Typographical Errors in Robert L. McCoy, "Modern Exterior Ballistics"
Schiffer Publishing Ltd, Atglen, PA, 1999

Corrections by Donald G. Miller, LLNL, based on comparisons with the Final Manuscript.
With additions and corrections by Henry Hudgins, Picatinny (denoted by H).
by Gene Cooper and Peter Plostins, ARL.
by Robert Lieske and Henry Hudgins (denoted by L).
by Gene Cooper, ARL (denoted by C).
by Darrel Barnette, U. of Texas (denoted by B).
by James B. Millard, "On-line Ballistics" (denoted by M).

Note: Many of the corrections below are "cosmetic", such as revised spacings between symbols or commas, and are designed to make the text easier to read. These were included in the as yet unrealized hope that the publisher would reprint the text or at least include these corrections in an errata sheet. However, most of the errors corrected below are serious, and include incorrect equations and symbols, missing but essential equations and symbols, wrong table headings, incorrect spellings, the botching of the MCTRAJ Basic listing, completely wrong references for Chapter 9, and the missing index. Only a few of these errors are typos in Bob's final manuscript.

Bob McCoy passed away just after he submitted that final manuscript, and could not oversee the final result. No corrections could have been made before printing because galley or page proofs were never sent to any of his representatives.

The symbol $\longrightarrow$ means "is corrected to read". lc and uc mean lower case and upper case, respectively.

P8   L1:   wish toeve $\longrightarrow$ wish to leave

Chapter 1   PP10-31

P10   RH col line 6:   _ $\longrightarrow$ 3/4

P23   RH col line 7:   _ $\longrightarrow$ 7/8

P30   LH col ref 2:   1893 $\longrightarrow$ 1900   wrong in MS
P30   LH col: insert a blank line between ref 15 and ref 16

Chapter 2   PP32-41

P33   LH col 3rd line above eq. (2.3):   angle is , $\longrightarrow$ angle is α_t,   i.e., insert "α_t" between "is" and comma

L P33   RH col 12th line above § 2.3: $\sin\alpha_t = \sqrt{\left(\dfrac{\sin\alpha}{\cos\beta}\right)^2 + \sin^2\beta} \longrightarrow \sin\alpha_t = \sqrt{(\sin\alpha\cos\beta)^2 + \sin^2\beta}$

i.e., fraction is wrong (wrong in MS)
P33   RH col 5th line above § 2.3: $,\alpha_t \longrightarrow , \alpha_t$ i.e., insert space between comma and "α_t"

P34   RH col eq. (2.6-a):   Vecto $\longrightarrow$ Vector

P35   LH col eq. (2.8):   Avial $\longrightarrow$ Axial

P35   RH col eq. (2.12) and (2.13):   change the fonts of these equations to be consistent with all the others

P35   RH col below eq. (2.13): $\cos \alpha_{,t} \approx 1$and $\longrightarrow$ $\cos \alpha_t \approx 1$ and

i.e., delete comma before subscript t and insert space between " 1 " and "and"

P36   LH col 2nd definition under eq. (2:16): $C_{N_{\alpha 02}}$ $\longrightarrow$ $C_{N_{\alpha_2}}$ i.e., delete subscript 0 and lower the 2

P36   RH col 1st line of 3rd par.:   positive C_{M_α} $\longrightarrow$ positive C_{M_α} i.e., insert space before C_{M_α}

P37   RH col 2nd line of par. below eq. (2.24):

moment on is $\longrightarrow$ moment on $\sin \alpha_t$ is   i.e., insert "sin α_t"

P38   LH col line below eq. (2.26):   reduce the large space between "where" and "CP_F"

P38   RH col 3rd line from bottom: insert q_t and $\dot\alpha_t$ as below

proportional to   and one proportional to   . $\longrightarrow$ proportional to q_t and one proportional to $\dot\alpha_t$.

P40   LH col Table 2.1:

All symbols on the left hand side of the equations should have a circumflex ^ overscript, not a $\cap$ overscript.

Equations $4 - 9$ should have subscripts α (alpha), not a (lower case A)

P40   LH col 2nd line under § 2.14:   (etc.) $\longrightarrow$ (K_D, K_L, K_M, etc.)

P40   RH col Table 2.2:

The right hand sides of the Spin Damping Coefficient, Magnus Force Coefficient, and Magnus

Moment Coefficient equations (C_{l_p} , $C_{N_{p\alpha}}$, $C_{M_{p\alpha}}$) should all have minus signs, i.e.,

$$ -\frac{8}{\pi} K_A \, , \ -\frac{8}{\pi} K_F \, , \ -\frac{8}{\pi} K_T \, , \ \text{respectively.} $$

P41   Table 2.3:   Row 3, 4, 5, 6, 9, 10 of columns 2 and 3 are not lined up with column 1

P41   RH col Ref. 9:   Configuratsl $\longrightarrow$ Configurational   (wrong in the manuscript)

Chapter 3   PP42-51

H P43   RH col eq. (3.12):   X= $\longrightarrow$ Y=

P44   LH col eq. (3.14):   insert space between LH vertical line of box and "Y"

P44   LH col under eq. (3.16):   close up large space between "where" and "R = range…"

P44   LH col under eq. (3.17):   no indent before "where"

P44   LH col 2nd line from bottom: no indent before "and for…"

P44   RH col 2nd line above eq. (3.18):   toϕ_0 $\longrightarrow$ to ϕ_0 i.e., add space after "to"

P44   RH col 2nd line above eq. (3.20):

denoted by ϕ_0 $\longrightarrow$ denoted by $\hat\phi_0$ i.e., add space after "by" and a " ^ " to "ϕ_0"

P45   LH col   2nd line above eq. (3.21): The beginning of this line should read: velocity, V_y , is zero.

i.e., V_{y0} is wrong and falls on top of the word "zero". "V_y " should go between the commas.

P45   LH col   line below eq. (3.21):   whereY_S is $\longrightarrow$ where Y_S is   i.e., a space after "where"

P46   RH col: eq. $(3.31) - (3.33)$ should have "$\approx$" instead of "=".

P47   RH col   2nd par. line1:   the $\tilde X$ $\longrightarrow$ the $\tilde X$ i.e., a space before $\tilde X$

2nd par. line2:   " $\tilde Y$ " missing at beginning of the line

2nd par. line2:   the $\tilde X$ –axis $\longrightarrow$ the $\tilde X$ –axis   i.e., add space before $\tilde X$, delete after

2nd par. line3: close up space between "$\widetilde{Y}$" and "– axis"

2nd par. line4: close up space between "$\widetilde{X}$" and "– axis"

P48 LH col line below eq. (3.45): "Equation" should not be indented and should not be capitalized.

P48 RH col line 2: angles, can be … $\longrightarrow$ angles, R_S/R can be i.e., insert "R_S/R", after "angles,"

P48 RH col line 4: ofϕ_0 $\longrightarrow$ of ϕ_0 i.e., insert space after "of"

P48 RH col line 5: insert space after "setting"

H P48 RH col line 6: forϕ_0 $\longrightarrow$ for ϕ_0 i.e., insert space after "for"

P48 RH col line below eq. (3.48): close up space before and after "$\phi_{0_{cr}}$"

P48 RH col line above table 3.1: L'Hospital's $\longrightarrow$ "L'Hôpital's (wrong spelling in MS)

P48 RH col eq. (3.49): $R_S R$ $\longrightarrow$ $R_S/R,$

sec$A$,or $\longrightarrow$ sec$A$, or i.e., insert space after comma

P50 RH col line 3: angles, $\phi_{0_{cr}}$ and $\longrightarrow$ angles, $\phi_{0_{cr}}$ and

i.e., insert a space after comma and one before "and"

P50 RH col line 10 [(b)]: If, $\phi_0 = \phi_{0_{cr}}$ … $\longrightarrow$ If $\phi_0 = \phi_{0_{cr}}$ …

i.e., replace comma after "If" with a space

P50 RH col line 13 [(c)]: ν 1 $\longrightarrow$ ν $\approx$ 1 i.e., insert "$\approx$"

Chapter 4 PP52-87

P55 LH col lines 2,3 below Table 4.1: these are a single sentence, so should be joined without space or indent.

i.e., to disappear in U.S. Army Ordnance …."

