DCS Waypoint DATA-LOADER

and Fuel-Management-System for the A-10C and M-2000C

User Manual

Version 3

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1. Introduction

The CDU Data Loader allows to upload a stored number of waypoints from a text file, in LAT/LONG format, into the DCS A-10C CDU with a few clicks. You can also load "PREP" waypoints into the INS of the M-2000C.
The text file lists the coordinates, elevation (altitude), the DTOT (preferred arrival time) and the name of the waypoint(s). This waypoint(s) can then be used by the tool during the game to load them into the CDU or the INS. (At M-2000C only WP and ELEV available)
These waypoints can then be loaded into the A-10C as a flight plan.
With Version 3.0 a Fuel-Management-System was implemented to get a better overview for fuel consumption, range and flight time. Further you can make Low-Fuel (Bingo and Joker) settings and also one High-Fuel setting for air to air refueling. When the settings are reached, the Pilot will be acoustically informed.

This software is Freeware and can be distributed freely but you are more than welcome to give a small donation, thank you…

2. Conditions

- DCS WORLD with Module A-10C or M-2000C.

Favorable is to set the DCS System-Option in **not** *FULL SCREEN Mode*!

-VB6 runtime files must be installed. These are part of MS-Office but can be downloaded from the Internet if required.

3. Installation

After running of the installation file “Setup_Dataloader_3.X.X.exe “, you can now start the Application *Dataloader3.exe* directly from your installation folder.

<u>Important for HELIOS Users</u>:
HELIOS users have to configure HELIOS first and then start the Application *Dataloader3.exe*.

4. The Coordinates-Database

The coordinates are entered in text files with the suffix ".txt". The file name is like the indication in the Controller. Also, the folder names will be accepted. They should not have more than 12 characters because they cannot be shown.

The input Format of the coordinate with name WAYPT 01 should look like this:

E.g. for N43°12.483 E040°30.255; 5200 feet height; DTOT 12:42:00 must be entered thus: N4312483 E04030255 EL05200 T122300 WAYPT 01 *

The count of characters of every position must be the same and must be separated with a space like this. For N43°12.4 E040°3.2 it would be entered as

N4312400 E04003200 EL05200 T122300 WAYPT 01

WAYPT 01 stands for a free selectable name (max. 12 digits) of the waypoint and is shown in the CDU and HUD in same manner. The WP name must not start with a digit! The coordinates, the height, the time and the name must be separated with **one** space.

For complex flight plans, the coordinates can be written to each other and are thus loaded in one step. You can give the file the name UGKO-UGSB.txt for example and copy it into the folder MISSIONS or create its own folder.

In the DCS A-10C only a maximum of 50 waypoints can be saved, because from WP 50 internal fixed stored waypoints are placed. (Airports)

The templates folder includes the new Airport Ground and VAD charts from the maps of the < virtual-jabog32.de > (from V4.01)

For folders that should not be displayed in the Controller you must set a "#" in front of the folder name.

If there are **waypoints already loaded** in the CDU, your own or fixed Airports (from WP50), you can also load flight plans if you write **only the name of the Waypoint** in your ".txt" file e.g.:

KUTAISI

BATUMI

KOBULETTI

...

These can then be loaded with the option **LOAD FP**.

* The input format can also be used with the M-2000C, but only the data up to ELxxxxx are used. You could also use a shortened format for the Mirage.
For example: N4312483 E04030255 EL05200. **The three-digit after comma minute must however be entered!** It is rounded accordingly.

5. The Controller

To enter the data in the Game you need a Controller. It starts with the file < Dataloader3.exe > and shows like the A-10C CDU Display.

Remark: You should run the Application as **Administrator** if you only have user rights and as the game will not load the data!

You can exit the application if you click on the right upper screw; the position of the Controller on the Desktop will be saved.

To minimize the controller, click on the screw at the left upper corner.

To activate the Controller in the Game press <ALT-TAB> unless the Controller is shown. Then you will see the Controller and your Cockpit at the same time. This is the reason to run DCS **not** in *FULL SCREEN Mode*.

