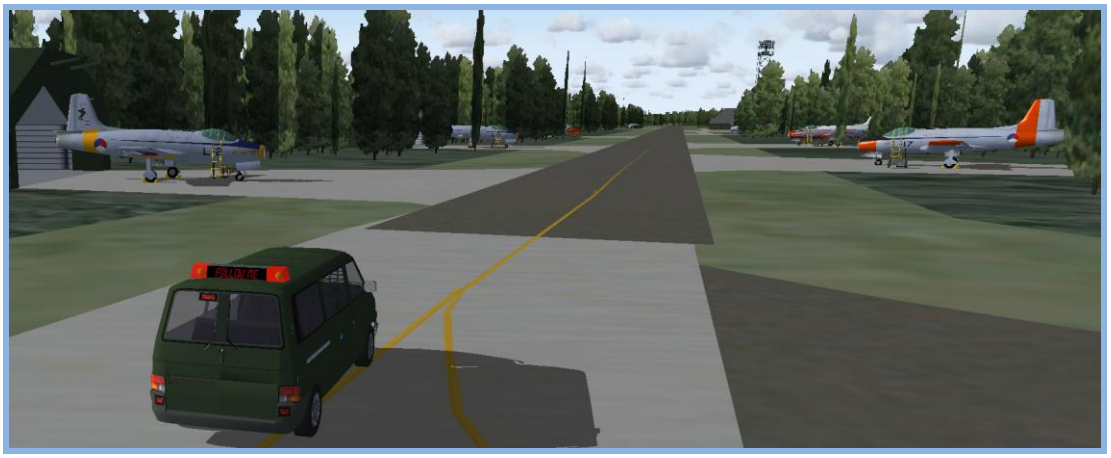
The Fokker S-14 Mach-trainer for FS9,FSX and Prepar3D



Fokker S-14 at Twente airforce base

History

The Fokker S-14 Mach-trainer was the first purpose designed and built side by side jet trainer. First flight was 19 may 1951. The aircraft was always praised for its special performance as a trainer aircraft whereby the side by side seat configuration was a great help to enable optimum communications between instructor and student pilot. Initially the aircraft was equipped with a Rolls Royce Derwent jet engine delivering some 3,600 lbf (16.0 kN) of thrust. To improve the performance even further the engine was replaced with the Rolls Royce Nene Mk3 jet engine delivering some 5,100 lbf (22.7 kN) of thrust. Planned license production in Brasil and with Fairchild in the USA was envisaged however these plans evaporated due to political changes in Brasil while Fairchild abandoned its production plans. During a demonstration flight in 1955 in the United States of America aircraft registration L-4 crashed due to unknown reasons taking the live of the Fokker test pilot Gerben Sonderman. Overtaken by the Lockheed T-33 and the Fouga Magister only 20 aircraft were build and used by the Royal Netherlands Air Force from 1955 till 1967. The aircraft were initially stationed at the Twente Airforce base and operated by the RNLAF Fighter Pilot School. Later they were stationed at the airforce basis of Soesterberg, Ypenburg and Woensdrecht.

Fokker S-14 L-11 at Soesterberg airforce base

Today still 3 aircraft exist: The prototype with PH-XIV, formally owned by the National Lucht – en Ruimtevaartlabratorium, now on display at the Aviodrome museum at Lelystad airport in The Netherlands and, RNLAF Registration L-11 at the National Military Museum at the former Soesterberg RNLAF Airforce Base and RNLAF Registration L-17 currently undergoing restoration for static display at the KLu Historical Flight at Gilze-Rijen Airforce base.

Fokker S-14 L-17

The Fokker S-14 project was first setup by David Wooster. This latest version is a complete update of the original Fokker S-14, presented in the [fokker_s-14_machtrainer.zip file], and accomplished by a team consisting of David Wooster, Jaap de Baare, Hans Janssens and Emile Lancée and the support of various Flight Simulator Forum members. Unfortunately not too much detail is available for the production fightdeck configuration beside some pictures and drawings, so with this limited information the flightdeck 2D presentation was setup to our best knowledge. The VC cockpit was setup using the available drawings and pictures from the Prototype. Most pictures available to us for the fightdeck main instrument board give details of the prototype aircraft PH-XIV (K-1) and differ as the prototype was later used and intensively modified as a flight test platform by the National Aerospace Laboratory (NLR) of The Netherlands. For those who like to add the aircraft as an AI aircraft there is a complete new AI aircraft file incorporated including a traffic file and an amendment to the NL2000 scenery package. The AI aircraft has an animated canopy, external battery car and landing lights operating during flight.

