rich to burn or is inert as defined below. For the purposes of this appendix, a fuel tank that is not inert is considered flammable when the bulk average fuel temperature within the tank is within the flammable range for the fuel type being used. For any fuel tank that is subdivided into sections by baffles or compartments, the tank is considered flammable when the bulk average fuel temperature within any section of the tank, that is not inert, is within the flammable range for the fuel type being used.

(d) *Flash Point.* The flash point of a flammable fluid means the lowest temperature at which the application of a flame to a heated sample causes the vapor to ignite momentarily, or ''flash.'' Table 1 of this appendix provides the flash point for the standard fuel to be used in the analysis.

(e) *Fleet average flammability exposure* is the percentage of the flammability exposure evaluation time (FEET) each fuel tank ullage is flammable for a fleet of an airplane type operating over the range of flight lengths in a world-wide range of environmental conditions and fuel properties as defined in this appendix.

(f) *Gaussian Distribution* is another name for the normal distribution, a symmetrical frequency distribution having a precise mathematical formula relating the mean and standard deviation of the samples. Gaussian distributions yield bell-shaped frequency curves having a preponderance of values around the mean with progressively fewer observations as the curve extends outward.

(g) *Hazardous atmosphere.* An atmosphere that may expose maintenance personnel, passengers or flight crew to the risk of death, incapacitation, impairment of ability to self-rescue (that is, escape unaided from a confined space), injury, or acute illness.

(h) *Inert.* For the purpose of this appendix, the tank is considered inert when the bulk average oxygen concentration within each compartment of the tank is 12 percent or less from sea level up to 10,000 feet altitude, then linearly increasing from 12 percent at 10,000 feet to 14.5 percent at 40,000 feet altitude, and extrapolated linearly above that altitude.

(i) *Inerting.* A process where a noncombustible gas is introduced into the ullage of a fuel tank so that the ullage becomes nonflammable.

(j) *Monte Carlo Analysis.* The analytical method that is specified in this appendix as the compliance means for assessing the fleet average flammability exposure time for a fuel tank.

(k) *Oxygen evolution* occurs when oxygen dissolved in the fuel is released into the ullage as the pressure and temperature in the fuel tank are reduced.

(l) *Standard deviation* is a statistical measure of the dispersion or variation in a distribution, equal to the square root of the arithmetic mean of the squares of the deviations from the arithmetic means.

(m) *Transport Effects.* For purposes of this appendix, transport effects are the change in fuel vapor concentration in a fuel tank caused by low fuel conditions and fuel condensation and vaporization.

(n) *Ullage.* The volume within the fuel tank not occupied by liquid fuel.

N25.3 *Fuel tank flammability exposure analysis.*

(a) A flammability exposure analysis must be conducted for the fuel tank under evaluation to determine fleet average flammability exposure for the airplane and fuel types under evaluation. For fuel tanks that are subdivided by baffles or compartments, an analysis must be performed either for each section of the tank, or for the section of the tank having the highest flammability exposure. Consideration of transport effects is not allowed in the analysis. The analysis must be done in accordance with the methods and procedures set forth in the Fuel Tank Flammability Assessment Method User's Manual, dated May 2008, document number DOT/FAA/AR–05/8 (incorporated by reference, see §25.5). The parameters specified in sections N25.3(b) and (c) of this appendix must be used in the fuel tank flammability exposure ''Monte Carlo'' analysis.

(b) The following parameters are defined in the Monte Carlo analysis and provided in paragraph N25.4 of this appendix:

(1) Cruise Ambient Temperature, as defined in this appendix.

(2) Ground Ambient Temperature, as defined in this appendix.

(3) Fuel Flash Point, as defined in this appendix.

(4) Flight Length Distribution, as defined in Table 2 of this appendix.

(5) Airplane Climb and Descent Profiles, as defined in the Fuel Tank Flammability Assessment Method User's Manual, dated May 2008, document number DOT/FAA/AR–05/8 (incorporated by reference in §25.5).

(c) Parameters that are specific to the particular airplane model under evaluation that must be provided as inputs to the Monte Carlo analysis are:

(1) Airplane cruise altitude.

(2) Fuel tank quantities. If fuel quantity affects fuel tank flammability, inputs to the Monte Carlo analysis must be provided that represent the actual fuel quantity within the fuel tank or compartment of the fuel tank throughout each of the flights being evaluated. Input values for this data must be obtained from ground and flight test data or the approved FAA fuel management procedures.

(3) Airplane cruise mach number.

(4) Airplane maximum range.