The Quick Select-Buttons description you can find in chapter 7.

With the Button „FUEL" you switch to the Fuel-Management-System which is described in chapter 8.

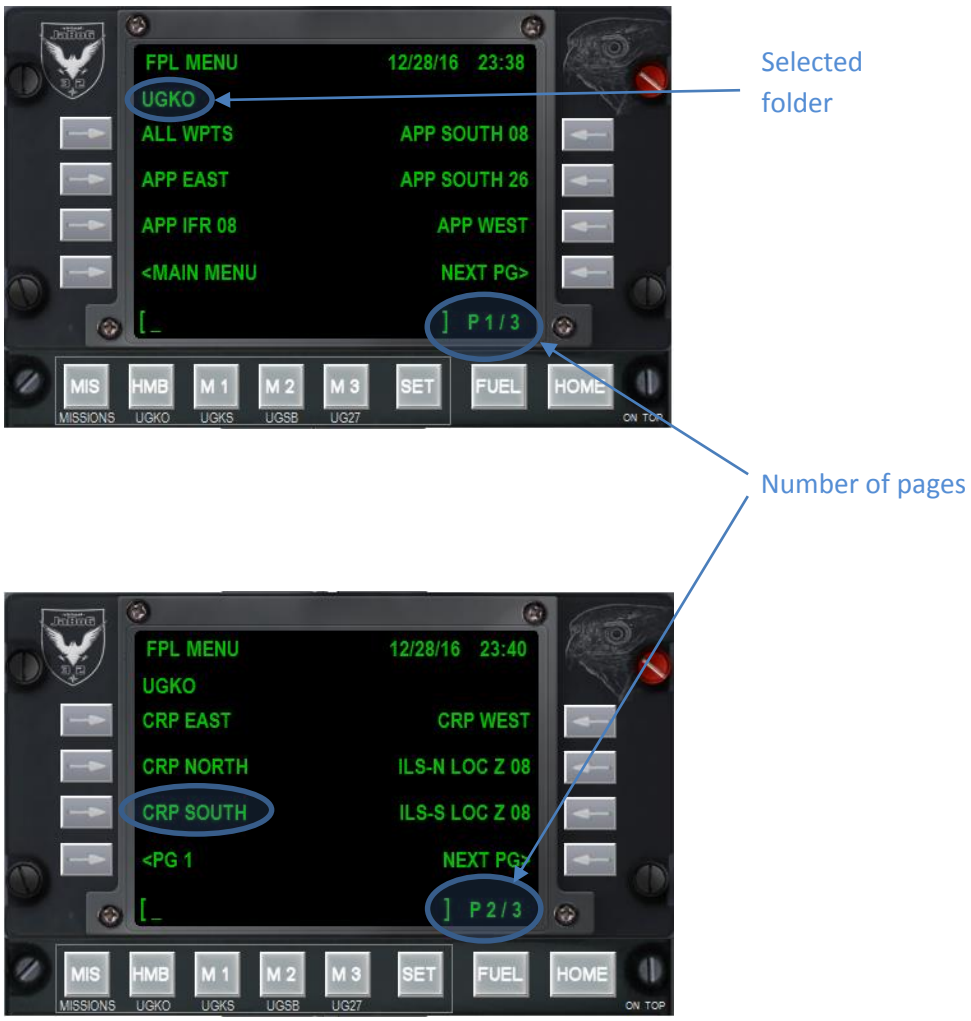
6. The Function of the Data-Loader (A-10C)

To load Waypoints or Flight-Plans do the following:

First create on the A10 CDU a new empty Flight-Plan or use the existing FP “MSN”, then you do not need prepare anything else. Wait until the Alignment of the EGI/INS is up to 1.0 minute. Note the line of the Flight-Plan in the CDU, in this example the standard Flight-Plan “MSN” in Line 1 is shown.

