

Eurofighter Typhoon Package – Development

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EFTP features

This section describes the current features of the EFTP. The chapter is subdivided into “UI”, “campaign”, “aircraft” and “weapons”.

UI:

- The EF2000 Typhoon GE & UK designations are replaced with Eurofighter and Typhoon F.2
- Eurofighter Typhoon specific icons for the pilot rooster, planning map etc.
- JG 74, No.3F & 11F squadron patches added to the database (can be selected from the logbook)

Campaign:

All three Korea KTO campaigns include a Eurofighter and a Typhoon F.2 squadron now. Specific wing/squadron patches are not assigned yet.

The squadrons are based at the following bases:

Tiger Spirit : Ongjin AB
Rolling Fire : Seoul AB
Iron Fortress : Taegu AB

Aircraft:

All modifications and additions affect the Eurofighter Typhoon aircraft only.

- 2 hires Luftwaffe skins and 2 hires RAF skins
- Simple 3-D cockpit
- Corrected dimensions, weights and internal fuel load
- New flight model
- Corrected weapon load configurations representing block 15 standard aircraft
- ATO suited to the new weapon load configurations
- Squadron stores suited to the new weapon load configurations (Modified for Typhoon F.2 and new one for the Eurofighter)
- Realistic chaff/flare dispensers (number, location, load out and deployment vectors)
- Modified gear position
- Modified airbrake deployment angle and increased effectiveness
- Canards move symmetrically only as for the real aircraft
- Flaps removed from the takeoff/landing configuration as for the real aircraft
- Changed nozzle animations
- Modified refuelling data
- Changed gun location
- Slightly changed RCS
- Increased ECM strength
- Increased RWR range
- New more realistic IRST (affecting AI controlled aircraft only)
- Modified radar with better CM, longer range, higher scanning speeds and coverage
- Modified performance and behaviour for AI controlled aircraft (AG weapon release altitudes, engagement range etc.)

Weapons:

Only some weapons which are used by the Typhoon are modified:

Meteor:

- Renamed from BVRAAM to METEOR
- Corrected weight
- Increased maximum flight time and range
- Modified dat file with new DLZ, propulsion data and additional entries at the end
- Increased range and CM resistance for the seeker

IRIS-T:

- Increased max g
- Slightly increased rocket motor burning time

ASRAAM:

- Slightly increased rocket motor burning time

Storm Shadow:

- Star (*) removed from name
- Corrected weight
- Increased maximum flight time and range
- New propulsion for longer range
- Modified seeker with higher zoom factor
- Increased warhead lethality

Mauser Bk27:

- Renamed from 27 mm-1 to Mauser Bk27
- Corrected v0
- Increased accuracy and effectiveness
- Shown as GUN in the SMS MFD format

1000 l AMX droptank:

- Reduced drag

Brimstone:

- Star (*) removed from name

Files overview

This chapter provides an overview over the files which are added or modified for the EFTP and where these files are located. Main folders are underlined and can be directly accessed from the falcon4 main directory. Subfolders are marked with a star (*).

Sim folder

*ACDATA:
ef2000.dat

*MISDATA:
asraam.dat, irst.dat, bvraam.dat, strmsd.dat

*RADAR:
Ef2k.dat, radtypes.lst

*VehDef:
Ef2000.veh, stormshad.veh, vehicle.lst

Campaign

*SAVE:
Save0.cam, save1.cam, save2.cam, teplanes.lst

art

*ckptart\1495:
3dckpit.dat

*ckptart\2263:
3dckpit.dat

*common:
Acicons.irc

*main:
Imageids.id, units.irc

*patches:
Imageids.id

*resource:
Acicons.idx/rsc, patches.idx/rsc, 64 x "air".idx, 64 x "air".rsc, 64 x war.idx, 64 x "war".rsc

Terrdata\objects:

Falcon4.ct, falcon4.acd, falcon4.icd, falcon4.rcd, falcon4.rwd, falcon4.ssd, falcon4.swd, falcon4.ucd, falcon4.vcd, falcon4.wcd, falcon4.wld

Note:

The f4browse folder contains single entries extracted from the falcon4.acd etc. files.

*KoreaObj (DDS file numbers):
1340 – 1342 (3-D cockpit textures), 2461 – 2468 (RAF Typhoon F.2 skins), 2469 – 2476 (GAF Eurofighter skins)

Text colour definitions

To provide a better overview different text colours were used for the following chapters.

