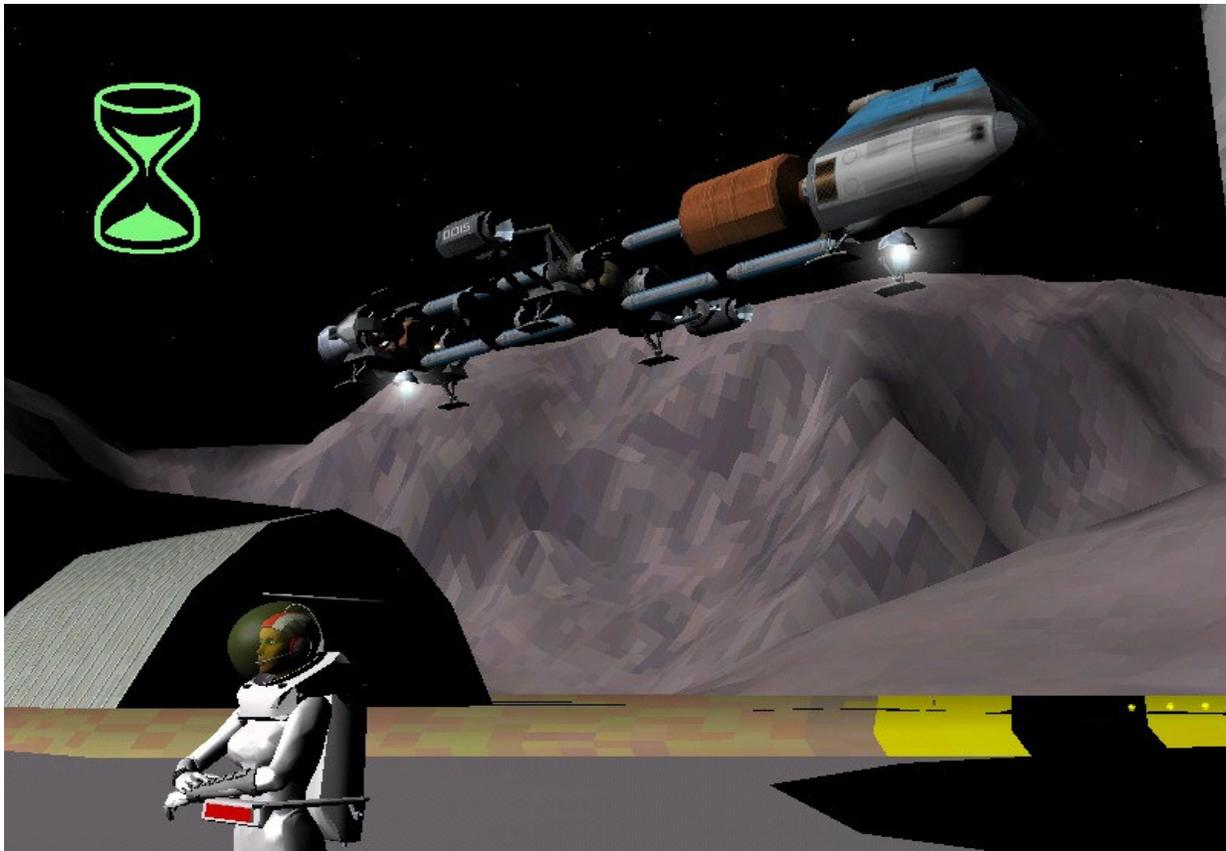


Timer MFD User Manual



INTRODUCTION



Welcome to Timer MFD. You are now about to:

- Manage pre-burn checklists by ordering and synchronizing different activities to a single time reference.
- Execute burn manoeuvres more precisely to precalculated flight plan values. Pre program your probe burns and hope for the best as is often the case with the real thing.
- Control several ships in a scenery without activating the engines yourself
- Vibrantly visualize your ongoing countdown in in glorious LED 14 segments display thanks to Jacob Fischer's Digital Dream True Type Font.
- Monitor acustically the countdown progress while you perform pre-burn tasks and hear to important items remarks at their proper checklist assigned time.

DESCRIPTION and OPERATION

When engaged from standby to run mode, TimerMFD executes a pre- burn countdown according to a preset "COAST" value. While waiting this predefined time it displays the waiting time remaining and can sound .WAV messages that you can preset in specific configuration files . This countdown time is called "coast" due to ancient spaceflight simulation tradition :). Coasting countdown can be used while really coasting in a parking orbit but works the same in prelaunch countdown too. At the time COAST value reaches zero TimerMFD goes to BURN mode and the ignition sequence for the selected propulsion system is performed and engine thrust is automatically set to the preset thrust value. Propulsion is then applied adding deltavs for a preset BURN time value. Therefore, if operation is not aborted, thrust application and estimated fuel burn proceed while burn time countdown is exhibited. At the time burn countdown shows zero engine cut-off operation is executed.

Timer MFD has three modes: **Setup**, **Standby** and **Run**. When in Setup mode you can input values for COAST time, BURN time, Main Engine Thrust Value, Hover Engine Thrust Value. You can also make selections for COAST time display, BURN time display and select the thrusters desired in the operation: Main, Hover, both or none.

