{k'}{c_{l_{\alpha_c}}} \right) \left[\frac{\left\{\left(\alpha_\delta\right)_{C_L}\right\}}{\left\{\left(\alpha_\delta\right)_{c_l}\right\}} \right]$$

page 446, Equation (10.110) Should read: $c_{l_\delta} = \left\{ \frac{c_{l_\delta}}{\left(c_{l_\delta}\right)_{theory}} \right\} \left(c_{l_\delta}\right)_{theory} k'$

page 446, Line 27 Following Line 27, should read 'k' is found from Figure 8.13.'

page 447, Equation (10.111) Should read: $C_{l_a} = \left(\frac{C_{l_\delta}}{2} \right)_{left} \delta_{a_{left}} + \left(\frac{C_{l_\delta}}{2} \right)_{right} \delta_{a_{right}}$

page 447, Equation (10.112) Should read: $\delta_a = 0.5\left(\delta_{a_{left}} + \delta_{a_{right}}\right)$

page 447, Equation (10.113) Should read: $C_{l_{\delta_a}} = \frac{C_{l_a}}{\delta_a}$

page 453, Figure 10.52 '$\left(\frac{C_n}{h_{sp} c} \right)$' should be '$\left(\frac{C_n}{h_{sp}/c} \right)$'

page 454, Figure 10.53 '$\left(\frac{C_n}{h_{sp} c} \right)$' should be '$\left(\frac{C_n}{h_{sp}/c} \right)$'

page 461, Line 10 Following Line 10, should read 'For single vertical tail:

$$C_{y_{\delta_r}} = K_b C_{L_{\alpha_v}} \frac{S_v}{S} \left\{ \frac{c_{l_\delta}}{\left(c_{l_\delta}\right)_{theory}} \right\} \left(c_{l_\delta}\right)_{theory} \left(\frac{k'}{c_{l_{\alpha_v}}} \right) \left\{ \frac{\left(\alpha_\delta\right)_{C_L}}{\left(\alpha_\delta\right)_{c_l}} \right\} \eta_v \qquad (10.123a)\text{'}$$

page 461, Line 19 Following Line 19, should read 'For twin vertical tail:

$$C_{y_{\delta_r}} = 2 \left(\frac{C_{y_{\beta_{v(wfh)}}}}{C_{y_{\beta_{v_{eff}}}}} \right) K_b C_{L_{\alpha_v}} \frac{S_v}{S} \left\{ \frac{c_{l_\delta}}{\left(c_{l_\delta}\right)_{theory}} \right\} \left(c_{l_\delta}\right)_{theory} \left(\frac{k'}{c_{l_{\alpha_v}}} \right) \left\{ \frac{\left(\alpha_\delta\right)_{C_L}}{\left(\alpha_\delta\right)_{c_l}} \right\} \eta_v \qquad (10.123b)$$

Where: $\left(\dfrac{C_{y_{\beta_{v_{(wfh)}}}}}{C_{y_{\beta_{v_{eff}}}}} \right)$ is found from Figure 10.17'

page 467, Line 31 Should read '… $\left\{ \dfrac{c_{l_\alpha}}{\left(c_{l_\alpha}\right)_{theory}} \right\}$ in Fig. 10.63a is itself found from Fig. 10.64a with the assumption shown in Eqn. (10.128).'

page 470, Line 1 '(10.126)' should be '(10.128)'

page 470, Line 10 Should read '$\left\{ \dfrac{c_{l_\alpha}}{\left(c_{l_\alpha}\right)_{theory}} \right\}$ is obtained from Figure 10.64a with the assumption shown in Eqn. (10.128)'

page 484, Equation (10.145) Should read:

$$C_{h_\delta} = \left(\cos\Lambda_{c/4}\right)\left(\cos\Lambda_{hl}\right)\left[\left(c_{h_\delta}\right)_M - \alpha_\delta \left(c_{h_\alpha}\right)_M \left\{ \frac{\left(2\cos\Lambda_{c/4}\right)}{\left(A + 2\cos\Lambda_{c/4}\right)} \right\} \right] + \Delta C_{h_\delta}$$

page 486, Equation (10.149) Should read: $\left(c^t{}_{h_\delta}\right)_{\alpha,\delta_t} = \ldots$

page 509, Line 20 Should read 'Note: These books are all published by: Design, Analysis and Research Corporation, 1440 Wakarusa Drive, Suite 500, Lawrence, KS, 66049. Tel. (785) 832-0434'

page 521, Table A1 Pressure Ratio, δ, for 154,199 ft should be 0.001095

page 521, Table A1 Pressure (psia) for 200,000 ft should be 0.002655 psia

page 521, Table A1 Pressure (psia) for 200,131 ft should be 0.002641 psia