

SFTE Reference Handbook Errata from 2007 (2nd) to 2013 (3rd) Edition

04-16-13

Note: Errata is only for technical data changes and does not include cosmetic changes.
 Pagination (noted in table) may be different for the 2013 Edition due to going from 5.5" by 8.5" to 8.5" by 11" page format and due to added or changed material.

Page Numbers		Description of Change
2007	2013	
01-2-11	01-2-10	unit conversions rearranged in alphabetical order
-	01-1&47	added Unit Conversion Website Link http://www.digitaldutch.com/atmoscalc/
01-7	01-3	changed kg/m ³ conversion factor from 16.02 to 16.018463
01-8	01-9	pounds/ft ² 0.3325 Pa changed to pounds/in ² 6894.75728 Pascal
01-10	01-5	changed one liter jet A fuel weight from .804 kg and 1.7725 lb. to .812 kg and 1.794 pounds
01-11	01-2	moved decimal after degrees to right, next to 01111
01-47	01-41	w for angular velocity changed to ω
01-49	01-43	box at bottom: added "V= inertial velocity"
02-6	02-6	added following to bottom of page: Monthly interest rate = MIR = (annual interest rate) /12 Month Term = # months in loan Monthly payment = [amount financed]* [MIR/(1-{1+MIR} ^{-#months})] Final value (FV) of an investment is a function of the initial principal invested (P), interest rate (r –expressed as .05 for 5%, .1 for 10% etc.), time invested (Y- typically years), and compounding periods per year (n – typically =1 for yearly or =12 for monthly). $FV = P (1 + r / n)^{Yn}$
02-12	02-12	Law of Cosines: added the following $C = \cos^{-1}[(a^2+b^2-c^2)/2ab]$
03-2	03-2	added H_p = pressure altitude. The pressure associated with geopotential altitude on a standard day
03-4	03-4	changed mass from 5.98333×10^{24} kg to 5.9722×10^{24} kg
03-7	03-7	changed density from ".0023689" to ".0023769" and at end of line, added (at 15° C).
03-9	03-9-10	replaced original psychometric chart with 2 new charts
03-13	03-14	Replaced 1976 U.S. Standard Atmosphere Chart with better copy in color
03-11	03-12	after "pressure altitude" added (H_p)
03-12	03-13	changed a_o definition to 661.478 KTAS
03-12	03-13	1976 U.S. Std atmosphere equation for theta (θ): replaced 6.886 with 6.8755856. Also after "h= geopotential altitude" added (ft)
03-12	03-13	changed $n=5.25585$ to $n=5.255876$.
03-12	03-13	line beginning with "Stratosphere" replaced 216.66 °K with 216.65 K.
03-12	03-13	3 rd line from bottom: replaced $\theta = 0.7519$ with 0.751865 2 nd line from bottom, replaced .29707 with .297076 and 4806 with 48063 Bottom line, replaced .223358 with .223361 and 4806 with 48063

03-12	03-13	added the following to bottom of page: The above relations characterize the standard atmosphere table in this handbook. They may be re-written to solve for pressure altitude (H_p) for any ambient pressure. Below the tropopause (ambient pressure greater than 472.683 psf or 22632 Pa) $H_p [\text{ft}] = [1 - (P_a/P_o)^{0.1902632}]/[6.8755856 \times 10^{-6}]$ In the troposphere (ambient pressure between 114.347 and 472.683 psf or between 5475 and 22632.1 Pascal) $H_p [\text{ft}] = 36089 + [\ln(P_a/P_o) + 1.498966]/0.000048063$
03-14-15	03-15-18	replaced 2 tables with one plot and 3 tables
-	03-17 & 03-32	added following link to atmospheric parameter calculator http://www.digitaldutch.com/atmoscalc/
-	3-22-32	added sub sections 3.8 Geodetic Measurements and 3.9 Temperature Compensated Barometric Altitude.
04-3	04-3	added the following equation after the first equation for Calibrated Airspeed $\sqrt{7 \frac{P_o}{\rho_o} \left(\left[\frac{q_c}{P_o} + 1 \right]^{2857} - 1 \right)}$
04-3	04-3	changed “1478” in second equation for Calibrated airspeed to “1479”
04-8	04-8	next to “Equivalent airspeed” title, added (valid if $q_c/P_a > 0.892929158$) Next to “Calibrated airspeed” title, added (valid if $V_c > a_o$)
04-10	04-10	deleted letter “A” in figure
04-11	04-11	changed 4.7.1 title from “Tower Fly by” to “Fly by.” Below title added the following text: As depicted below, the flyby method originally used some sort of viewing platform with surveyed distances and a grid or other device for determining the aircraft’s relative angle above the platform’s altimeter. This information combined to give the aircraft’s actual pressure altitude. Modern methods replace the tower system with a radar altimeter or GPS unit to determine tapeline height above the flyby line (H_g). This geometric height is converted to a pressure altitude change using a temperature correction. When added to the aircraft’s pressure altitude on the runway, this change provides the actual pressure altitude during the flyby (Actual H_c = runway pressure altitude + $H_g(T_s/T_r)$).
04-19	04-18	as part of the wind velocity equation, inserted the following footnote arrow pointed to the +/- symbol: “whichever works”
04-19	04-18	After the last equation, add the following text The “Windbox” method consists of flying four legs instead of three. The extra leg provides a fourfold increase in wind calculations to improve result confidence. The “Orbis” method extends this advantage by collecting data at every heading throughout a level turn.
06-3	06-3	added the following after the last equation: For cases where the z axis is defined positive upward (typical for normal-axis accelerometers) $x_b = x_s \cos \alpha + z_s \sin \alpha$ $z_b = z_s \cos \alpha - x_s \sin \alpha$
08-2	08-2	following $\varepsilon = \zeta \omega_n$, added $= \zeta/[1 - \zeta^2]^{.5}$
08-31	08-31-34	Replaced nomograph chart with equations and 2 new nomographs one with British Units and the other with Metric units.
11-17	11-17	last equation moved “D” in denominator to the numerator
12-6	12-6	top equation changed T_{as} to T_{at} in denominator
12-6	12-6	Pt changed to test day brake power at the propeller and Ps changed to standard day brake power at the propeller (not pressure as originally written).

12-6	12-6	added following at bottom of page: N_s = Standard day propeller RPM $F_{nt} = T_{ot}$ = Avg. Test net thrust (approx .94 x static thrust @ test conditions) $F_{ns} = T_{os}$ = Avg. Standard net thrust (approx .94 x static thrust @ std.conditions)
12-7	12-7	replaced equation 12.7 with new equation
12-9	12-9	equation 12.14 added a W ahead of the $\sin\theta_{rw}$ term
12-9	12-9	R_m definition changed “nose wheel” to “main wheel”
12-9	12-9	L_t definition changed “main wing” to “horizontal tail”
-	16-1-06	New Section - Rotary Wing
-	17-1-22	New Section - Gas Turbine Propulsion
-	18-1-04	New Section - Telemetry Control Room and Radio Communications
-	19-1-8	New Section – The Electromagnetic Spectrum
-	Back Cover	Quick Index added to back cover

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