Text colours being used are:

Green = Folder/Directory

Red = Edited file

Orange = New file

Blue = Entry in a file

Note:

New files which replace older ones are classed as edited files.

Direct adoptable files

The files listed below can be directly adopted without any modification work. Complete folder names are given.

Sim\ACDATA – ef2000.dat

Sim\MISDATA – asraam.dat, irist.dat, bvraam.dat, strmshd.dat

Art\ckptart\1495 – 3dckpit.dat

Art\ckptart\2263 – 3dckpit.dat

Terrdata\objects\KoreaObj – 1340 – 1342.dds, 2461 – 2476.dds

Indirect adoptable files

The following files can only be adopted if no changes were made to them since OF 4.5. The changes which are done are described as well. Some of the files are new and require that other files are modified. Complete folder names are given.

Art\common – acicons.irc

The following entry is added to the end in order to get the new Eurofighter icon to work:

[ADDIMAGE] ICON_EF2000 75 89 24 41 12 20

Art\main – imageids.id, units.irc

The imageids.id contains the image ids for map icons. These icons are included in the “air” and “war” idx/rsc files which are located in the art\resource folder. To make the icons available it is necessary to define an id for the image. The entry for the new Eurofighter map icons is:

ICON_EF2000 10127

The entry is added below the last aircraft icon entry (ICON_UKN 10126)

The units.irc defines designations being used for the UI. The entries in this file are modified and not new. The entries are:

[ADDTEXT] TXT_EF2KGE "Eurofighter"

[ADDTEXT] TXT_EF2K "Typhoon F.2"

The EF2KGE and EF2K are the ids for the aircraft and do not appear in the UI.

Art\patches – imageids.id

In this file the patch images are defined. The associated files are the patches.idx/rsc in the art\resource folder. New entries are added to the bottom to define the new patches which are:

_JG_74_ 70150

_NO_3F_ 70151

_NO_11F_ 70152

Note:

If other patches are already added it is necessary to suit the IDs. The IDs above are suited to OF 4.5.

Art\resource – **acicons.idx/rsc**, **“air”.idx/rsc**, **“war”.idx/rsc**, **patches.idx/rsc**

This folder contains the files which include the various graphics and icons used by the UI. There are 2 files each with the same name. One is an idx-file and the other the associated rsc-file. It is necessary to have both files and both must be modified.

Patches.idx/rsc: These files contain the new wing/squadron patches

Acicons.idx/rsc: These files include the EF2000 icon used for the pilot rooster

“air” & “war”.idx/rsc:

There are some 64 idx-files plus 64 associated rsc-files each with an “air” or “war” in their name, making a total of 128 idx files and 128 rsc files. These files contain the map icons. There are 8 files for each icon colour representing the icon direction on the map (NN, NE, EE, SE, SS, SW, WW, NW). Colours are blue (bl), brown (br), green (gn), grey (gy), orange (or), red (rd), white (wh) and yellow (yl). The “air” files are for the map icons, the “war” icons seems to be used for the dogfight mode. It is possible to copy and rename the “air” idx/rsc to “war” idx./rsc. It will work and save time.

Campaign\SAVE – **teplanes.lst**

The entries in this file aren’t new but modified to get the new icons to work and to change the aircraft designations for the UI.

Modified entries are:

```
// Typhoon F.2
    1      7      16      9      21281  441      10127
// Eurofighter
    1      7      50      9      21335  568      10127
```

The last number (10127) is the new icon id.

Campaign\SAVE – **save0.cam**, **save1.cam**, **save2.cam**

These are the 3 Korea KTO campaigns. I slightly modified them adding Eurofighter and Typhoon F.2 squadrons (one squadron for each type). I suggest that these campaign files should be offered as option via the config editor (F4Patch).

Sim\RADAR – **ef2k.dat**, **radtypes.lst**

In order to get the ef2k.dat file to work it is necessary to define it in the radtypes.lst file. The entry is **ef2k** and must be inserted as 128th entry (128 is the RCD entry for the Eurofighter Typhoon radar in the falcon4.rcd).

Sim\VehDef – **ef2000.veh**, **stormshad.veh**, **vehicle.lst**

In order to get the new files to work it is necessary to add them to the vehicle.lst.

The entries can be added to the end of the file and are:

```
0 sim\vehdef\ef2000.veh
3 Sim\VehDef\StormShad.veh
```

The numbers at the beginning define the vehicle type (aircraft, weapon etc.)

