

Optimise your Descent

OPSGROUP Team

3 February, 2023



The FAA has 'stepped up' their game in reducing emissions and save fuel by reducing the number of 'step down' approaches into some major airports.

Here is a mini '*what you need to know*' about CDAs, OPDs and how and where to fly them.

What's the difference?

Seems a good question to answer first.

There are generally **three types of descent** you can expect when you head into a big, controlled airport.

- **The Step Down**
- **A CDA**
- **An OPD**

The Step Down is exactly what it sounds like – you descend, level off, maintain that for a bit, then descend again, level off again, maintain it for a bit again...

This generally sucks for three reasons. One it is annoying for pilots because it means you have to do more. Two it can be a lot noisier on the ground if airplanes are roaring along low level, at lower speeds and three it is obviously **a lot less fuel efficient**.

Next up, you have **the CDA** – the constant descent approach. Again, exactly what it sounds like. (*I feel like I don't really need to explain this to pilots reading this but who knows, maybe a non-pilot has taken a random interest in it because of the excellent picture I used for the header*).

So, with a CDA ATC, or the pilot, attempts to continue descending without levelling off. This is better for the reasons already stated above, but it is not the best because a CDA can mean descending with thrust on. A good example is **EGLL/London Heathrow** who still consider it a CDA if you've descend more than 50 feet in 2nm, and don't have a level segment of more than 2.5nm below 6000'.

2.2. NOISE ABATEMENT PROCEDURES

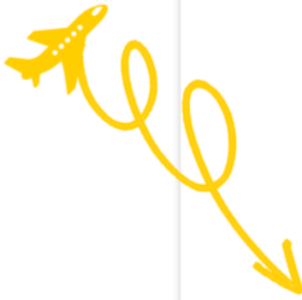
The following procedures may at any time be departed from to the extent necessary for avoiding immediate danger or for complying with ATC instructions.

Every operator of ACFT using the APT shall ensure at all times that ACFT are operated in a manner calculated to cause the least disturbance practicable in areas surrounding the APT.

An ACFT approaching to land shall according to its ATC clearance minimize noise disturbance by the use of continuous descent and low power, low drag operating procedures (see below).

Where the use is not practicable, ACFT shall maintain an altitude as high as possible.

For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5NM occurs below 6000' and 'level flight' is interpreted as any segment of flight having a height change of not more than 50' over a track distance of 2NM or more, as recorded in the APT noise and track-keeping system.



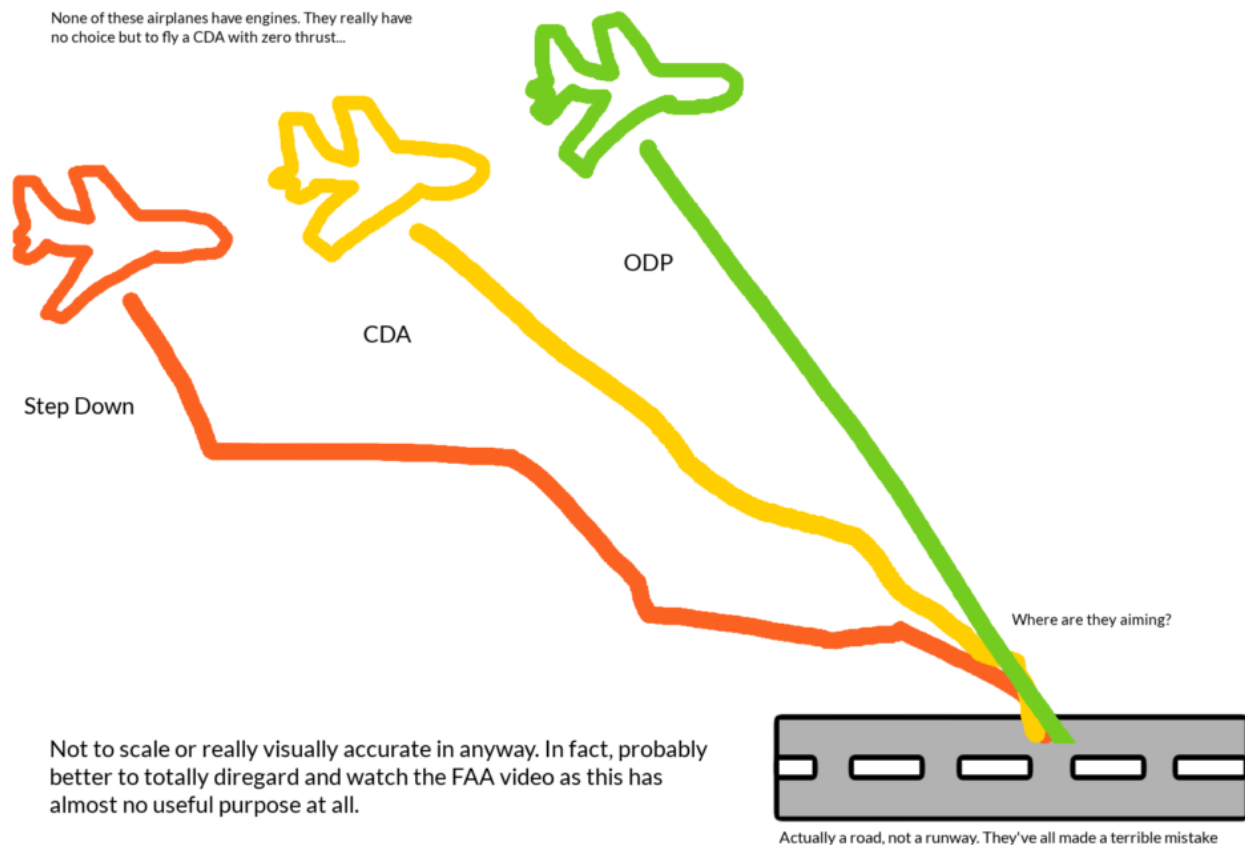
Which brings us to the OPD.

