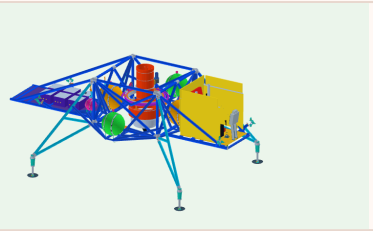
TEXTTOCAD
TEACHING AI TO MAKE THINGS

LLTV R4D.1 · 22 Nov 2026

Crosswind and a go-around circuit

Full modelled load, 1,768.1 kg. All cases use one outbound profile limited to 2 m/s ground speed. Short routes may not reach that speed.

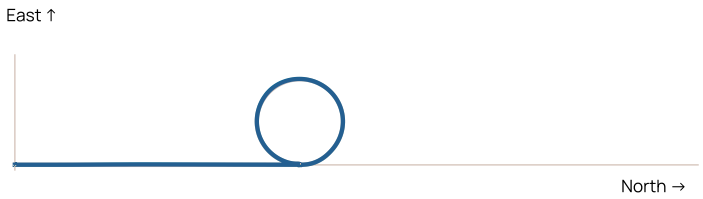


Range and time

Case	Crosswind, m/s	Landing offset, m	Normal, s	Circuit, s	Track with circuit, m	3D
Calm	0.0	16.5	45.7	86.8	32.2	Normal · Circuit
Crosswind 1.5 m/s	1.5	16.5	45.7	86.8	32.2	Normal · Circuit
Gusts to 3.5 m/s	1.5 → 3.5	16.5	45.7	86.7	32.3	Normal · Circuit
Reversing gust	1.5 → -1.5	16.5	45.7	86.8	32.2	Normal · Circuit

Time runs from liftoff to first contact in each branch. Offset refers to normal landing; the circuit returns to the same site. Track length covers the entire horizontal circuit branch.

Calm | Crosswind 1.5 m/s | Gusts to 3.5 m/s | Reversing gust



Reserve and landing

Go-around: 8 s of initial descent, 6 s climb, 24 s for a 2.5 m radius circuit at 3.5 m CG height, then 3 s stabilization before final landing. Body heading is held fixed. First-approach reserve is 120% of modelled use through shutdown after the circuit, plus 5% of each full liquid load.

Case	First approach, s	Before approach	Required with reserve	Additional use	After shutdown	Abort clearance, m
Calm	37	213.09 / 186.06	27.56 / 184.83	10.18 / 108.62	199.40 / 44.20	0.49
Crosswind 1.5 m/s	37	213.09 / 186.07	27.56 / 184.81	10.18 / 108.61	199.40 / 44.23	0.49
Gusts to 3.5 m/s	37	213.09 / 186.06	27.55 / 184.77	10.18 / 108.58	199.41 / 44.25	0.48
Reversing gust	37	213.09 / 186.08	27.56 / 184.81	10.18 / 108.60	199.40 / 44.23	0.49

All pairs in kg, JP / H_2O_2 order. Additional use compares the circuit with normal landing from the shared branch point.

Assumptions and checks

Assumed horizontal drag area of 4 m² acts at the CG. Positive crosswind blows east. Smooth 6–8 s gusts occur in translation, the first approach, the circuit and final descent. The reversing case varies from +1.5 to −1.5 m/s. Wind profile, aerodynamic moments and landing criteria require independent validation.

The reserve boundary was bracketed at 1 s. Published trajectories use 5 ms integration. Abort clearance, circuit closure and rest on four supports were checked.

Results, parameters and SHA-256 · **Calculation code**