P55 LH col 1st paragraph of § 4.3 line 3: , , $\longrightarrow$, C_D, i.e., insert "C_D" between the , ,

P55 LH col line 6 from bottom: number,$\rho VlS/\mu$, number, $\rho Vl/\mu$, i.e., Equation wrong and space after first comma

P55 LH col line 5 from bottom: whereμ $\longrightarrow$ where μ i.e., insert space after "where"

P55 RH col line 2 below Table 4.1: coefficient,C_{D_0} $\longrightarrow$ coefficient, C_{D_0} i.e., space after 1st comma

P61 Figure is Figure 4.12 i.e., change 4.11 to 4.12

P70 RH col line 3 below Fig 4.21: nose,$R=R_T$, $\longrightarrow$ nose, $R=R_T$, i.e, insert space after comma

P70 RH col line 4 below Fig 4.21: parameterR_T/R $\longrightarrow$ parameter R_T/R i.e., put space before R_T/R

P70 RH col line 6 below Fig 4.21: space between "thus" and "$R_T/R=0$"

H P70 RH col line 8 below Fig. 4.21: comma and space between "therefore" and "$0<R_T/R<1$"

and between "1" and "for",

i.e., it should read: therefore, $0<R_T/R<1$ for

P70 RH col line 14 below Fig. 4.21: put comma and space after "i.e." to read: (i.e., $R_T=0.5$)

P78 LH col line 6: delete space between "value" and comma

P78 LH col 3rd paragraph line 4, in parenthesis:

($\log_{10} Re$ 5.0) $\longrightarrow$ ($\log_{10} Re \approx 5.0$) i.e., insert "$\approx$" between Re and 5.0

However , $\longrightarrow$ However, i.e., delete space before comma

P78 LH col 1st par. of § 4.9 line 5: space between comma and "C_{D_0}"

P78 line 6: space between comma and "$C_{D_{\delta 2}}$"

P78 RH col line 4: space between "and" and "$C_{D_{\delta 2}}$"

P79 bottom of page: Figure is Figure 4.39 i.e., change 4.38 to 4.39

P80	LH col line 5:	space between "of" and " $C_{D_{\delta 2}}$ "	
P80	LH col line 15:	space between "to" and " C_{D_0} "	
P80	LH col line 17:	space between "of" and " C_{D_0} "	
P80	LH col line 20:	space between "for" and " C_{D_0} "	
P80	LH col line 4 above § 4.10:	space between "of" and " C_{D_0} "	
P81	bottom of page:	Figure is Figure 4.42	i.e., change 4.41 to 4.42
P83	bottom of page:	Figure is Figure 4.45	i.e., change 4.44 to 4.45
P86	Ref. 1. line 2:	1893 $\longrightarrow$ 1900 (wrong in MS)	

Chapter 5   PP88-97

P89	RH col line 8:	for in … $\longrightarrow$ for $\sum \vec{F}$ in …	i.e., insert $\sum \vec{F}$ after "for"
P89	RH col line 4 from bottom:	vector, $\vec{g}$ $\longrightarrow$ vector, $\vec{g}$	i.e., insert space before " $\vec{g}$ "

P90	LH col line 1 above eq. (5.11):	product of with… $\longrightarrow$ product of $\vec{V}$ with…
		i.e., insert " $\vec{V}$ " between "of" and "with"
P90	RH col line 3 of § 5.3:	insert " V_y " before and " V_z " after "and", and insert " V_x " after "component" and before the comma.
	Line 3 should read:	velocity components V_y and V_z are much smaller than the component V_x for
P90	RH col line 4 of § 5.3:	crosswind, may $\longrightarrow$ crosswind, V_z may i.e., insert " V_z " before "may"
P90	RH col eq. (5.14):	delete the "1" after the "+ •••" and which is in front of the "]"
P90	RH col 3rd line above eq. (5.16):	insert space between "approximation" and " $V \approx V_x$ "
		i.e., to read: "approximation $V \approx V_x$ "

P91	LH col eq. (5.21):	$V_x^{'} = \hat{C}_D^* V_x \, x \longrightarrow V_x^{'} = \hat{C}_D^* V_x$ i.e., delete "x" after " V_x "
P91	LH col eq. (5.24):	middle integral sign $\int$ should be larger
	eq. (5.25):	left hand integral sign $\int$ should be larger
	eq. (5.26), in denominator before large [:	$V_{x_0^2} \longrightarrow V_{x_0}^2$ (wrong in MS), both integral signs larger
	eq. (5.27):	left hand integral sign $\int$ should be larger
P91	LH col 4th line from bottom:	$S_1, S_2, \text{and } S_3 \longrightarrow s_1, s_2, \text{and } s_3$ i.e., change S to lc
P91	RH col eq. (5.29):	left hand integral sign $\int$ should be larger
P91	RH col eq. (5.31):	left hand integral sign $\int$ should be larger
P91	RH col eq. (5.32):	left hand integral sign $\int$ should be larger
P92	LH col eq. (5.33):	left hand integral sign $\int$ should be larger
P92	LH col eq. (5.33):	the upper limit of the 2nd (RH) integral must be t, not an arbitrary dummy variable s_2

| P92 | LH col eq. (5.39), 2nd term in [ ]: | $-\dfrac{1}{V_{x_0} k_1 t} \longrightarrow +\dfrac{1}{V_{x_0} k_1 t}$ | i.e., $-$ to $+$ |

| P92 | LH col eq. (5.39): | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L |

LH col eq. (5.39), in the denominator: $\left(1 + V_{x_0} k_1 t\right)^2 \longrightarrow \left(V_{x_0} k_1 t\right)^2$

| P92 | RH col eq. (5.43): | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L |

| P92 | RH col eq. (5.44): | $\left(1 - \dfrac{V_{x_0}}{V_x}\right) \longrightarrow \left(1 + \dfrac{V_{x_0}}{V_x}\right)$ | (wrong in MS) |

P92	RH col eq. (5.45), last term:	$1n \longrightarrow ln$	i.e., the numeral 1 should be a lc italic L
P92	RH col line 5 of Example 5.1:	0.452." $\longrightarrow$ 0.452,"	i.e., replace the period after 0.452 by a comma
P92	RH col eq. (5.47):	$1n \longrightarrow ln$	i.e., the numeral 1 should be a lc italic L

P93	LH col line 3 of Example 5.2:	and$Y_0 \longrightarrow$ and Y_0	i.e., insert space after "and"
P93	LH col line 8 of Example 5.2:	and$V_x \longrightarrow$ and V_x	i.e., insert space after "and"
P93	RH col line under eq. (5.56):	no indent before "where"	
P93	RH col eq. (5.57):	$1n \longrightarrow ln$	i.e., the numeral 1 should be a lc italic L
P93	RH col eq. (5.58):	$1n \longrightarrow ln$	i.e., the numeral 1 should be a lc italic L

H $ln\left(1 - V_{x_0}/V_x\right) \longrightarrow ln\left(\dfrac{V_x}{V_{x_0}}\right)$ i.e., the quantity in () is different

| P93 | RH col eq. (5.59): | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L (2 places) |

H P94 LH col eq. (5.63) $k_3 \big/ \sqrt{M} \longrightarrow k_3 \big/ \sqrt{V_x}$

| P94 | RH col eq. (5.67): | $V_x' = \longrightarrow V_x =$ | i.e., delete the "prime" |

| P95 | RH col Table 5.4: | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L (2 places) |

| P96 | Table 5.5: | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L (1 place) |
| P96 | Table 5.6: | $1n \longrightarrow ln$ | i.e., the numeral 1 should be a lc italic L (3 places) |

H P97 Tables 5.7, 5.8, 5.9 last col: $K_3 \big/ M \longrightarrow K_3 \big/ \sqrt{M}$ i.e., replace M by $\sqrt{M}$

Chapter 6   PP98-156

| P98 | LH col 2nd paragraph, line 2: | (Ref. 2b) $\longrightarrow$ (Ref. 2a, Ref. 2b) | (wrong in MS) |
| P98 | RH col eq. (6.1), 2nd eq: | $V_x \approx V \cos\phi \longrightarrow V_x \approx V \cos\phi_0$ | i.e., replace ϕ by ϕ_0 |

M P98 RH col eq. (5.8):   insert $=$ after $\dfrac{dV_x}{dt}$ i.e., $\dot{V}_x = \dfrac{dV_x}{dt} = -\hat{C}_D^* V V_x$

M P98 RH col eq. (5.9):   insert $=$ after $\dfrac{dV_y}{dt}$ i.e., $\dot{V}_y = \dfrac{dV_y}{dt} = -\hat{C}_D^* V V_y - g$

| P98 | RH col eq. (6.3): | $v \longrightarrow V$ | i.e., $\dfrac{dv}{dt} \longrightarrow \dfrac{dV}{dt}$ |

| P99 | LH col eq. (6.10): | $x \longrightarrow X$ | i.e., $\dfrac{dx}{dV} \longrightarrow \dfrac{dX}{dV}$ |

M P99 LH col eq. (6.13):   insert $=$ after V' i.e., $V' = \dfrac{dV}{dX} = \dfrac{\dot{V}}{V} \sec\Phi_0 = -\hat{C}_D^* V \sec\Phi_0$

P100　LH col line above eq. (6.34):　　insert "(also see Ref. 5a,b,c)" between "author" and comma, i.e.,
　　　　　　　　　　　　　　　　　　　　"to the author (also see Ref. 5a,b,c), gives …."

P100　LH col last line:　　whereϕ_0 $\longrightarrow$ where ϕ_0 i.e., add space after "where"

H P100 RH col line 1:　　insert "$\approx$" between "and β" and "1",　　　　　i.e.,　" and $\beta \approx 1$ "

H P100 RH col and **everywhere else in the book:**　**NO periods after abbreviated unit names (e.g., "lb" not "lb.",**
　　　　　　　　　　　　　　　　　　　"in" not "in.", etc.)