Note:

Though I conducted a couple of trials, I’m still not able to confirm that the vehicle definition files have an impact on the simulation. Further trials are necessary.

Not adoptable files

The following files can't be directly adopted for OF 4.6 as changes were definitely made to them since OF 4.5.

Terrdata\objects – falcon4.acd/ct/icd/rcd/rwd/ssd/swd/vcd/ucd/wcd/wld

These files were previously modified for OF 4.5 using F4browse 2.31 and can't be adopted for OF 4.6, nonetheless it is possible to extract single entries from these files using F4browse and to import them into the new files as well. This works for existing entries only. New entries can't be imported, meaning that this work has to be done again. In preparation for this I exported the modified entries and added them to a separate folder designated f4browse. Further details are described below in the f4browse section.

Features file links

This section describes which files are linked to each other in order to get specific features working.

Eurofighter & Typhoon F.2 designations for the UI:

In order to get these designations into the entire UI you have to change it in the following files.

- Terrdata\objects – Falcon4.VCD (Eurofighter and Typhoon F.2 entries)
- Campaign\save – teplanes.lst
- Art\main – units.irc

Notes:

- 1.) For the tactical reference it is necessary to change the designations in the tacrefdb.bin in the falcon4 main directory.
- 2.) Not changing all the files above won't cause CTDs or any other problems, but there will be different designations in the UI

EF2000 aircraft icon (pilot rooster etc.):

- art\common – acicons.irc
- art\resource – acicons.idx/rsc

EF2000 map icons:

- art\main – imageids.id
- art\resource – all air.idx/rsc & all war.idx/rsc
- terrdata\objects – falcon4.ucd (entries for Eurofighter & Typhoon F.2)
- campaign\save – teplanes.lst

EF2000 wing/squadron patches:

- art\patches – imageids.id
- art\resource – patches.idx/rsc

Eurofighter radar definition file:

- sim\RADAR – ef2k.dat
- sim\RADAR – radtypes.lst
- Terrdata\objects – falcon4.rcd (entry 128)

Eurofighter vehicle definition:

- sim\VehDef – ef2000.veh
- sim\VehDef – vehicles.lst

Storm Shadow vehicle definition:

- sim\VehDef – Stormshad.veh
- sim\VehDef – vehicles.lst

F4Browse

This chapter describes which data entries were exported from the Falcon4.acd/ICD/RCD/RWD/SSD/SWD/UCD/VCD/WCD/WLD files which are located in the terrdata\objects folder. These entry files can be directly imported into the new files using F4browse. I created a f4browse folder with self explaining sub folders. It is worth noting that only existing entries can be replaced. New ones can't be imported. This section provides an overview over the files which can be important and describes the steps to create the new files including their content.

Importing data files:

To import data files open the Falcon4.fed in the terrdata\objects folder using f4browse. Select edit => import data and browse to the folder where the exported files are located. Select a file and click open. You will now be asked to overwrite an existing entry with the new one. Click yes and the existing entry will be overwritten. Most entry IDs are typically not changed and should be the same. I added the entry numbers to the names of the exported files for the case you like to cross check the IDs.

Example:

The Eurofighter uses the radar entry 128 which can be found in the falcon4.rcd. To replace the existing one with the new one follow the steps described above, browse to the f4browse\rcd folder and open the EF-radar_128_rcd.f4e. You will now be asked to overwrite the rcd 128 entry. Confirm with yes and you get the entry in without affecting any other entries in the rcd file. It is worth noting that you have to make sure that no other entry ID is used now (Eurofighter radar in this example). I therefore added the ID numbers (RCD entry no., CT no. etc.) to the file names.

Importable data:

This sections lists the importable data files. The files are located in various subfolders which can be found in the f4browse folder. Subfolders are marked with a star (*). ID numbers are included in the names.

