

Take off
Aircraft with rocket pods UB-16

We found the follow information, but only for the ZO aircraft with 4 empty rocket pods:

The weight of the pylons is 21.5 kg (47 lbs) for each. The weight of the rocket pod UB-16 empty is 52 kg (115 lbs). The drag coefficient increases by 0.011. The take off ground run for an aircraft L-39ZO with 4 rockets pods UB-16 (take off weight 5,063 kg, 11,163 lbs) is 725 m (2,378 ft) under standard atmosphere conditions. The information is based on the instruction A 101/1/101 for the Operation and the Procedures of the Aircraft L-39ZO of the Air Force of the former GDR.

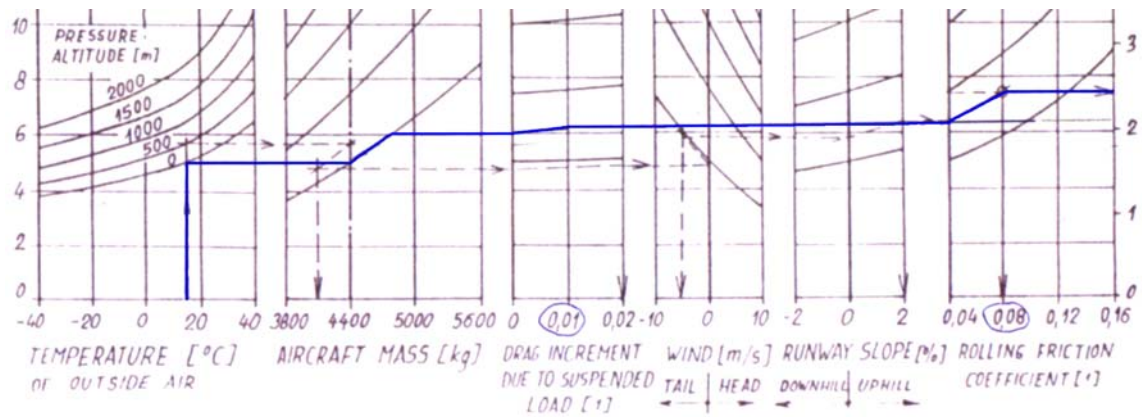
The Czech manual includes figures about take off ground run, accelerate stop distance and take off distance over 50 ft.

We calculated with following weights:

	Clean aircraft		Aircraft with 4 UB-16	
	Weight kg	Weight lbs	Weight kg	Weight lbs
Aircraft basic empty	3,300	7,275	3,300	7,275
Pilot front cockpit	80	176	80	176
Pilot rear cockpit	80	176	80	176
Fuel fuselage tanks	824	1,816	824	1,826
Fuel tip tanks	156	344	156	344
Pylons (4)			86	190
Pods UB-16 (4)			208	460
Take off weight	4,440	9,787	4,734	10,347

The figures show under standard atmosphere conditions following distances:

	Clean aircraft		Aircraft with 4 UB-16	
	Distance meters	Distances feet	Distance meters	Distances feet
Take off ground run	550	1,800	730	2,400
Take off distance over 50 ft	700	2,300	825	2,700
Accelerate stop distance	1,200	3,800	1,310	4,300



The line shows the way of calculation. Standard conditions are mean sea level, temperature 15 °C (59 °F). The take off weight is 4,734 kg. The drag increment due to the pods is 0.01. Further we calculated with zero wind and no runway slope. The rolling friction coefficient is 0.08 for a concrete runway. The result is 2,400 ft take off ground run.

The figures for accelerate stop distance and take off distance over 50 ft take into consideration the take off weight only.

So if you intend to use 2 rocket pods only, your take off ground run is somewhere between 1,800 and 2,400 ft.

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