

O2 TIMER

The O2 Timer is an asset duration calculator. Its primary function is to condense complicated tabular metrics into a duration (time remaining) format. The O2 timer was built to be simple above all else with two primary functions in mind: First and foremost, the O2 Timer was built to provide pilots with rapid and logical information on their oxygen reserves in a duration output. Its second primary role is to alleviate regulatory exposure to flight crews and operating companies.

Why the O2 Timer Was Created

The O2 timer was originally conceived as a simple and practical solution to a little known regulatory contradiction. This contradiction can substantially increase regulatory exposure to flight crews and operating companies in the event of an oxygen contingency. From this point of origin, the O2 Timer evolved to encompass a wider and wider range of scenarios. Today, the O2 timer brings value both in terms of regulatory risk mitigation as well as practical value in responding to real world problems in the cockpit.

Regulatory Contradiction

Today there are essentially two parallel sets of regulations that set the rules for aviation oxygen. One set of regulations pertain to the proper equipping and provisioning of an aircraft. These regulations are the rules pertinent to OEMs, safety consultants and maintenance teams and form the bulwark of the regulations observed in aviation today. Most relevant to the O2 Timer, these regulations establish different physical metrics as the lingua franca of aviation oxygen the most well-known of which include PSI, Liters and percentage full.

The other set of regulations pertain to a pilot's response to an oxygen event. In contrast to the OEM regulations, these tend to be far more broad in definition and, most importantly, require flight crews to possess the ability to measure their oxygen reserves in duration. It was for this reason that the O2 Timer was originally created. To learn more about this regulator contradiction, [click here](#) or check out our content page for more info!

What Does the O2 Timer Do?

There are multitudes of different metrics used in aviation. In fact, oxygen consumption alone has three different metrics regularly applied to its measurement - pressure (PSI), Volume (Liters) and capacity (percentage full). Each of these are applied varying by aircraft OEM, and each are ultimately intended to express the same thing: how long will the oxygen reserves last?

To make things even more complicated, none of these metrics directly correlate to the answer they are meant to produce. Pressure, for example, has absolutely nothing to do with capacity or consumption - it is just that, a measure of internal pressure and cylinder capacity. Liters and percentage full readings are slightly closer to the desired answer, but ultimately these all represent information that is just a step in the process of finding the answer, rather than the answer itself.

In truth, when it comes to operational asset usage, time and distance are the true outputs that an operator is looking for. While the different capacity related metrics work well in provisioning and equipping an aircraft, these provide little operational value when it comes to using and rationing the assets in question.

Essentially, the O2 Timer eliminates the process of using physical metrics to deduce usable operational information by simply providing the answer that the end user is looking for to begin with: How long will this asset sustain the intended operation? The O2 Timer simultaneously increases a flight crew's reaction efficiency while providing a metric that is universally standardize-able: time remaining.

To Whom the O2 Timer is Most Useful

Pilots:

First and foremost, the O2 Timer is built for use in the cockpit. If the flight crew needs to understand their oxygen assets in time remaining, the O2 Timer is a quick solution. From verifying oxygen capacity during a ramp check to quickly reacting to an oxygen contingency, the O2 Timer provides tremendous utility.

Cabin Crew:

Medical emergencies that require therapeutic or supplemental oxygen typically fall to the cabin crew. In this regard, the O2 Timer is particularly handy. Equipped with a medical oxygen function of the O2 timer takes the guess work out of oxygen duration. In instances where a patient may require therapeutic oxygen for extended periods of time, the O2 timer can be of crucial importance.

Medical Personnel: The O2 Timer can realize value beyond aviation. Whether you are operating an air ambulance, or simply a medical operation with finite amounts of medical oxygen, the O2 timer can be put to use.

Aviation Management:

Applied solutions such as software tools, represent a central part of SMS. In this case, the O2 Timer is an essential part of an oxygen SMS component. For Directors of Aviation, Safety and Standards Officers, or other personnel charged with crafting or strengthening an SMS, the O2 Timer is a must have.