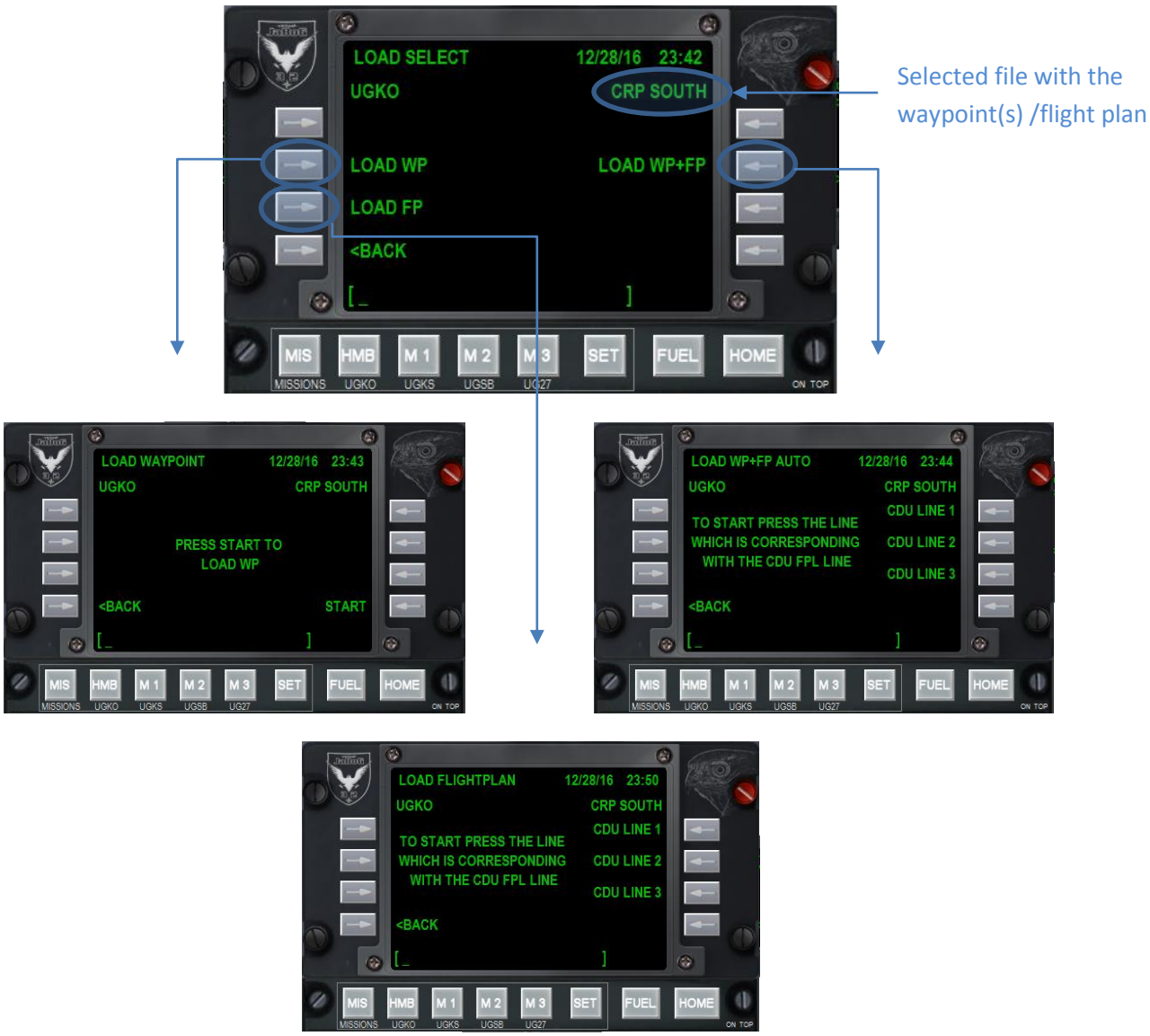
Now activate the Controller (ALT-TAB). The first section is the MAIN MENU. This Page corresponds with the folders in the Program Directory. With the LSK4R (NEXT PG) you can switch to further folders. In this example UGKO (Kutaisi-Airport) was selected.

