

FLYING THE DC10-30

First off, if you by any chance have or can pickup charts for the DC10, then by all means do so, as the FDE has been updated to allow for their use.

This readme is a small, quick guide to fly SGA's DC10 more realistically.

Ok, number crunching time. All the numbers given are based on Standard Atmospheric Conditions.

Fuel Loading.....

To sum things up for the real bird, it has a #1, #2, #3 and centre fuel tanks. There is more with aux tanks but we'll ignore those ones for now.

The #1 and #3 tanks are wing tanks situated outboard of the wing engines. The #2 tank is actually 2 tanks situated inboard of the wing engines, but are connected together to form 1 tank. The centre tank is forward of the main landing gear approximately.

In the SGA DC10, you have the right and left main tanks that cover the #1 and #3 tank, the centre1 tank is the #2 tank, and the centre2 tank is the centre tank.

When loading fuel, its just like the real bird, the Left, Right and Centre1 tanks get filled up evenly. Once the Left and Right tank are full keep filling the centre1 tank until its full. Now start filling up the centre2 tank. With the amount of cargo and pax set up by default, you will NOT be able to fill up the centre2 tank. If you need more fuel, then empty the bulk cargo section first, then the aft and fwd cargo sections evenly. Sacrifice cargo pound for pound for fuel needed.

The idea here is to keep the Centre Of Gravity in around the 19 to 23 % range with the COG indicator in the Fuel and Payload window.

For fuel planning, I will give an example to go by and you can extrapolate numbers from there. With the default pax and cargo load, and you fill your fuel tanks up with the centre2 tank having 40000 lbs of fuel, this will give you about 195000 lbs of fuel and have you near max takeoff gross weight. Your range will be approximately 3700nm's once you have reached cruise.

Now remember, this 3700 nm's is rough, as you will have to take account winds, temperatures and so on.

Fuel Management.

In the real DC10, there is no automated systems for fuel management, hence the need for a Flight Engineer. Since we do not have a complex panel for the DC10, we have given you a "method" of managing fuel during your flight.

As mentioned above, we have an optimal position for our COG and we would like to keep it there as much as possible.

If you open the fuel panel, you will see fuel gauges there. Unfortunately these gauges are in Kilograms, but our fuel management is simple so we really do not need to know exact fuel amount unless your very close to empty.

Normally at takeoff, we will be using all the fuel tanks, so make sure the fuel tank selector is set to all.

Once you have established yourself in a climb profile, then set the tank selector to Ctr. This will draw fuel from the centre1 tank. I know, your going to ask about the centre2 tank..... See the other knob further down? By setting this switch to Fore, you will be transferring fuel from the centre2 tank to the centre1 tank. You will need to keep doing this say every 15 minutes to 30 minutes during your flight. I have not tried the auto transfer mode so the consequence of this setting is unknown.

Once your centre2 tank is empty, monitor the centre1 tank until it has approximately the same amount of fuel as the right and left tanks. Now set the tank selector to all.

Fuel management, basic and simple.....I hope.

Now for some basic numbers from takeoff to landing (For those that do not have access to charts.) BTW, this is not a flight tutorial and these numbers are for sea level.

Takeoff:

- Flaps set at 15.

- Trim set to +4 on the trim indicator in the lower right corner. If your light then +3 should be good enough.

- Crank up the throttle to set 45% N1 and let the engines stabilize.

- Release the brakes and set 110% N1. If your light and would like to set flex takeoff power, then set 99% N1.

Some numbers to go by, extrapolate between for a guide line. I can't give you V1's as I do not have that chart on hand, plus there are too many variables to do a quick and easy table. Just use your common sense, or at least think V1 at 80kts should keep you out of trouble.

Vr=Speed at which to rotate the aircraft.

V2=Engine out minimal climb speed.

Vfr=Speed to fully retract flaps.

Vsr=Speed to retract slats.

Vmm=Min Maneuver clean config.

Weight	Vr	V2	Vfr	Vsr	Vmm
400000	146	163	172	210	240
450000	156	172	182	223	255
500000	167	179	192	235	268
550000	170	188	201	247	282
575000	180	193	206	252	288

Climb Out:

- Don't use the autothrottle, as we do not have a thrust computer, except for you.

- Maintain your airspeed by using the vertical speed on the autopilot.

- Retract flaps and slats according to speed schedule.

- Set your N2 at 100% and keep adjusting throughout the entire climb. In the real world, you would go by N1, but by keeping the N2 at this

setting, N1 will show approximately what it should be if going by the charts.

- Climb out below 10000 feet, speed should be at 250kts or Vmm, whichever is greater. In the real world ATC knows you're a heavy, so they will allow this in most cases.

- Above 10000, lower the nose to 1000 fpm to accelerate to 300 kts, then resume previous climb rate.

- Once at your optimal cruise altitude, keep the N2 at 100% until you have reached your cruise speed, typically M0.82.

- Switch on autothrottle as desired.

Optimal Cruise Altitude at M0.82. Again these are guide lines to follow. By monitoring your Gross weight, you can step climb to the next optimal level as you burn off fuel.

Weight	Altitude	Max Altitude
400000	35000	39000
450000	33000	37000
500000	31000	35000
550000	29000	33000
575000	29000	31000

Descent:

Typically around 300kts till 10000 then max 250. To increase the challenge, handle the throttles manually and never allow N1 to go below 45%. The thrust computer sets this to prevent the engine generators from dropping off in the real world and will only allow engine idle when the mains are on the ground. Also use spoilers if you need to descend faster.

Approach:

- Again, handle the throttles manually to increase the challenge and do not let N1 go below 45%.

- Unless your coming into a short field, you generally would set flaps to 35 for landing.

- General rule of thumb for descent speed is to not exceed 1500 fpm.

Landing Speeds. Again, this is a guide line.

Weight	Vc	Vf15	Vf22	Vf35	Vf50
300000	208	179	147	131	127
350000	225	194	160	142	137
400000	240	207	170	151	146
450000	254	220	181	160	155 Over Max Landing Weight

I hope you enjoy SGA's DC10-30.

Best regards
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