*ACD:

- EF_190_ACD.f4e

*RCD:

- EF-radar_128_RCD.f4e
- Meteor-radar_69_RCD.f4e

*RWD:

- EF-RWR_62_RWD.f4e

*SSD:

- Ty_99_SSD.f4e

*SWD:

- Gun_43_SWD.f4e
- Meteor_143_SWD.f4e
- Storm Shadow_151_SWD.f4e
- 1000 I_239_SWD.f4e

*UCD:

- Ty_339_UCD.f4e
- Ty_338_UCD.f4e
- EF_627_UCD.f4e
- EF_628_UCD.f4e

*VCD:

- EF_587_VCD.f4e
- Ty_323_VCD.f4e

***WCD:**

- METEOR_227_WCD.f4e
- Storm Shadow_235_WCD.f4e
- Brimstone_232_WCD.f4e
- 1000 I_239_WCD.f4e
- Bk27_223_WCD.f4e

***WLD:**

- EF_1-13_367_WLD.f4e
- EF_2-12_368_WLD.f4e
- EF_3-11_369_WLD.f4e
- EF_4-10_370_WLD.f4e
- EF_5-9_371_WLD.f4e
- EF_6-8_372_WLD.f4e
- EF_7_373_WLD.f4e
- Ty_1-13_258_WLD.f4e
- Ty_2-12_259_WLD.f4e
- Ty_3-11_260_WLD.f4e
- Ty_4-10_261_WLD.f4e
- Ty_5-9_316_WLD.f4e
- Ty_6-8_317_WLD.f4e
- Ty_7_262_WLD.f4e

New data:

This section describes new entries which can't be imported. Therefore this work has to be done again. The steps how to do this are described as well. All the work must be done with F4browse (version 2.31 recommended).

Eurofighter squadron stores (SSD):

- 1.) Select the squadron stores page
- 2.) Right click and select "add item"
- 3.) Open the new file by double clicking and edit the values for the weapons as shown in the image below
- 4.) Open both Eurofighter unit entries (UCD) and assign the new SSD number (127 is currently assigned to the Eurofighter)

Stores for the campaign

Stores for JG - Eurofighter		
Weapon	Pos	Count
Mausers Bk 27	223	255
AIM-120C	530	140
IRIS-T	563	140
AGM-88	23	120
METEOR	227	120
EGBU-16	338	100
GBU-16	16	80
GBU-24A/B	74	80
GBU-24/B	311	80
AIM-120B	56	60
1000I AMX	239	50
...	-	-

Eurofighter IRST (ICD):

- 1.) Select the IR data page
- 2.) Right click and select "add item"
- 3.) Open the new file by double clicking and enter the data as shown in the image below
- 4.) Open the Eurofighter ACD (190) and enter the new IRST number (61 in this example)

Note

If 60 is the last entry in the ICD, just "add item" (should be 61 now) and use the import data function. Import the file EF-IRST_61_ICD.f4e.

Eurofighter IRST

EGBU-16:

The EGBU-16 is a new weapon, though not entirely new. It is based on the GBU-16, but it behaves like a GBU-32 JDAM. But there is another advantage of the EGBU-16, it can be targeted with the TGP as well. The following working steps are required to get the EGBU-16 in.

- 1.) Select the Class Table page in F4Browse and right click on the entry 249 (CT for the GBU-16), click add copy
- 2.) Select the Sim Weapons Data page right click on the GB16 (entry 109) and click add copy, rename it to EGB16
- 3.) Select the Weapons page right click on the GBU-16 and click add copy and rename the weapon to EGBU-16
- 4.) As the new weapons ID is probably way beyond 602, select a store within the ID frame of 1 – 602. I suggest to replace a rack
- 5.) Rename the EGBU-16 in the Weapon page and give it the name of the store you want to replace, enter the original data of the store, link to the original CT, change the file offset in the CT to the new weapons ID
- 6.) Do the same now with the original ID you have replaced and enter the data for the EGBU-16
- 7.) Modify the EGBU-16 CT, SWD and WCD entries as shown in the pictures below

Notes:

- It is necessary to give the weapon an ID between 1 – 602 in order to add and edit it in the squadron stores page (SSD). Without it the weapon won't be available in the campaign ("out" in the weapon load screen). I unfortunately know no other way to do it.
- Exported f4e-files do not include the EGBU-16 and associated modifications, but the files in the terrdata\objects folder include the weapon, just for the case you want to check it out.