P100　RH col {lines 12 – 14} below eq. (6.41):　　in.2/lb.　$\longrightarrow$　in^2/lb
　　　　line 15　　below eq. (6.41):　　in.4/lb.2　$\longrightarrow$　in^4/lb^2

P101　LH col 6th line from bottom (in ρ_0):　　lb./ft.3 $\longrightarrow$　lb/ft^3　　i.e., the 3 is a superscript

P103　LH col line 14 (in the eq. for C_8)　　$(.302)^2$ $\longrightarrow$ $(.308)^2$
P103　LH col lines 7-9 of Example 6.2:　　in.2/lb.　$\longrightarrow$　in^2/lb
　　　　line 10　of Example 6.2:　　in.4/lb.2　$\longrightarrow$　in^4/lb^2

P104　　　　　　　　　　　　　　Figure is Figure 6.2　　　i.e., change 6.1 to 6.2

P106　RH col line 7 under § 6.6:　　insert "(page 113)" between "chapter" and "lists"

Facing P113:　　　　　　　　mark page number 112 at the bottom of Table 6.1

P113　Table 6.11. Some of the headings are misplaced to the right. The headings should read:

Reference Diameter (Inches)	Projectile	Nominal Weight (Grains)	Velocity Interval (fps)	Form Factor i	Ballistic Coefficient C (lb/in^2)	Drag Function

PP114-156　　　In the Tables of the Primary Siacci Functions, the order of the entries is velocity V, space function S(V), altitude function A(V), trajectory inclination function I(V), and time of flight function T(V). For the G_1 Drag Function (PP 119-124), G_6 Drag Function (PP 135-140), G_7 Drag Function (PP 140-145), and G_{SP} Drag Function (PP 151-156), the I(V) headings are mislabeled as T(V), leaving two columns labeled T(V).

P156　LH col Ref. 1a　1st line:　　1_　$\longrightarrow$　1°　　　　i.e., a " ° " instead of "_"
P156　LH col Ref. 3:　　"1953" in line 3 should be moved up behind "Press," in line 2
　　　　　　　　　　　　　　i.e.,　"Denver Press, 1953 "

Chapter 7　　PP157-164

Everywhere in this Chapter:　　replace all uc subscripts X, Y, Z by lc subscripts x, y, z, respectively;
　　　　　　　　　　　　　　most or all are listed below. These are inconsistent in the MS

P157　LH col lines 3-5 2nd par. of § 7.1: uc subscripts X, Y, Z　$\longrightarrow$　lc subscripts x, y, z, respectively

P157　LH col line 2 under § 7.2:　　insert space between comma and "V"　　i.e., "velocity $\vec{V}$, in"

P158　LH col line 1:　　change italic "*and*" to roman "and"
P158　LH col eq. (7.3):　　V_Z $\longrightarrow$ V_z　　　　i.e., subscript z should be lc
P158　LH col at eq. (7.11):　　no indent before "where"
P158　RH col eq. (7.14), middle inequality:　　V_X $\longrightarrow$ V_x　　i.e., subscript x should be lc

P159　LH col line under eq. (7.23):　　no indent before "where"
P159　LH col eq. (7.25):　　remove $\dfrac{V_x}{V_{x_0}}$ from right hand side of equation just to the right of the =

P159   LH col line below eq. (7.26):   space between comma and "$|V_Z|$"   i.e., "for all X, $|V_z|$ is"
with uc subscript Z replaced by lc subscript z
P159   LH col lines 2, 3 below eq. (7.26):   uc subscript Z replaced by lc subscript z in two places: W_z, V_z, respectively
P159   LH col line 1above eq. (7.27):   uc subscript Z replaced by lc subscript z in W_z
P159   RH col 2nd line above Table 7.1:   uc subscript Z replaced by lc subscript z in W_z

P160   RH col line above eq. (7.30): f_{WZi} $\longrightarrow$ f_{Wzi} i.e., subscript z should be lc
P160   RH col 1st line of eq. (7.30): V_{Xi} $\longrightarrow$ V_{xi} i.e., subscript x should be lc
P160   RH col 2nd line of eq. (7.30): $V_{X(i+1)}$ $\longrightarrow$ $V_{x(i+1)}$ (see eq. (7.29))
P160   RH col line 4 below eq. (7.30):   calber $\longrightarrow$ caliber   (wrong in MS)
P160   RH col line 4 above Table 7.2: V_{Xi} $\longrightarrow$ V_{xi} i.e., subscript x should be lc
$t(_{Xi})$ $\longrightarrow$ $t(X_i)$ X should not be a subscript
P160   RH col Table 7.2 3rd heading: V_{Xi} $\longrightarrow$ V_{xi} i.e., subscript x should be lc
P160   RH col Table 7.2 6th heading: f_{WZi} $\longrightarrow$ f_{Wzi} i.e., subscript z should be lc

P162   LH col lines 2,3 below eq. (7.35):   uc subscript X replaced by lc subscript x in two places: W_x, V_x, respectively

P162   LH col eq. (7.38):   the 2 instances of $-\int_0^X \hat{C}_D^* \, ds_1$ should be the same (larger) size

P162   RH col eq. (7.40):   the 3 instances of $-\int_0^X \hat{C}_D^* \, ds_1$, should be the same (larger) size

H   RH col eq. (7.40):   there should be a ds_2 just ahead of the last ")"   (missing from MS)
P162   RH col eq. (7.43): $V_x\,[V_x]$ V_x^2 $\longrightarrow$ $V_x\,[V_x] \approx V_x^2$ "$\approx$" missing between "$V_x\,[V_x]$" and "V_x^2"
P162   RH col eq. (7.45): $[V_y]\,V_y$ $\longrightarrow$ $[V_y] \approx V_y$ "$\approx$" missing between "$[V_y]$" and "V_y"

P163   LH col line below eq. (7.53): V_Y $\longrightarrow$ V_y i.e., subscript y should be lc

P164   Tables 7.4 and 7.5 headings: V_X $\longrightarrow$ V_x i.e., subscripts x and y are lower case
V_Y $\longrightarrow$ V_y for consistency with Table 7.3

Chapter 8   PP165-186

P166   LH col line under eq. (8.9):   no indent before "where"

P167   RH col eq. (8.24):   delete the "-78"   i.e., eq. (8.24) should read

$$f_{\rho(R_H)} = 1 - .00378\,R_H\left(\frac{P_{WV}}{29.92}\right)$$ (8.24)

H P168 LH col 2 line 2 below Table 8.1:   vapor pressure at the local $\longrightarrow$ vapor pressure at saturation at the local
P168   LH col eq. (8.26):   delete the "-78"   i.e., eq. (8.26) should read

$$f_{a_0(R_H)} = 1 + .0014\,R_H\left(\frac{P_{WV}}{29.92}\right)$$ (8.26)

H P168 2nd col of Table 8.2:   Water Vapor Pressure $\longrightarrow$ Water Vapor Pressure At Saturation
H   (In., Hg) $\longrightarrow$ (In, Hg)

P176   LH col line 13 below Table 8.4:   above: $\longrightarrow$ above.   (MS not consistent with layout of book)
P176   RH col line 4 below Table 8.4: $\beta_,$ $\longrightarrow$ β i.e., delete comma after β

P178   LH col line 1:   at the beginning of the line, delete space between " $\beta = \sqrt{\sec\phi_0}$ " and the comma
P178   RH col eq. (8.29): $-V_x$ $\longrightarrow$ V_x
H P178 RH col line 5 from bottom: V_X and V_Z $\longrightarrow$ V_x and V_z i.e., subscripts x and z are lc

P179	LH col eq. (8.33):	$\dot{V}_x \longrightarrow V_x$	

P179   RH col eq. (8.40): $\sqrt{Y_s^3\ g} \longrightarrow \sqrt{Y_s^3/g}$ i.e., insert /

P179   LH col eq. (8.45):   lc subscripts x to uc subscripts X and lc "oh" to "zero"   i.e.,

$$V_x = V_{xo} \longrightarrow V_X = V_{X0}$$

P180   LH col eq. (8.53):   lc subscripts x to uc subscripts X and lc "oh" to "zero"   i.e.,

$$V_{xo} \longrightarrow V_{X0}$$

P180   LH col line below eq. (8.53):   insert "≥" between "cos L" and "0"   i.e., $\cos L \geq 0$

P180   RH col Table 8.8, headings of col 3 and col 4:   VXO $\longrightarrow$ V_{X0}

P181   RH col line 5 above Figure 8.16: $CD \longrightarrow C_D$

P182   Table 8.11, col 4:   insert "Δ" before "−Range"   i.e., Δ−Range
P182   Table 8.11, col 5:   insert "Δ" before "−Deflection"   i.e., Δ−Deflection

P183   LH col line 3:   insert "Δ" in front of " 's "   i.e., Δ's
P183   LH col line 3:   delete space between "dif" and "ferences"   i.e., differences
P183   LH col paragraph 3 line 2: insert "Δ" before "−Range"   i.e., Δ−Range
P183   LH col paragraph 3 line 2: insert "Δ" before "−Deflection"   i.e., Δ−Deflection

Errors in MCTRAJ Computer Program

P183   line numbers:

