EXPLORER FLIGHT DATA EXAMPLE SAND POINT

Take-off: Naval Air Station Sand Point

Heading: 182^{o} (T)

Airspeed ascent: 84 m/s

Ascent rate: 15.6 m/s

Time until engine failure: 1 minute, 3 seconds

Airspeed descent: 61 m/s

Descent rate: 5.4 m/s

Wind direction: From 168^{o} (T)

Wind speed = $-(1/720)t^2 + 25$, where t is seconds after engine failure

Note: Wind only affects the aircraft after engine failure as prior to engine failure the pilot compensates for the wind speed and direction.

EXPLORER FLIGHT DATA EXAMPLE RENTON

Take-off: Renton Airfield

Heading: 340^{o} (T)

Airspeed ascent: 98 m/s

Ascent rate: 10.8 m/s

Time until engine failure: 75 seconds

Airspeed descent: 60 m/s

Descent rate: 8.0 m/s

Wind direction: From 350^{o} (T)

Wind speed = $-(1/720)t^2 + 25$, where t is seconds after engine failure

Note: Wind only affects the aircraft after engine failure as prior to engine failure the pilot compensates for the wind speed and direction.

ANSWERS BELOW

Answer Key – EXAMPLE Sand Point

Take-off: Naval Air Station Sand Point

Heading: 182^{o}(T)

Airspeed ascent: 84 m/s

Ascent rate: 15.6 m/s

Time until engine failure: 1 minute, 3 seconds

Airspeed descent: 61 m/s

Descent rate: 5.4 m/s

Wind direction: From 168^{o}(T)

Wind speed: equation given, they integrate it to find total motion due to wind (i.e., position) = $-(1/(720*3))t^{3}+25t$

Calculations:

Note: X= east/west motion, positive east; Y=north/south, positive north

Ascent: 983 m altitude,

Ascent motion: X = -185 m, Y = -5289 m

Descent: 182 sec

Descent (w/o wind): X = -387 m, Y = -11,095 m

Descent from wind: X = -366, Y = 1721

Total XY: X=-938 m, Y = -14,663 m;

Total answer = 14,693 m @ 183.66^{o} (T)

Answer Key – EXAMPLE RENTON

Take-off: Renton Airfield

Heading: 340^{o} (T)

Airspeed ascent: 98 m/s

Ascent rate: 10.8 m/s

Time until engine failure: 75 seconds

Airspeed descent: 60 m/s

Descent rate: 8.0 m/s

Wind direction: From 350^{o} (T)

Wind speed: equation given, they integrate it to find total motion due to wind (i.e., position) = $-(1/(720*3))t^{3}+25t$

Calculations:

Note: X= east/west motion, positive east; Y=north/south, positive north

Ascent: 810 m altitude,

Ascent motion: X = -2514 m, Y = 6907

Descent: 101 sec

Descent (w/o wind): X = -2078m, Y = 5709 m

Descent from wind: X = 356, Y = -2020

Total XY: X=-4236 m, Y = 10,596 m;

Total answer = 11,411 m @ 338.21^{o} (T)