There are four select or input option fields in sequence : **Coast** , **Burn** , **Main** , **Hover**. When you press SHFT + or SHFT - you can pass through all these options. By pressing SHFT + after passing through when at the first (Coast) option, you leave Setup mode and enter Standby mode: Setup light will go off and no light grey indications or blinking characters appear.

Therefore you should switch through the field options by pressing SHFT + or SHFT - to scan the options forward and backward . When the "Setup " light is on , one of the selection fields title is colored light grey and the value for the field is blinking you can select or de-select this field by pressing SHFT / and you can also input numeric values (time in seconds and Thrust level percent ratio) for the field by pressing SHFT L.

When not selected, the option fonts lights are off (fonts are black) and the option indicator bar appears in dark grey color. When selected the option fonts light up (become bright white) and the option indicator bar appears in blue color.

The table below resumes setup operation:

Option	Select with SHFT /	Input with SHFT L
Coast	Select Coast Display default exhibition	Input Coast Time Value (s)
Burn	Select Burn Display default exhibition	Input Burn Time Value (s)
Main	Select Main Engines to Fire at Burn mode	Input Main Thrust Value (%)
Hover	Select Hover Engines to Fire at Burn Mode	Input Hover Thrust Value (%)

Besides this, you can always load a Sound Event File by pressing SHFT E and entering the name of your file in the dialog box that appears. Path "..\Sound\Timer_MFD\" is assumed and doesn't need to be entered but you must write the file extension (normally ".txt").

SOUND EVENT FILES

Sound Event Files are plain ASCII text files (.TXT) that are sequential lists of .WAV files. These files are played in predefined COAST (or countdown) time intervals .You can make your own Sound Event Files. Use Notepad to make a Sound Event File and establish up to twenty time intervals when the .WAV files you have selected will be executed and heard inside the cockpit or not, or if Timer MFD is being shown or not. Then you can load these files while running Orbiter with SHFT E. Use them to remind you critical items of your checklist or to monitor countdown progress even when the display is not showing. Although you can have only twenty events for each Sound Event File you can have several Sound Event files and you can load them in sequence as your countdown develops. Notice that a .WAV basic kit is supplied.

NOTE: With Timer MFD you can preset coast , burn time and engine setup independently for each vessel in the simulation. However the Sound Events sequence played in coast countdown is the same for all vessels and defined by a single loaded Sound Event file.

Sound Event File Structure is very simple but must be followed strictly.

Below follows an example. See the default file "..\sounds\Timer_MFD\Sound Events.txt"(which is loaded by default when the MFD initializes) to check how it works.

```

**NewSound:30 Seconds**   ───►First Line is a free description line : write anything you like.
30.5 ───────────────────►Second Line is the earliest playing time
30 ─────────────────────►Third Line is the latest playing time
Sound/Timer_MFD/30sec.wav ─►Fourth line is the path and name of the .WAV file
0 ─────────────────────►Fifth Line is the Buffer to Load the Wav File: make it 0 or 1
    ───────────────────►This blank line is mandatory so the file always terminates with
**First Sound:CountDown*** a blank line
10.5

```

NOTES: Sound Event will be played at the shortest possible time after time interval start. It will not be played after time interval is finished. Sound event will be played only once at each interval. Do not overlap Time Intervals as it will give undesired results.. Use Buffer 0 preferentially. Use Buffer 1 only if the playing time of the .WAV files overlaps as is the case with ten seconds countdown and ignition messages.

ABORTING BURNS

After COAST countdown, selected engines are engaged at the initial preset thrust level and if you do nothing they will remain at this level throughout the entire burn time. Nevertheless, during the burn you can change thrust level (maybe to pass through MaxQ or to keep vertical acceleration constant). However if anytime thrust level value reaches zero the burn is considered aborted: abort light blinks, a message sounds, burn timing is interrupted and the timer goes back to standby mode.

LIMITATIONS

Currently Timer MFD is limited to 30 vessels in the simulation which includes non controllable vessels. Sound events files can contain a maximum of 20 sound events. Maximum time Input is 359999 seconds.

LEGAL STUFF

I do not claim any purpose , utility ,reliability or safety for this software therefore I can't be held responsible for any damage caused by it . Your use of the package implies that you know that there may be risks and you assume yourself all the consequences of them.

This software is declared USELESS , not an economic asset in any way. Therefore is offered FREEWARE, exempt of any commercial or currency stated value. As a consequence, it can't honestly be the object of any commercial transaction.

THANKS AND ACKNOWLEDGEMENTS

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This MFD makes use of Jakob Fisher fonts from pizzadude.tk.

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This MFD uses OrbiterSound 3.5 by Dan Steph. Dan also gave a suggestion on how to keep track of present (and gone) vessels in the simulation.

Astronaut girl in the cover is from a Greg Burch add-on.

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For the people in the Orbiter Forum that helped.

And, of course, dear Martin Schweiger.