10	MCTRAl.BAS	$\longrightarrow$	MCTRAJ.BAS
90	COErilCIENT	$\longrightarrow$	COEFFICIENT
110	LBON 2	$\longrightarrow$	LB/IN 2
130	MlNtElES	$\longrightarrow$	MINUTES
150	lso	$\longrightarrow$	150
180	FIR]NG	$\longrightarrow$	FIRING
190	OmON	$\longrightarrow$	OPTION
340	(LINE 2)		
	(V$^\wedge$−FTIsEc)	$\longrightarrow$	(VZ--FT/SEC)

P184

520	COE "ICIENT	$\longrightarrow$	COEFFICIENT	
530	[RETURN 1	$\longrightarrow$	[RETURN]	
580	VVHICH	$\longrightarrow$	WHICH	
680	M(J'ABS(M (J))	$\longrightarrow$	M(J) = ABS(M(J))	
1040	DlNT=l#	$\longrightarrow$	DINT = 1#	
1100	TK1C	$\longrightarrow$	TK1=	
1130	W1	$\longrightarrow$	VV1	
1200	W1	$\longrightarrow$	VV1	
1290	(LBON 2)	$\longrightarrow$	(LB/IN 2)	
1520	IFN1	$\longrightarrow$	IF Nl	i.e., insert a space
1660	lillS	$\longrightarrow$	THIS	
1720	TRA-TECTORY	$\longrightarrow$	TRAJECTORY	
1760	INITIALT7:F.	$\longrightarrow$	INITIALIZE	

P185

1830	R4--	$\longrightarrow$	R4 =	
1900	22	$\longrightarrow$	(22	
1910	22	$\longrightarrow$	(22	
2070	PR7--	$\longrightarrow$	PR =	
2200	LB1N2	$\longrightarrow$	LB/IN 2	
H	1NCHES	$\longrightarrow$	INCHES	
2220	1NT	$\longrightarrow$	INT	
2400	Q(D	$\longrightarrow$	Q(1);	
	all commas $\longrightarrow$ semi colons			(wrong in MS)
	all lower case L $\longrightarrow$ 1			i.e., numeral one
2510	W1	$\longrightarrow$	VVI	
2550	C4-C3∗C1∗B 1*	$\longrightarrow$	C4=(C3∗C1∗B1*	
2550	))fV3	$\longrightarrow$	))/V3	
2560	Wl	$\longrightarrow$	W1	i.e., lower case L to numeral one
2640	V8--	$\longrightarrow$	V8=	
2680	Tkl+Tk2∗Hl	$\longrightarrow$	Tk1+Tk2∗H1	i.e., lower case L to numeral one
2690	W1	$\longrightarrow$	VV1	
2700	B2fV1	$\longrightarrow$	B2/V1	
2730	))fV6	$\longrightarrow$	))/V6	
2750	GfV6	$\longrightarrow$	G/V6	
2810	fB2	$\longrightarrow$	/B2	
2840	Hl	$\longrightarrow$	H1	i.e., lower case L to numeral one
2850	Dl	$\longrightarrow$	D1	i.e., lower case L to numeral one
2910	--	$\longrightarrow$	=	
2920	--	$\longrightarrow$	=	
2940	--	$\longrightarrow$	=	
2970	--	$\longrightarrow$	=	
3000	--	$\longrightarrow$	=	

P185

3040	3040IFL=	$\longrightarrow$	3040 IF L=	
3080	T(N=	$\longrightarrow$	T(N) =	
3100	W(N=	$\longrightarrow$	W(N) =	
3140	all commas $\longrightarrow$ semicolons			(wrong in MS)
3280	IF P = 2 =	$\longrightarrow$	IF J $\geq$ 2	

P186

3340	(H3−H(O∗(E(J-1)-(J)/	$\longrightarrow$	(H3−H(J))∗(E(J-1)-E(J))/	
3360	WIIH	$\longrightarrow$	WITH	
3590	3590NEXTI	$\longrightarrow$	3590 NEXT I	
3680	LB1N2	$\longrightarrow$	LB/IN2	
3750	(1NCHES)	$\longrightarrow$	(INCHES)	
3810	line 2: (1N)	$\longrightarrow$	(IN)	
3840	all commas to semicolons			(wrong in MS)
3850	NEXTN	$\longrightarrow$	NEXT N	
4040	xl < M(I+l)	$\longrightarrow$	X1 < M(I+1)	
4070	change both (I+l) to (I+1)			i.e., **lower case L to numeral one**

P187   LH col line 9 under § 9.1: "(Ref. 2)" shouldn't be indented but follow after "Kent" on line 8
                                            i.e.,   "Kent (Ref. 2) at …."

P188   RH col line 12:   delete space between " $I_x p \vec{x}$ " and comma

P188   RH col line 4 above eq. (9.3): $I_Y \longrightarrow I_y$ i.e., change cap Y to lc y

P188   RH col 2nd line above eq. (9.3):   the sentence after "mass." is unclear unless an " $\vec{H}$ " is inserted between
              "momentum" and "is"   i.e.,   "The total projectile vector angular momentum $\vec{H}$ is therefore…."
                                          (not in MS, but in the next-to-last draft)

P189   LH col line 2:   " $\dfrac{d\vec{x}}{dt}$ " in line 2 extends into line 3. It should be written " $d\vec{x}/dt$ " to avoid this.

P189   RH col line 15:   d ^{2}/4 $\longrightarrow$ πd^2/4   i.e., insert π, move superscript next to d
P189   RH col 8th line from bottom: $C_{M_{\dot\alpha}} \longrightarrow C_{N_{\dot\alpha}}$ i.e., change M to N to get $\left(C_{N_q} + C_{N_{\dot\alpha}} \right)$

P190   RH col line 2 under eq. (9.15): $v_2 = \longrightarrow v^2 =$ i.e., change subscript to superscript

M P190 RH col 5th eq. below eq. (9.15): $p = \dfrac{I_x}{I_y}\left(\vec{h} \bullet \vec{x}\right) \longrightarrow p = \dfrac{I_y}{I_x}\left(\vec{h} \bullet \vec{x}\right)$ i.e., switch subscripts x, y

P191   LH col   Table 9.1 (heading of RH col):   [E$_2$–X$_2$] $\longrightarrow$ [E$_2$–X$_2$] (Inches)   i.e. units missing

P192   LH col 1st paragraph line 1:   vector, $\vec{x}$, $\longrightarrow$ vector, $\vec{x}$,   i.e., change spacings by commas
P192   LH col 1st paragraph line 2: $\vec{y}\,and\,\vec{z} \longrightarrow \vec{y}$ and $\vec{z}$ i.e., put space before and after "*and*"
P192   LH col 1st paragraph line 6:   ($\vec{z} \times \vec{x}$) . $\longrightarrow$ ($\vec{z} \times \vec{x}$).   i.e., delete space before period
P192   LH col eq. (9.23), right side of equation, center expression: $\sin(\theta_0 + \alpha_0) \longrightarrow \sin(\phi_0 + \alpha_0)$

C P192 LH col rhs of eq. (9.24), center expression: replace $\cos(\phi_0 + \alpha_0)$ by $\cos^2(\phi_0 + \alpha_0)$ (wrong in MS)

     i.e., $\cos^2(\theta_0 + \beta_0)\cos(\phi_0 + \alpha_0) + \sin^2(\theta_0 + \beta_0) \longrightarrow \cos^2(\theta_0 + \beta_0)\cos^2(\phi_0 + \alpha_0) + \sin^2(\theta_0 + \beta_0)$
P192   LH col eq. (9.26):   there should be a box around equation, as in MS
C P192 LH col line above eq. (9.27):   replace that line by the following clarifying material:
     The vector $d\vec{\mathbf{x}}_0/dt$ is given by:
$$d\vec{\mathbf{x}}_0/dt = \vec{\omega}_0 \times \vec{\mathbf{x}}_0 = (\vec{\omega}_0 \bullet \vec{\mathbf{z}}_0)\vec{\mathbf{y}}_0 - (\vec{\omega}_0 \bullet \vec{\mathbf{y}}_0)\vec{\mathbf{z}}_0 \tag{9.27a}$$
where the components of the column vector $\vec{\omega}_0$ are $\left(\omega_{1_0}, \omega_{2_0}, \omega_{3_0}\right)$ and are in the earth-fixed system. If ω_{z_0} and ω_{y_0} are
defined by
$$\omega_{z_0} = \vec{\omega}_0 \bullet \vec{\mathbf{z}}_0 \qquad \text{and} \qquad \omega_{y_0} = \vec{\omega}_0 \bullet \vec{\mathbf{y}}_0 \tag{9.27b}$$
then $d\vec{\mathbf{x}}_0/dt$ is given by:
P192   RH col eq. (9.31), right hand side, center expression: $+ x_{1_0}\dot{x}_{3_0} \longrightarrow - x_{1_0}\dot{x}_{3_0}$ i.e., + to −

P192   RH col eq. (9.31), right hand side, bottom expression: $+ x_{2_0}\dot{x}_{1_0} \longrightarrow - x_{2_0}\dot{x}_{1_0}$ i.e., + to −

