COLD TEMPERATURE CORRECTIONS

Pressure altimeters are calibrated to indicate true altitude under ISA conditions. Any deviation from ISA will result in an erroneous reading on the altimeter. In a case when the temperature is higher than the ISA, the true altitude will be higher than the figure indicated by the altimeter, and the true altitude will be lower when the temperature is lower than the ISA. The altimeter error may be significant, and becomes extremely important when considering obstacle clearances in very cold temperatures.

In conditions of extreme cold weather, PSX users with the appropriate option selected should add the values derived from the Altitude Correction Chart to the published procedure altitudes, including minimum sector altitudes and DME arcs, to ensure adequate obstacle clearance. Unless otherwise specified, the destination aerodrome elevation is used as the elevation of the altimeter source.

For aerodromes up to 1,000ft use aerodrome temperature and for aerodromes above 1,000ft use ISA deviation for altitude corrections. (The temperature at ISA is +15°C minus 2°C per 1,000ft above sea level. The ISA deviation is the ambient temperature minus the temperature at ISA. E.g. an airfield 2,500ft above sea level at -30°C has an ISA deviation of -30-10 = -40.)

With respect to altitude corrections, the following procedures apply:

- IFR assigned altitudes may be either accepted or refused. Refusal in this case is based upon the pilot's assessment of temperature effect on obstruction clearance.
- IFR assigned altitudes accepted by a pilot shall not be adjusted to compensate for cold temperatures, i.e. If a pilot accepts “maintain 3,000”, and altitude correction shall not be applied to 3,000 feet.
- Radar vectoring altitudes assigned by ATC are temperature compensated and require no corrective action by pilots.
- When altitude corrections are applied to a published final approach fix crossing altitude, procedure turn or missed approach altitude, pilots should advise ATC how much of a correction is to be applied.

Note that the effect of temperature on altitude is not modelled in MSFS based sims and therefore no correction is required by users on these platforms.

ALTITUDE CORRECTION CHART

Height *Above* the Elevation of the Altimeter Source (feet)

Aero-drome Temp °C	Aero-drome ISA deviation °C	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
0°	-15	20	20	30	30	40	40	50	50	60	90	120	170	230	290
-10°	-25	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20°	-35	30	50	60	70	90	100	120	130	140	210	280	430	570	710
-30°	-45	40	60	80	100	120	140	150	170	190	280	380	570	760	950
-40°	-55	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50°	-65	60	90	120	150	180	210	240	270	300	450	600	890	1190	1500

Note: Values should be added to published altitudes.