You are now in FPL MENU, on the selection page of the Waypoints and Flight plans. This page is also with LSK 4R possible to extend. With LSK 4L you can switch one page back. These entries here correspond with the file names.



Now select one of the Waypoints (e.g. like here CRP SOUTH)

You are now on the LOAD SELECT Page and you must decide if you want to load only WAYPOINT(S), a FLIGHTPLAN or both at the same time in the CDU. If you want to load a FLIGHTPLAN you need to load appropriate WAYPOINTS before. Select with the respective LSK's <LOAD WP>, <LOAD FP> or <LOAD WP+FP>.



If you have only WAYPOINTS selected press on the next page START. All further Settings on the CDU and on AAP Panel are made automatically and the Waypoints are loaded.

When selecting LOAD FP or LOAD WP+FP you will need to select on the next page the corresponding CDU Line where the FLIGHTPLAN will show where the data has to be loaded.

Here also all further Settings on the CDU and on AAP Panel are made automatically and the Waypoints and/or the Flight-Plans are loaded. This can take some time because the CDU needs some time to create a new page.

During loading the A-10C CDU shows some different messages in the “Scratchpad”.
At the Start [LOAD INIT] and after creating the Flight-Plan [FPL LOADED].

The process is now completed and you can load further WAYPOINTS or FLIGHTPLANS.
The last Loading-Process is displayed after sending to CDU in the “Scratchpad” of the *Controller*.

If during the Loading-Process the message [CDU INPUT ERROR] occurs, the Waypoints are not loaded correctly and the Process must be repeated. You can check this on the WAYPT Page of the CDU. If the count of the Waypoints (at LSK 3R) is not more than before the Loading-Process, there are no Waypoints loaded yet.

6a. The Function of the Data-Loader for the Mirage M-2000C

The loading process on the M-2000C is identical to the procedure on the A-10C up to the LOAD SELECT page. On the LOAD SELECT page of the M-2K, which here is called LOAD PREP WAYPOINTS, you only need to press START and the waypoints will be loaded into the INS, including the predefined altitudes. All the corresponding selector switches in the cockpit are automatically adjusted.

You can change the first load waypoint before START by setting the start waypoint using the +/- keys.

7. The Quick Select-Buttons

Since Version 1.24. the CDU-Dataloader Tool is equipped with „Quick Select-Buttons“. These give you the opportunity to select direct a designated folder or the first page (HOME).

To **save** you must select the designated folder (here UG27). After that press the button SET and then press the button to be assigned. The selected folder name is indicated below the button and can now be used.
To **delete** the assignment of a button, switch in the MAIN MENU (HOME). Then clear the setting with button SET and the assigned button.

8. The Fuel-Management-System

8.1 Overview

The Fuel-Management-System is implemented to get a better overview for fuel consumption, range and flight time. You can make Low-Fuel (Bingo and Joker) and also High-Fuel settings for air to air refueling. When the settings are reached, the Pilot will be acoustically informed.

Bingo Fuel:
Minimum fuel level of the aircraft to fly back to the base.
Fly to specified airfield / aircraft carrier due to fuel shortage.

Joker Fuel:
Fuel status over bingo, where separation / mission end should begin.

8.2 The Fuel Menu

With the Button FUEL, left of the HOME Button, you switch to the Fuel Menu page.

You can go back with the HOME Button or the LSK4L.

On this menu page, you can select following sub menus:

- FUEL STATUS
- AAR SETTINGS
- MINIMUM SETTINGS

which can be selected via the corresponding LSKs.

8.3 The submenu Fuel Status

On this Fuel Status page, following values are shown:

- The total fuel of all tanks in lbs. [min. 5 lbs]
- The Ground Speed (GS). [min. 5 KT]
- The fuel flow in lbs/h separated from Engine 1 and 2. [min. 1 lbs/h]
- The current range in time and distance calculated by the corresponding Bingo and Joker Fuel settings. The range displays therefore could be switched between Bingo and Joker Fuel with the LSK3L and LSK3R.
- The maximum range in NM (Nautical Mile) corresponding to the Total Fuel.