P192   RH col line 3 above eq. (9.32):   " $\dfrac{d\vec{x}}{dt}$ " extends into the line below. Better written as " $d\vec{x}/dt$ "

P193   RH col line 2:   f   (x,y) $\longrightarrow$ f(x,y)   i.e., delete space between "f" and "("

P194   LH col line 3 below eq. (9.37):   value, $\vec{x}_0$, $\longrightarrow$ value, $\vec{x}_0$,   i.e., change spacings by commas

P194   LH col line 3 above Fig 9.2:   product, $\vec{x} \bullet \vec{x}$ $\longrightarrow$ product, $\vec{x} \bullet \vec{x}$ i.e., insert space after comma

P196   LH col line 2 below Fig 9.5:   yaw rate,, $\longrightarrow$ yaw rate, ω_{y_0},   i.e., insert ω_{y_0} between commas

P196   LH col line 14 below fig 9.5:   angle,α , $\longrightarrow$ angle, α,   i.e., change spacings by commas

P200   LH col line 6 (below Table 9.4):   of C_{M_α} $\longrightarrow$ of C_{M_α} i.e., insert space after "of"

P201   RH col line 8:   attack,α_t , $\longrightarrow$ attack, α_t,   i.e., change spacings by commas

P201   RH col line 10:   whereα $\longrightarrow$ where α (insert space and use smaller font for α)

P201   RH col line 6 above Fig 9.11:   attack,, $\longrightarrow$ attack, α_t,   i.e., insert α_t

P202   LH col line 5:   attack,α_t , $\longrightarrow$ attack, α_t,   i.e., change spacings by commas

H P202 LH col line 4 from bottom: put parens around (α_R) and delete 1 space between it and "component"

This would read much better if parts of lines 5 and 4 from bottom were changed to read:

a significant vertical (α_R) "pitch of repose" component,

P202   RH col line 13:   attack,, $\longrightarrow$ attack, α_t,   i.e., insert α_t between commas

P204   LH col line 17:   attack,, $\longrightarrow$ attack, α_t,   i.e., insert α_t between commas

H P204 LH col 3rd paragraph line 1: α_t , against $\longrightarrow$ α_t, against   i.e., delete space before comma

P204   LH col line 8 from bottom: attack,α_t , $\longrightarrow$ attack, α_t,   i.e., change spacings by commas

P212   RH col line below eq. (9.39):   vector $\vec{x}$ $\longrightarrow$ vector $\vec{x}$ i.e., insert space after "vector"

P212   RH col line 2 below eq. (9.39):   delete spaces before "and" and before "is"

H P213 LH col line 3 below eq. (9.44): $\left(d\vec{\alpha}_R / dt \right)$, $\longrightarrow$ $\left(d\vec{\alpha}_R / dt \right)$,   i.e., delete space before comma

P213   LH col line 3 below eq. (9.44): $\vec{\alpha}_R$. $\longrightarrow$ $\vec{\alpha}_R$.   i.e., delete space before period

H P213 RH col rhs of eq. (9.49): $C_{M\alpha}$ $\longrightarrow$ C_{M_α} i.e., α is a subscript to subscript M

P213   RH col line under eq. (9.49):   no indent before "where"

P214   LH col eq. (9.57): $C_{M\alpha}$ $\longrightarrow$ C_{M_α} i.e., α is a subscript to subscript M

P214   RH col eq. (9.60): $\dfrac{-\rho S d^2 v}{2 I_x} p C_{l_p}$ $\longrightarrow$ $\dfrac{+\rho S d^2 v}{2 I_x} p C_{l_p}$ i.e., change – to +

P214   RH col line 3 above eq. (9.62):   show that and in $\longrightarrow$ show that $h_L \ll 1$ and $h_M \ll 1$ in

P216   LH col line 19 from bottom: $\left| \vec{\alpha}_R \right|$,predicted $\longrightarrow$ $\left| \vec{\alpha}_R \right|$, predicted   i.e., delete space before comma

P216   RH col line 7 under example 9.5:   repose,$\left| \vec{\alpha}_R \right|$ $\longrightarrow$ repose, $\left| \vec{\alpha}_R \right|$ i.e., insert space after comma

P217 headings just under "contour sketch": C_{l_α} $\longrightarrow$ C_{L_α} i.e., uc subscript L

P218   RH col line 8 under notes: C_{l_α} $\longrightarrow$ C_{L_α} i.e., uc subscript L

P218 col 7 under the drawing "Contour Sketch":   last entry (2.5) doesn't line up with others by one space

P220   2nd table under the drawing "Contour Sketch" and to left of "Notes":
last 2 entries of col 3 (.9, .95) belong after the .85 in col 5;
–468 of col 4 belongs under –357 in col 6;
–745 of col 5 belongs under the moved –468 in col 6

P220 The references given for chapter 9 are an exact duplicate of the references for chapter 10 (on P239).   The chapter 9 references are completely missing! The final draft of the Chapter 9 references is appended at the end.

H In Chapters 10 through 14, there are two inconsistent representations of C^* with a subscript $C_{whatever}{}^*$ and $C^*_{whatever}$. The latter should be used everywhere.

Chapter 10   PP221-239

P221   RH col eq. (10.2): $m\dfrac{d\vec{H}}{dt} \longrightarrow \dfrac{d\vec{H}}{dt}$ i.e., no "m"

P221   RH col 2nd line from bottom: $\vec{V}$, $\longrightarrow$ $\vec{V}$,   i.e., close up space before comma

P223   LH col 3rd line above eq. (10.4):   to $\vec{x}$ $\longrightarrow$ to $\vec{x}$ i.e., insert space after "to"
P223   LH col eq. (10.5):   minus sign missing

i.e., $Drag\ Force = \dfrac{1}{2}\rho\, S\, C_D\, V\vec{V} \longrightarrow Drag\ Force = -\dfrac{1}{2}\rho\, S\, C_D\, V\vec{V}$

P223   LH col eq. (10.7): $v^2 \longrightarrow V^2$ i.e.,   uc V
P223   LH col eq. (10.10) 1st line: $C_{Mp\alpha} \longrightarrow C_{M_{p\alpha}}$

                    2nd line: $C_{M_{pa}} \longrightarrow C_{M_{p\alpha}}$ i.e., $a \longrightarrow \alpha$ (alpha)

P223   RH col line 15:   S=d ^{2}/4 $\longrightarrow$ S=πd²/4   i.e., insert π, move superscript next to d

P224   RH col line 1:   comma after $\vec{i}$ i.e., comma after 2nd term of 3

P224   RH col 2nd line above eq. (10.22):   vector with $\vec{i}$ both $\longrightarrow$ vector $\vec{i}$ with both   i.e., switch words

P225   LH col line after eq. (10.31):   no indent of line beginning with "Equation"

P225   LH col eq. (10.32): $\dfrac{V}{D} \longrightarrow \dfrac{V}{d}$ i.e.,   change to lc d

P225   LH col eq. (10.37), 2nd line, 1st term: $I_y\left(\dfrac{d\vec{\omega}}{dt}\bullet\vec{x}\right) \longrightarrow -I_y\left(\dfrac{d\vec{\omega}}{dt}\bullet\vec{x}\right)$ i.e., insert "−"

P225   RH col eq. (10.38), 2nd line, 1st term: $I_x\, p\left(\vec{\omega}\times\vec{x}\right) \longrightarrow +I_x\, p\left(\vec{\omega}\times\vec{x}\right)$ i.e., insert "+"
P225   RH col eq. (10.38), 3rd line, 1st term: insert "+"

i.e., $\dfrac{1}{2}\rho\, S\, d\, C_{M_\alpha}V^2\left(\vec{i}\times\vec{x}\right) \longrightarrow +\dfrac{1}{2}\rho\, S\, d\, C_{M_\alpha}V^2\left(\vec{i}\times\vec{x}\right)$

P225   RH col eq. (10.38), 4th line, 1st term: insert "+" and lower the subscript "q"

i.e., $\dfrac{1}{2}\rho\, S\, d^2\, C_{Mq}V\left(\vec{x}\times\dfrac{d\vec{x}}{dt}\right) \longrightarrow +\dfrac{1}{2}\rho\, S\, d^2\, C_{M_q}V\left(\vec{x}\times\dfrac{d\vec{x}}{dt}\right)$

P225   RH col eq. (10.38), 4th line, 2nd term: $C_{M\delta} \longrightarrow C_{M_{\dot\alpha}}$ i.e. subscript $\dot\alpha$

P225   RH col line below eq. (10.40): $and \longrightarrow$ and   i.e., change ital. "and" to roman "and"

P225   RH col eq. (10.41), 1st line, 1st term: $\left(\vec{x}\dfrac{d^2\vec{x}}{dt^2}\right) \longrightarrow \left(\vec{x}\times\dfrac{d^2\vec{x}}{dt^2}\right)$

P225   RH col eq. (10.41), 2nd line, last term: $p\, c_{M_{p\alpha}} \longrightarrow P\, C_{M_{p\alpha}}$ i.e. uc p and c