The images below show how the different entries look in the modified form.

weapons control data entry (WCD)

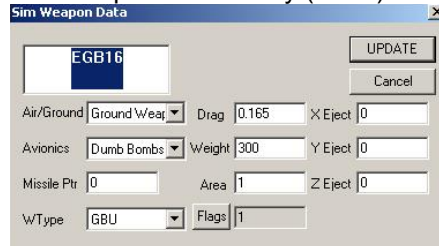
The Flags window within the Weapon Data window



Weapon Flags dialog box with the following settings:

- ☐ Recon
- ☐ Tracer
- ☐ Fuel
- ☐ Load on 1 hpt
- ☐ Ecm
- ☐ Is Gun
- ☐ Rckt Marker
- ☒ Area Effect
- ☐ Ammo is 1/10th
- ☐ 3rd Gen LGB
- ☐ Cluster
- ☐ Always Rack
- ☒ No Trails
- ☒ Bomb
- ☒ Bomb Drop Snd
- ☒ Bomb GPS

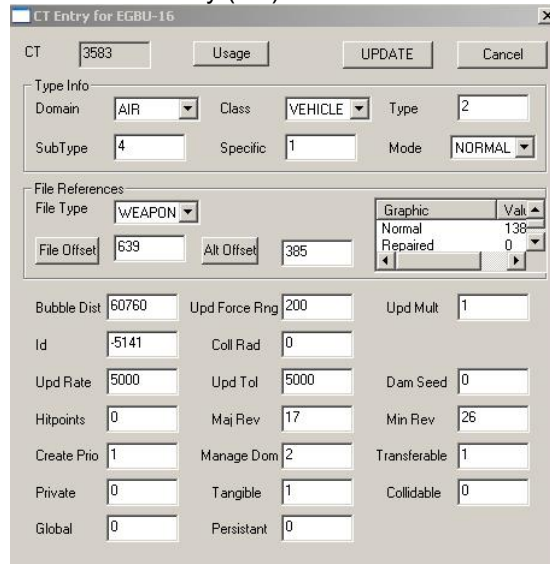
Sim weapons data entry (SWD)



Sim Weapon Data dialog box for EGB16:

- Weapon: EGB16
- Air/Ground: Ground Weap
- Drag: 0.165
- X Eject: 0
- Avionics: Dumb Bombs
- Weight: 300
- Y Eject: 0
- Missile Ptr: 0
- Area: 1
- Z Eject: 0
- WType: GBU
- Flags: 1

Class Table entry (CT)



CT Entry for EGBU-16 dialog box:

- CT: 3583
- Usage: [button]
- UPDATE: [button]
- Cancel: [button]
- Type Info:
 - Domain: AIR
 - Class: VEHICLE
 - Type: 2
 - SubType: 4
 - Specific: 1
 - Mode: NORMAL
- File References:
 - File Type: WEAPON
 - File Offset: 639
 - Alt Offset: 385
 - Graphic: Normal (138)
 - Repaired: 0
- Parameters:
 - Bubble Dist: 60760
 - Upd Force Ring: 200
 - Upd Mult: 1
 - Id: -5141
 - Coll Rad: 0
 - Upd Rate: 5000
 - Upd Tol: 5000
 - Dam Seed: 0
 - Hitpoints: 0
 - Maj Rev: 17
 - Min Rev: 26
 - Create Prio: 1
 - Manage Dom: 2
 - Transferable: 1
 - Private: 0
 - Tangible: 1
 - Collidable: 0
 - Global: 0
 - Persistent: 0

Temporary files

This chapter lists the temporary files. The temporary files in the EFTP-data.zip are the files which might be replaced with newer ones in the near future. That means these files are not final.

The following files can be seen as temporary:

- sim\RADAR – ef2k.dat
- sim\VehDef – ef2000.veh
- sim\VehDef – Stormshad.veh
- sim\VehDef – vehicles.lst
- Sim\MISDATA – bvraam.dat
- Storm Shadow_151_SWD.f4e
- Storm Shadow_235_WCD.f4e
- EF-radar_128_RCD.f4e

Notes:

- 1.) The ef2k.dat includes Eurofighter radar specific parameters. The file doesn't work yet as some tests has still to be conducted and the file must be optimised. To get the files working it is necessary to associate the file to the Eurofighter Typhoon's radar entry (EF-radar_128_RCD.f4e). The value 128 must be entered in the 128 RCD entry field "Data Index".
- 2.) The METEOR's dat file works so far, but I want to optimise the DLZ. That requires work on the BVRAAM.dat and some additional tests.
- 3.) The impact of the veh-files has still not be confirmed. It is necessary to conduct additional trials. They cause no problems so far. If there're changes it might be necessary to suit the vehicles.lst
- 4.) I will conduct additional trials for the Storm Shadow missile and might incorporate some further changes as well. The Storm Shadow associated files above might be affected. Maybe its CT entry as well