The Functions and Features of the O2 Timer

Having established why the O2 Timer exists, what it does and who it is most useful to, let's take a closer look as to the specific functions and features of the O2 Timer.

FUNCTIONS

Duration Mode:

The basic function of the O2 Timer is to provide a basic duration projection of an aircraft's oxygen reserves. This function can be used for both planning and during an operation to give the flight crew an idea of their oxygen reserves in time remaining. The value of this function is paramount during a decompression event.

Regulatory Mode:

Flying above FL410? In most countries it is required that at least one member of the flight crew is on supplemental oxygen when operating above this altitude. This regulation exists because the flight crew will be incapacitated faster than they can don their masks at this altitude. The problem is, this can eat into the crew's oxygen supply. If the crew is on supplemental oxygen and is then faced with a decompression or smoke/fire incident, it is important to factor in this casual usage to the overall duration calculation.

Enter the O2 Timer regulatory function. This function has been used most prevalently by flight crews conducting multi-legged operations that include locations that do not provide oxygen provisioning services. In scenarios such as these, the regulatory projection function will prove its worth.

Smoke/Fire Mode:

The purpose of the Fire Mode is singular: reacting to a smoke/fire event during flight. In contrast to a decompression, most masks are designed to switch into a maximum flow setting during a fire. Masks function this way in order to create a positive pressure environment within the mask. This clears smoke from a pilot's face and keeps the smoke out while breathing.

As one might expect, this uptick in oxygen flow will incur a substantial impact on oxygen asset duration. The Smoke/Fire Mode will automatically adjust duration projections based on this change in flow rate. In terms of duration, the difference between a smoke/fire event and a depressurization event can be hours. Smoke/Fire Mode cuts down on workload by delivering an accurate time remaining output at the press of a button.

Medical Mode:

In most aircraft medical/therapeutic oxygen is sourced from a separate system and distributes oxygen at a different rate from the crew or from regular passenger outlets. The Medical Mode compensates for this change and is ideal for medical emergencies or for passengers on therapeutic oxygen.

Duration/Less Regulatory Projection:

If the crew is on supplemental regulatory oxygen prior to the equal time point (ETP), this will impact the amount of oxygen remaining at the ETP to be used for decompression planning. It is the pilot's responsibility to consider this consumption amount is deducted from the onboard oxygen supply to insure the amount remaining at the critical point is adequate during a decompression event. Its primary use is to deduct regulatory oxygen consumption prior to the ETP and make the proper adjustment for oxygen planning from the ETP to the Diversion airport. The O-2 Timer makes this adjustment with only 1 entry from the pilot.

FEATURES

Metric Conversion

Aviation is awash with multiple metrics, especially when it comes to oxygen. With PSI, Liters, Percentage full, Cubic feet and flow based metering, Oxygen management can get confusing - especially if you are cross trained on aircraft from different OEMs. the O2 Timer includes a metric converter which will allow you to adjust the software for whatever metric is used on the aircraft you are flying.

Real Time Input Variables

The O2 Timer allows you to input tabular metrics from your flight plan or the flight deck in order to make quick assessments. Say goodbye to cumbersome oxygen charts! The O2 Timer gives you the ability to assess these variables quickly and decisively in a fast moving environment!

Event Specific Modes

Event specific mode options allows you to get the information you need tailored to the circumstance you face. Oxygen usage can range from casual regulatory requirements to combatting a traumatic event such as a fire or decompression. Event Specific options further increases the speed at which an aircrew can react while reducing the workload.

The O2 Timer as Part of an ADS Oxygen SMS Component

The O2 Timer is a key part of any Oxygen SMS Component. Acting both as a means of regulatory compliance and a practical tool during post event operations, the O2 Timer is a must-have. Click here to find out more about how [the O2 timer fits into your ADS Oxygen SMS Component](#)