P225   RH col eq. (10.41), 3rd line, last term: $C^*_{M_\delta}$ $\longrightarrow$ $C^*_{M_{\dot{\alpha}}}$ i.e. subscript $\dot{\alpha}$

P225   RH col 5th line from bottom, middle equation: $C^*_{M_\alpha}$ $\longrightarrow$ $C^*_{M_{p\alpha}}$ i.e. subscript $p\alpha$

P225   RH col 4th line from bottom: $C^*_{M_\alpha} = \dfrac{\rho S d}{2m} C_{M_\alpha}$ $\longrightarrow$ $C^*_{M_{\dot{\alpha}}} = \dfrac{\rho S d}{2m} C_{M_{\dot{\alpha}}}$ i.e. subscripts $\dot{\alpha}$

i.e., insert dot over both subscripts α

P227   LH col line 9:   ofα $\longrightarrow$ of α i.e., insert space after "of"

P227   RH col line 4, 3rd term of eq. (10.64): $P(\beta' - a\alpha')$ $\longrightarrow$ $P(\beta' - i\alpha')$

P227   RH col eq. (10.64) 1st, 3rd terms after = sign: k_γ^{-2} $\longrightarrow$ k_y^{-2} i.e., change subscript γ to y

P227   RH col eq. (10.65) 1st, 3rd terms after = sign: k_γ^{-2} $\longrightarrow$ k_y^{-2} i.e., change subscript γ to y

P227   RH col eq. (10.66); $+ -iPG$ $\longrightarrow$ $= -iPG$ i.e., change $+$ after ξ to $=$

P227   RH col 2nd eq. (for P) below eq. (10.66): I_γ $\longrightarrow$ I_y i.e., change subscript γ to y

P227   RH col 3rd eq. (for M) below eq. (10.66): k_γ^{-2} $\longrightarrow$ k_y^{-2} i.e., change subscript γ to y

P228   LH col last line: $V_0$is $\longrightarrow$ V_0 is   i.e., insert space before "is"

P229   LH col eq. (10.79):   should be a box around the equation, as in the MS

P230   LH col line 14: $\alpha + i\beta$, $\longrightarrow$ $\alpha + i\beta$,   i.e., delete spaces before comma

P230   LH col eq. (10.85):   in denominator p $\longrightarrow$ ρ (lc Greek rho)

P231   LH col table 10.1:   The last 2 lines should be separated from the third from last by a horizontal line as in the MS

P231   LH col eq. (10.90):   should be a box around the equation, as in the MS

P231   LH col eq. (10.91):   should be a box around the equation, as in the MS

P232   LH col eq. (10.92):   The minus sign in front of the right hand term is so close to the fraction bar that it is hard to see.

P232   RH col last 3 lines of eq. (10.94):   These lines should start at the same indent as the previous ϕ_S line

P232   RH col line below eq. (10.97): $|PT| << |M|$, $\longrightarrow$ $|PT| << |M|$,   i.e., delete spaces before comma

P233   LH col 2nd paragraph of § 10.9 1st line: $\lambda_F$and $\longrightarrow$ λ_F and   i.e., insert space before "and"

   2nd line, λ_S , $\longrightarrow$ λ_S,   i.e., delete spaces before comma

P233   LH col line 5 above eq. (10.106): $\left(C_{M_q} + C_{M_{\dot{\alpha}}} \right)$, $\longrightarrow$ $\left(C_{M_q} + C_{M_{\dot{\alpha}}} \right)$,   i.e., delete space before comma

P233   LH col eq. (10.107):   This equation should be in a box, as in the MS.

P234   RH col eq. (10.115), 2nd term: $e^{i\phi_s}$ $\longrightarrow$ $e^{i\phi_S}$ i.e., uc S

H $i\phi'_s$ $\longrightarrow$ $i\phi'_S$ i.e., uc S

P234   RH col line below eq. (10.115):   S=0 $\longrightarrow$ s=0   i.e., lc s

P235   RH col line 17:   insert space after semicolon

P235   RH col line 18:   insert space after semicolon

P235   RH col line 19:   insert space before "radians/"   in two places

P235   RH col line 20:   percaliber $\longrightarrow$ per caliber   in two places

P237   LH col line under eq. (10.127): θ , $\longrightarrow$ θ,   i.e., delete space before comma

P237   LH col line 9: $\vec{k} \bullet \vec{J}$ $\longrightarrow$ $\vec{k}' \bullet \vec{J}$ i.e., add the prime to $\vec{k}$

B P237   RH col eq. (10.128) right hand side: $iAe^{i\phi}$ $\longrightarrow$ $Ae^{i\phi}$ i.e., delete the factor i (wrong in MS)

P237   RH col eq. for A below eq. (10.128):   square brackets are missing,   i.e., it should read

$$A = \frac{\rho S d}{2m}\left[\, k_y^{-2}\left(C_{m_0} + i\,C_{n_0}\right) + \left(\phi' - 1\right)\left(C_{Y_0} + i\,C_{Z_0}\right)\right]$$

P237   RH col line 12, 2nd equation: $\phi = \int_0^S \phi'\,ds_1 \quad\longrightarrow\quad \phi = \int_0^s \phi'\,ds_1$ i.e., lc "s" in limit of integral

P237   RH col line 13:   no indent

B P237 RH col eq. (10.131), numerator of RHS: $-iA \quad\longrightarrow\quad -A$ i.e., delete the factor i (wrong in MS)

P238   LH col line 13: $\xi \;,\quad\longrightarrow\quad \xi,$ i.e., delete space before comma

P238   LH col line 14:   amplitude,δ, $\longrightarrow$ amplitude, δ, i.e., add space between comma and δ

P238   LH col 2 lines below eq. (10.32): cant,$\delta_F \longrightarrow$ cant, δ_F i.e., insert space

P238   RH col line 2: $\widetilde{\Psi} - \Phi = \Psi \quad\longrightarrow\quad \widetilde{\Psi} - \Phi = \Psi^{*}$ i.e., add asterisk

Chapter 11   PP240-251

H P241 LH col lines 3,4:   S=d^2/4 $\longrightarrow$ S=πd^2/4   i.e., insert Greek π and move ^{2} closer to d

P241   LH col 2 lines below eq. (11.3): $\vec{i}\bullet\vec{x} = \gamma \;,\quad\longrightarrow\quad \vec{i}\bullet\vec{x} = \gamma,$ i.e., delete space before comma

H P241 LH col 3 lines below eq. (11.5): ϕ and$\theta \;,\quad\longrightarrow\quad \phi$ and $\theta,$ i.e., change spacings

P242   LH col line under eq. (11.21):   definition into $\longrightarrow$ definition $\left(V'/V\right) = -C_D^{*}$ into

P242   LH col line under eq. (11.26): $i = \sqrt{-1}\;,\quad\longrightarrow\quad i = \sqrt{-1},$ i.e., delete space before comma

P242   LH col 2nd line under (11.26): $\xi = \alpha + i\beta \;,\quad\longrightarrow\quad \xi = \alpha + i\beta,$ i.e., delete space before comma

P242   RH col, K_{s0} term of eq. (11.30):   all s are cap S except the last one after the ")"   3 instances

$$K_{s_0} e^{i\phi_{s_0}} e^{(\lambda_s + i\phi'_s)s} \quad\longrightarrow\quad K_{S_0} e^{i\phi_{S_0}} e^{(\lambda_S + i\phi'_S)s}$$

P243   RH col in 1st term of 2nd line of eq. (11.38): $-\dfrac{1}{\phi'^2_s} \quad\longrightarrow\quad -\dfrac{1}{\phi'^2_S}$ i.e., uc subscript S

P243   RH col line below eq. (11.38): coefficient,$C_{L_\alpha}^{\;*}$, $\longrightarrow$ coefficient, $C_{L_\alpha}^{\;*}$,   i.e., add space before C

P244   RH col eq. (11.45): $\phi'_F - \phi'_S \quad\longrightarrow\quad \phi'_F\,\phi'_S$ i.e., a product, as in MS

P244   RH col eq. (11.46): $P = \phi'_F - \phi'_S \quad\longrightarrow\quad P = \phi'_F + \phi'_S$ i.e., + as in MS

P245   LH col line 9 below Fig. 11.2: yaw,$\xi_0 \;,\quad\longrightarrow\quad$ yaw, $\xi_0,$ i.e., change spacings by commas

P245   LH col last line: that$\xi_0 \longrightarrow$ that ξ_0 i.e., insert space after "that"

P246   RH col last term of eq. (11.49): $K_{s_0} \quad\longrightarrow\quad K_{S_0}$ i.e., cap S

P246   RH col eq. (11.49):   This equation should be in a box, as in the MS.

P248   LH col line 4 below Fig 11.4: $(\lambda_S \quad\longrightarrow\quad (\,\lambda_S$ unclear unless insert space between "(" and "λ"

P248   RH col line 10 from bottom: determine $C_{L_\alpha} \longrightarrow$ determine $\;C_{L_\alpha}$ i.e., insert space before C_{L_α}

P249   LH col line 9 from bottom: definition,$M \longrightarrow$ definition, M i.e., insert space after comma

P249   LH col eq. (11.57):   This equation should be in a box, as in the MS.