This acronym stands for '**optimised profile descent**'. Sorry, optimized (because its an American name so I'll give it the 'z').

Not to be confused with **ODP (Obstacle Departure Procedures)**. I feel like we may have reached a point in aviation where every acronym possible has been used.

Anyway, the ODP tries to have the aircraft **descend with close to idle thrust**, meaning they will be at a more fuel efficient altitude for longer, and descend in the most fuel efficient way.

If you're still confused, then the FAA made this video explaining it, and I made this excellent visual representation of it below.



Completely pointless descent diagram

Where in the USA are these happening?

There are **11 airports that have had OPDs implemented recently:**

- **KBCT**/Boca Raton Airport
- **KFXE**/Fort Lauderdale Executive Airport
- **KMCI**/Kansas City International Airport
- North Palm Beach County General Aviation Airport (F45)
- **KOMA**/Eppley Air Field, Nebraska
- **KOFF**/Offutt Air Force Base, Nebraska
- **KMCO**/Orlando International Airport
- **KLNA**/Palm Beach County Park Airport
- **KPBI**/Palm Beach International Airport
- **KPMP**/Pompano Beach Airpark
- **KRNO**/Reno Tahoe International Airport

But wait! These are not the only ones. There are in fact others which got them in 2021:

- **KDFW**/Dallas-Ft. Worth International Airport
- **KFLL**/Fort. Lauderdale-Hollywood International Airport
- **KLAS**/Harry Reid International Airport
- **KNEL**/Lakehurst Maxfield Field
- **KDAL**/Dallas Love Field
- **KMIA**/Miami International Airport
- **KVGT**/North Las Vegas Airport
- **KMCO**/Orlando International Airport
- **KCMH**/Port Columbus International Airport
- **KPDX**/Portland International Jetport
- *Numerous other mid-size airports*

There might even be more. This isn't really a new thing and any US based folk reading this are probably thinking "*why did we read this?*" But we figured some of the non-US based folk might find it useful or vaguely interesting.

Especially as **it can make things trickier** – check out the likes of **KRNO/Reno Tahoe**. If you are flying *All the Way to Reno* then *You're Gonna be (flying) a STAR* and it might involve an OPD. This airport is at a nice high elevation of 4415', and has some decent terrain around it (the MSA is 12,000') so there ain't much room to mess up if you mess up your OPD.

Where else in the world can I expect these?

Eurocontrol have a whole task force dedicated to this. You can read their action plan [here](#).

They refer to them as CCO and CDOs (constant climb or descent operations), and I'm not sure specifically which airports use them, but I'm thinking a fair old few.