The shown values are updated every 2 seconds. The warning calculations every second.

The range values in the upper picture are signed with an asterisk. This is described lower right with 300KT/3400FF. That means that the actual values are calculated with a fixed velocity of 300 Knots and a fixed total fuel flow of 3400 lbs/h. This is displayed whenever the GS is below 150 nodes. This is to get a rough overview on the ground about the range (in about 15000ft altitude) with the current total fuel. Above 150 nodes, the values are naturally calculated with the current GS and FF data.

You can go back to the FUEL MENU page with the LSK4L.

8.3 The submenu AAR Settings

On the AAR Settings page, it can be set a fuel quantity value at which the pilot will be informed acoustically when value is exceeded by air to air refueling. This has the advantage that the fuel gauge does not always have to be in the eye, which makes fueling easier.

The acoustic warning consists of a short warning tone followed by the words:

„*Refuel Complete*“

The current fuel quantity is displayed at TTF: in the upper right corner of the display.

Below, to the left of the LSK1R, you can see the value to be set at which the warning sounds when the value is exceeded.

The value can be set up and down with the LSK3R (+) and LSK4R (-) in hundreds of steps. If you hold down the keys for more than 1 second, the numbers scroll up or down faster.

With the LSK1-3L, the displayed fixed values can be transferred directly into the input. This should simplify the input.

You can go back to the FUEL MENU page with the LSK4L.

8.3 The submenu Minimum Settings

On the minimum settings page, two fuel quantity values (Bingo and Joker) can be set at which the pilot will be informed acoustically when the values are undershot.

A brief explanation of Bingo and Joker Fuel can be found in chapter 8.1.

The acoustic warnings consist of a double warning tone followed by the words:
"Bingo Fuel" or "Joker Fuel". If the same value is set for Bingo and Joker, only the "Bingo" warning is triggered.

The current fuel quantity is displayed at TTF: as in the AAR settings at the top right of the display.

Below, to the left of the LSK1R and LSK2R, you can see the values to be set at which the respective warning sounds if one of the values is undershot.

To set the values here you must first select which value you want to change. To do this, press the corresponding LSK1R or LSK2R. The selected value is displayed in square brackets [].

The value can be set up and down with the LSK3R (+) and LSK4R (-) in hundreds of steps. If you hold down the keys for more than 1 second, the numbers scroll up or down faster.

With the LSK1-3L, the displayed fixed values can be transferred directly into the input. This should simplify the input.

You can go back to the FUEL MENU page with the LSK4L.

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8.6 Further information's

The *Data-Loader* communicates with DCS via IP: 127.0.0.1 / UDP port 9069 if it is installed on the same computer as the DCS application. (The successive ports 9070 and 9071 are also used in the background)

Changing the IP is only necessary if you want to run the software on a PC other than where DCS is running (for example, on a Windows Tablet).

Settings for the IP and port can be found in the file:

C:\Users\yourUserName\Saved Games\DCS**cdupos.ini**
(The file is generated by the *Data-Loader* on the first start)

Open the file with a text editor. There you can change the port and the IPs. Enter the IP of each other PC on both PCs. The port must be identical on both sides.

For the *Data-Loader*, please change the IP with the designation: ***data-loader-IP:***
(The setting*: radio-device-IP:* is reserved for the application *Radio-Device*.)

In order to be able to establish the connection on the DCS computer, the ***export.lua*** of DCS must be modified. All you have to do is start the *Data-Loader* on the DCS computer once. All the settings are then made automatically. You must close the application after the start on the DCS computer.

If you also want to use the *Data-Loader* in the *openAlpha* or *openBeta* version of DCS, you have to copy the ***cdupos.ini*** into the appropriate folder by hand! Also the ***cdu_data.luac*** and the ***export.lua*** which are found in the subfolder 'Scripts'.

Now have fun with the App!

- *Sparrowhawk* -

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