P249   RH col line 2 above eq. (11.58): set$\phi' \longrightarrow$ set ϕ' i.e., insert space after "set"

P250   RH col line 2 above Fig 11.7: coefficient, C_{M_α} $\longrightarrow$ coefficient, C_{M_α} i.e., insert space after comma

Chapter 12   PP252-272

P254   RH col 2nd line before Fig 12.3:   move the two lines "(radi" and "ans/sec)" to make a single 2nd line, i.e., "(radians/sec)"

P255   LH col 3rd line below eq. (12.9):   (2 /n) $\longrightarrow$ (2π/n)   i.e., insert π
P255   RH col line 5/bottom: y $\longrightarrow$ $\vec{y}$ i.e., add → on top of y

P256   Fig 12.4:   The symbol $\in$, to left of the center-of-gravity symbol, has been replaced everywhere else in the book by $\hat{\varepsilon}$. The larger right-hand ε should be $\hat{\varepsilon}$

P257   RH col eq. (12.20), 2nd term after = sign: $\vec{r}\,\dfrac{d\vec{x}}{dt}$ $\longrightarrow$ $\vec{r}\bullet\dfrac{d\vec{x}}{dt}$ i.e., insert dot

P257   RH col line below eq. (12.21):   better with $d\vec{x}/dt$ instead of $\dfrac{d\vec{x}}{dt}$

P257   RH col line below eq. (12.22):   better with $m_E\,d\vec{x}/dt$ instead of $m_E\dfrac{d\vec{x}}{dt}$

P257   RH col 2 lines above eq. (12.26): $l_E\,\gamma\,\vec{i}$, $\longrightarrow$ $l_E\,\gamma\,\vec{i}$,   i.e., delete space before comma

P258   LH col 2 lines above eq. (12.36):   s , $\longrightarrow$ s,   i.e., delete space before comma
P258   RH col line 4 above eq. (12.45):   ofα $\longrightarrow$ of α   i.e., insert space before α
P258   yaw,γ $\longrightarrow$ yaw, γ   i.e., insert space before γ
P258   RH col line 3 above eq. (12.45)   ofα $\longrightarrow$ of α   i.e., insert space before α
P258   RH col line 4 above eq. (12.48): $e^{i\varphi}$.Substituting $\longrightarrow$ $e^{i\varphi}$. Substituting   i.e., insert 2 spaces

P260   RH col line 4 above eq. (12.71): $m\,\varepsilon$ $\longrightarrow$ $m\,\hat{\varepsilon}$ i.e., insert ^ over the ε

P260   RH col eq. (12.71): ε $\longrightarrow$ $\hat{\varepsilon}$ i.e., insert ^ over the ε

P261   RH col line above Fig 12.6:   *0.94* (in italics) should be 0.94 (in roman)

P262   RH col line 7 from top: $(K_T$ 0.3 degree) $\longrightarrow$ $(K_T \approx 0.3$ degree)   i.e., insert "≈"as in MS

P264   LH line 8 from top: δ_{MAX} , $\longrightarrow$ δ_{MAX},   i.e., delete space before comma
P264   LH col eq. (12.103): $P+\sqrt{P^2-4M}$ $\longrightarrow$ $P-\sqrt{P^2-4M}$
P264   LH col line 2 from bottom: ε , $\longrightarrow$ ε,   i.e., delete space before comma
P264   RH col line 3 from top: εwith $\longrightarrow$ ε with   i.e., insert space before "with"

P265   LH col line 2 above eq. (12.80):   sine ε , $\longrightarrow$ sine ε,   i.e., delete spaces after sin ε
P265   LH col line 5 from bottom: point,$\hat{\varepsilon}$ $\longrightarrow$ point, $\hat{\varepsilon}$ i.e., insert space before $\hat{\varepsilon}$
P265   LH col line 4 from bottom: muzzle,ϕ_0 $\longrightarrow$ muzzle, ϕ_0 i.e., insert space before ϕ_0
P265   RH col line 2 after eq. (12.82):   twist) $\longrightarrow$ twist).   i.e., add period

P266   LH col line 13 from bottom: thenϕ_0 $\longrightarrow$ then ϕ_0 i.e., insert space after "then"
P266   LH col line 9 from bottom (eq. for T_L):   delete minus sign to the right of both equal signs
P266   RH col eq. (12.85):   This equation should be in a box, as in the MS.

P267   LH col eq. (12.86) 2nd equality: $\xi_0 = ip\varepsilon$ $\longrightarrow$ $\dot{\xi}_0 = ip\varepsilon$ i.e., change ξ_0 to $\dot{\xi}_0$

P267 LH col line below eq. (12.92):   move the eq $\varepsilon=\ldots$ to the left

P267 RH col line 16 below eq. (12.92): ε , $\longrightarrow$ ε,   i.e., delete space after comma

P267 RH col line 3 from bottom: $,\xi_0'$ $\longrightarrow$, ξ_0' i.e., insert space before ξ_0'

P267 RH col line 2 from bottom: yaw, ξ_0 , $\longrightarrow$ yaw, ξ_0,   i.e., insert space before ξ_0

P268 LH col line 3 from top: yaw, ξ_0, $\longrightarrow$ yaw, ξ_0,   i.e., insert space before ξ_0

P268 RH col line under eq. (12.95): approximate with throughout $\longrightarrow$ approximate V_{x_0} with V_x throughout

P270 LH col 3rd line below heading §12.10: Stern $\longrightarrow$ Sterne   i.e., add e, as in refs 9,10.

P270 RH col line 3 above eq. (12.100): rate, ξ_0' $\longrightarrow$ rate, ξ_0' i.e., insert space before ξ_0'

P270 RH col line 2 above eq. (12.100): yaw, ξ_0 $\longrightarrow$ yaw, ξ_0 i.e., insert space before ξ_0

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P273 LH col line 16: angle, α , $\longrightarrow$ angle, α,   i.e., change spacings around α

P273 RH col lines 15,16 from bottom in 3 places: $\sin \alpha$, $\longrightarrow$ $\sin \alpha$,   i.e., delete space after α

P275 RH col line 3: coefficient, C_{D_0} , $\longrightarrow$ coefficient, C_{D_0} ,

     i.e., insert space before C_{D_0} , delete space after

P276 LH col last line: $d^2/4)$ $\longrightarrow$ $\pi d^2/4)$ i.e., insert π, close up spaces

P277 RH col line 2: $C_{M_{a(R)}}$, $\longrightarrow$ $C_{M_{a(R)}}$,   i.e., delete space before comma

P279 LH col line 23 from bottom: $C_{M_{a_0}}$, $\longrightarrow$ $C_{M_{a_0}}$,   i.e., delete space before comma

H P279 LH col line 18 from bottom: $,C_{M_{a_2}}$, $\longrightarrow$, $C_{M_{a_2}}$,   i.e., change spacings by commas

P280 RH col eq. (13.19):   This equation should be in a box, as in the MS.

P280 RH col line 2 from bottom: $d^2/4$ $\longrightarrow$ $\pi d^2/4$ i.e., insert π

P281 RH col line 1 first 2 terms of eq. (13.37):

$$2\,\lambda_F - \phi_F' \longrightarrow 2\,\lambda_F \,\phi_F'$$ i.e., delete minus sign to get 1 term

P281 RH col eq. (13.42) 2nd term after = sign:

$$K_F^2 + K_S^2 \longrightarrow K_F^2 - K_S^2$$ i.e., change + to −

P281 RH col line 2 below eq. (13.44): although "definition" is in the MS, it is actually shown as an approximation in eq. (13.42). Therefore "definition" should be replaced by "approximation".

P281 RH col eq. (13.46): $-H_0\,\phi_S'$ $\longrightarrow$ $+H_0\,\phi_S'$ i.e., change − to +

P282 LH col eq. (13.53) in [ ]: $$\dfrac{\phi_F' - \phi_S'}{\phi_F' - \phi_S'} \longrightarrow \dfrac{\phi_F' + \phi_S'}{\phi_F' - \phi_S'}$$ i.e., + in numerator, not −

P287 LH col both lines above eq. (13.58): replace "curve of Figure 13.16 with a seventh-power (or higher) series expansion, stated as equation (13.58):"

     by "with a seventh-power (or higher) series expansion, which yields the Magnus moment coefficient $C_{M_{p\alpha}}$ in even powers as eq. (13.58):"

P287   LH col: replace eq. (13.58) with $C_{M_{p\alpha}} = C_{M_{p\alpha_0}} + C_{M_{p\alpha_2}} \sin^2 \alpha + C_{M_{p\alpha_4}} \sin^4 \alpha + C_{M_{p\alpha_6}} \sin^6 \alpha + \bullet \bullet \bullet$

P287   RH col eq. (13.60) $-H_0 \, \phi'_S \longrightarrow +H_0 \, \phi'_S$ i.e., change – to +

                                    $+P\left(T_0 + T_2 \delta_{eS}^2\right) \longrightarrow -P\left(T_0 + T_2 \delta_{eS}^2\right)$ i.e., change +P to –P

P291   LH col line 3 from bottom: $C_{M_{p\alpha_0}} \;\; , \longrightarrow C_{M_{p\alpha_0}} ,$ i.e., delete space before comma

P291   LH col line 2 from bottom: $C_{M_{p\alpha_2}} \;\; , \longrightarrow C_{M_{p\alpha_2}} ,$ i.e., delete space before comma

P291   RH col line 9 below sketch: $\lambda_F \;\; 0 \longrightarrow \lambda_F \approx 0$ i.e., insert " ≈ "

P293   LH col line 2:   coefficient, C_{L_α} , $\longrightarrow$ coefficient, C_{L_α} ,   i.e., change spacings by commas

P293   RH col: Figure is Figure 13.28   i.e., change 13.26 to 13.28

P293   RH col line 2 below eq. (13.73): $\hat{C}_{M_\alpha} \;\; , \;\; \longrightarrow \;\; \hat{C}_{M_\alpha} ,$ i.e., delete space before comma

P294   LH col last line: $C_{D_0} \;\; , \;\; \longrightarrow \;\; C_{D_0} ,$ i.e., delete space before comma

P295   RH col eq. (13.86): $C_{L_{\alpha_0}} - C_{L_{\alpha_2}} \delta_{esw}^2 \;\; \longrightarrow \;\; C_{L_{\alpha_0}} + C_{L_{\alpha_2}} \delta_{esw}^2$ i.e., change – to +

P297   LH col line 10 from bottom: two- center $\longrightarrow$ two-center   i.e., delete space after hyphen

P297   LH col line 4 from bottom:

           $C_{M_{p\alpha_0}}$ and $C_{M_{p\alpha_2}} \;\; \longrightarrow \;\; C_{M_{p\alpha_0}}$ and $C_{M_{p\alpha_2}}$ i.e., insert spaces before and after "and"

P298   RH col reference 15:   insert blank line above ref. 15.

Chapter 14   PP299-328

P300   RH col line 17:   than __ inch $\longrightarrow$ than 1/2 inch

P302   RH col line 4: $1/2 \, \rho V^2 S.$. $\longrightarrow 1/2 \, \rho V^2 S.$ i.e., delete the second period

P302   RH col line 6: $1/2 \, \rho V^2 Sd$. $\longrightarrow 1/2 \, \rho V^2 Sd.$ i.e., delete space before period

P305   RH col 5th line above eq. (10.77): $C_{l_\delta} \;\; , \;\; \longrightarrow \;\; C_{l_\delta} ,$ i.e., delete space before comma

                                          $C_{l_p} \;\; , \;\; \longrightarrow \;\; C_{l_p} ,$ i.e., delete space before comma

P305   RH col line 2 above eq. (10.77):   and$K_\delta \longrightarrow$ and K_δ i.e., insert space after "and"

P305   RH col eq. (10.77): $\phi = \phi'_0 - \ldots \;\; \longrightarrow \;\; \phi = \phi_0 - \ldots$ i.e., delete the prime

P305   RH col line 4 below eq. (14.lc): $C_{l_p} \;\; , \;\; \longrightarrow \;\; C_{l_p} ,$ i.e., delete space before comma

P305   RH col line 7 below eq. (14.lc): $C_{l_p} \;\; , \;\; \longrightarrow \;\; C_{l_p} ,$ i.e., delete space before comma

P305   RH col eq. (10.94):   There should be a box around the equation, as in MS

P306   LH col eq. (11.29):   There should be a box around the equation, as in MS

P306   RH col line 1: $\tan \phi_0$, $\longrightarrow \tan \phi_0,$ i.e., delete space before comma

P306   RH col line 3: $\tan \theta_0$, $\longrightarrow \tan \theta_0,$ i.e., delete space before comma

P306   RH col line 2 below eq. (14.11):   coefficient,C_{L_α} , $\longrightarrow$ coefficient, C_{L_α} ,

                                   i.e., insert space before and delete space after C_{L_α}

P308   under Table 14.3: Insert "See Notes 1 and 2 on P307 (RH column) for meaning for * and ?? "

P309   LH col line 4 in Table 14.4:   move Coefficient next to Aerodynamic   i.e., Aerodynamic Coefficient
P309   LH col lines 7, 8, 10: $,C$ $\longrightarrow$ $,C$ i.e., add space before all C symbols
        e.g., (line 7) $,C_{M_\alpha}$ $\longrightarrow$ $,\ C_{M_\alpha}$
P309   LH col line 11:   Coefficients C_{l_p} , $\longrightarrow$ Coefficients, C_{l_p} ,   i.e., add comma after "coefficients"
H   and delete space before 2nd comma

P311   LH col line 3:   Asketch $\longrightarrow$ A sketch   i.e., add space after "A"
P311   LH col line 15: $,C_{l_p}$, $\longrightarrow$, C_{l_p} ,

                                                      i.e., add space before and delete space after C_{l_p}

P311   LH col line 16:   of C_{l_p} $\longrightarrow$ of C_{l_p} i.e., add space after "of"

P311   LH col line 18:   general, C_{l_p} $\longrightarrow$ general, C_{l_p} i.e., add space after comma

P311   LH col line 24:   in C_{l_p} $\longrightarrow$ in C_{l_p} i.e., add space after "in"

H P311 RH col line 2: $,C_{M_\alpha}$, $\longrightarrow$, C_{M_α} ,   i.e., change spacings of commas
P311   RH col line 4:   of C_{M_α} $\longrightarrow$ of C_{M_α} i.e., add space after "of"
P311   RH col line 5:   in C_{M_α} $\longrightarrow$ in C_{M_α} i.e., add space after "in"
P311   RH col line 7: $,C_{N_\alpha}$, $\longrightarrow$, C_{N_α} ,

                            i.e., add space before and delete space after C_{N_α}

P311   RH col line 10: $C_{L_\alpha}+C_D$. $\longrightarrow$ $C_{L_\alpha}+C_D$.   i.e., delete space before period

P311   RH col line 13:   of C_{N_α} $\longrightarrow$ of C_{N_α} i.e., add space after "of"

P311   RH col line 21:   –measured $C_{M_{p\alpha}}$ $\longrightarrow$ –measured $C_{M_{p\alpha}}$ ie, add space after " –measured "

P311   RH col line 26: $,C_{N_{p\alpha}}$ $\longrightarrow$, $C_{N_{p\alpha}}$ i.e., add space after comma

P311   RH col line 27:   the $C_{M_{p\alpha}}$ $\longrightarrow$ the $C_{M_{p\alpha}}$ i.e., add space after "the"

P315   LH col line 2 below eq. (14.18):   shift of $_{CG}$ $\longrightarrow$ shift of Δ_{CG} i.e., insert Δ before subscript CG
P315   LH col line 3 below eq. (14.18):   that $_{CG}$ $\longrightarrow$ that Δ_{CG} i.e., insert Δ before subscript CG
P315   RH col eq. (14.21):   There should be a box around the equation, as in MS
P315   RH col line below eq. (14.21):   no indent before "where"
                            the $_{CG}$ $\longrightarrow$ the Δ_{CG} i.e., insert Δ before subscript CG
P315   RH col eq. (14.22):   There should be a box around the equation, as in MS
P315   RH col eq. (14.23):   There should be a box around the equation, as in MS
P315   RH col line 4 below eq. (14.23):   the $_{CG}$ $\longrightarrow$ the Δ_{CG} i.e., insert Δ before subscript CG
P315   RH col line 6 below eq. (14.23):   , $_{CG}$ $\longrightarrow$, Δ_{CG} i.e., insert Δ before subscript CG
P315   RH col line 7 below eq. (14.23):   , $_{CG}$ $\longrightarrow$, Δ_{CG} i.e., insert Δ before subscript CG
P315   RH col line 9 below eq. (14.23):   so $_{CG}$ $\longrightarrow$ so Δ_{CG} i.e., insert Δ before subscript CG

P316   LH col last line: delete "Figure 14.15 Pitch Damping Coefficients vs Mach Number"
H P316 RH col: in Figure 14.15(b) (lower curve)
                replace $\odot \left[C_{M_q}+C_{M_{\dot\alpha}}\right]$ vs Center of Gravity

                with $\odot \left[C_{N_q}+C_{N_{\dot\alpha}}\right]$ vs Mach Number

P316   RH col: insert in Figure 14.15 at the very bottom in smaller font
                "Figure 14.15(b). Pitch Damping Force Coefficient vs. Mach Number"

       Word 2003 file modeb9lc.doc 4/13/2010

P317   Figure 14.17b (lower curve):   "Pitching Moment Coefficient vs. Mach Number" in small font between the label Mach Number and the bottom of the box

P319   RH col last line of Table 14.5: $C_{M_\alpha} \longrightarrow C_{M_{\dot\alpha}}$ i.e., add dot above α

P325   LH col line 13:   Figure 14.28 $\longrightarrow$ Figure 14.28 (page 328)

P327   RH col ref 17 3rd line: This should be moved up after "Report",   i.e.,
        Report $\longrightarrow$ Report No. 1048, 1958
        No. 1048, 1958

There is NO index!!!

Chapter 9 references are appended below.

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