The flightdeck configurations covered are:

1. The NLR prototype configuration

NLR VC cockpit

NLR 2D flightdeck for triple monitor display (optional)

NLR 2D flightdeck panoramic single monitor display (standard)

2. The Prototype K-1 and RNLAF configuration

RNLAF VC cockpit

RNLAF 2D flightdeck for triple monitor display (optional)

RNLAF 2D flightdeck panoramic single monitor display (standard)

Installation

The Fokker S-14 Mach-trainer will work in FSX and FS9. Prepar3D did not show any problems however no in depth testing has been performed on other simulators.

The applicable files have been places in their respective files folders in the downloaded zip file so you as a user only need to copy the content in the respective folders of your FS9 or FSX directories.

Aircraft flyable and AI:

1. **For those who downloaded the FS9 aircraft**:

The zip packages available on the download site are:

FS9_AI_Fokker_S-14_Mach-trainer	zip	29.275.769
FS9_Fokker_S-14_Machtrainer_RNLAF_L-8	zip	30.249.500
FS9_Fokker_S-14_Machtrainer_RNLAF_L-3	zip	30.148.173
FS9_Fokker_S-14_Machtrainer_RNLAF_L-2	zip	30.130.728
FS9_Fokker_S-14_Machtrainer_RNLAF_L-17	zip	30.195.247
FS9_Fokker_S-14_Machtrainer_RNLAF_L-11	zip	30.005.672
FS9_Fokker_S-14_Machtrainer_RNLAF_L-10	zip	30.320.964
FS9_Fokker_S-14_Machtrainer_RNLAF_L-1_demo	zip	28.901.290
FS9_Fokker_S-14_Machtrainer_RNLAF_L-1	zip	30.019.476
FS9_Fokker_S-14_Machtrainer_Proto	zip	49.611.513

Copy the unzipped aircraft directory(s) in “Your Flight Simulator 9 directory”, being [Aircraft] and [Effects], in the downloaded zipfile, to your main FS 9 directory. The content of the aircraft directory in the “Your Flight Simulator 9 directory” is build up similar to your main FS 9 directory. For more information consult the attached detailed diagram in the back of this document for a graphical display of the file buildup.

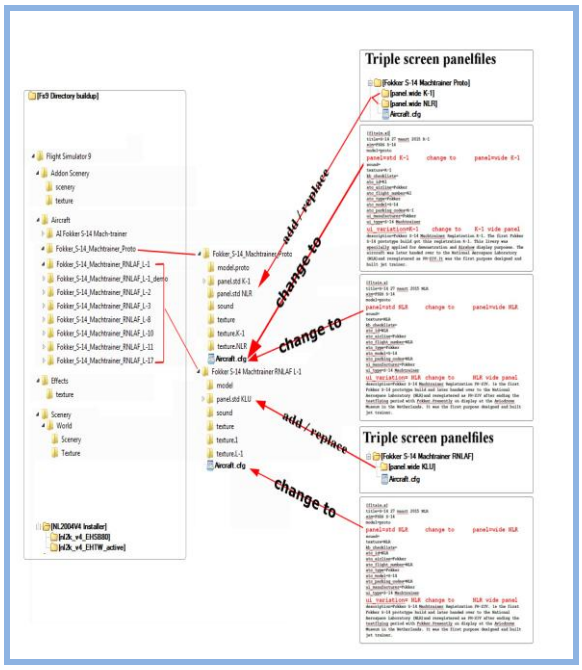
1a. For those who downloaded the FSX aircraft:

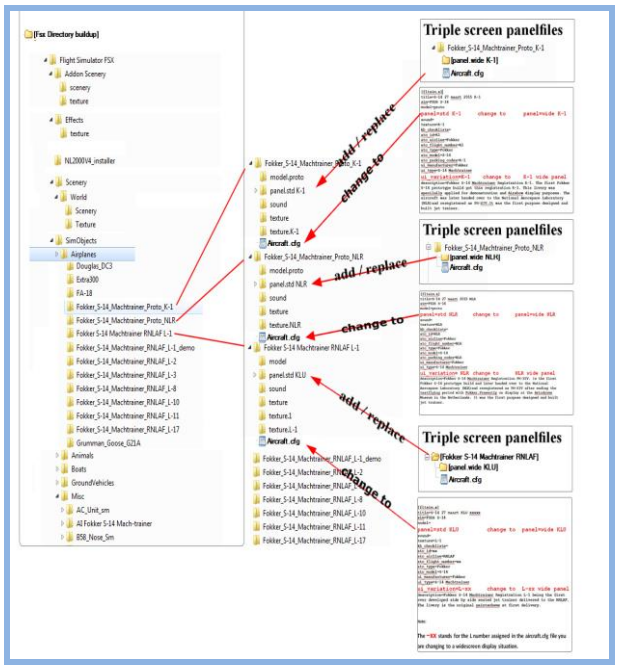
The zip packages available on the download site are:

FSX_Fokker_S-14_AI_Aircraft_and_traffic	zip	28.838.976
FSX_Fokker_S-14_Machtrainer_RNLAF_L-8	zip	63.222.501
FSX_Fokker_S-14_Machtrainer_RNLAF_L-3	zip	62.516.746
FSX_Fokker_S-14_Machtrainer_RNLAF_L-2	zip	62.536.680
FSX_Fokker_S-14_Machtrainer_RNLAF_L-17	zip	62.799.019
FSX_Fokker_S-14_Machtrainer_RNLAF_L-11	zip	64.661.251
FSX_Fokker_S-14_Machtrainer_RNLAF_L-10	zip	65.263.233
FSX_Fokker_S-14_Machtrainer_RNLAF_L-1_demo	zip	67.062.388
FSX_Fokker_S-14_Machtrainer_RNLAF_L-1	zip	62.335.882
FSX_Fokker_S-14_Machtrainer_Proto_NLR	zip	65.287.757
FSX_Fokker_S-14_Machtrainer_Proto_K-1	zip	62.932.505

Copy the unzipped aircraft directorie(s) in “Your Flight Simulator X directory”, being [Effects] and [SimObjects], in the downloaded zipfile, to your main FSX directory. The content of the aircraft directory in the “Your Flight Simulator X directory” is build up similar to your main FSX directory. For more information consult the attached detailed diagram in the back of this document for a graphical display of the file buildup.

The above 1a and 1b actions cover the installation of the Flyable aircraft and Effects files.





Larger images are presented at the end of this document.

1b. For those who downloaded the "AI_Fokker_S-14_Mach-trainer.zip":

This zip package on the download site covers the AI aircraft and Traffic files.

The traffic files work best in combination with the NL2000 freeware scenery. The traffic files will show Fokker S14 traffic at the Twente and Soesterberg airforce base. For people that have the NL-2000 scenery installed amended files for both the "active" Twente and Soesterberg Airforce base are included to show the Fokker S-14 at the dispersals. Installation of these files to be done in the NL2004V4 Installer or location where you as a user placed the NL2000 scenery

The NL2000 scenery files:
The enclosed files modify the basic NL2000 scenery applicable for the Twente Airforce base and Soesterberg Airforce base. Copy the [nl2k_v4_EHSB80] and [nl2k_v4_EHTW_active] directories to your NL2004 Installer directory. Before overwriting safe your original file. Overwrite where asked for.

Note 2: **Flightdeck triple monitor presentation**

For people that use triple monitors to present the complete aircraft and scenery there is an option available to show the 2D flightdeck presentation over all three monitors. The downloaded zip file contains a separate folder “Triple Monitors 2D flightdeck” that contains all required information.

Simply amend the installed [Fokker S-14 Machtrainer Proto] and [Fokker S-14 Machtrainer RNLAF aircraft] directories with the downloaded [panel.wide K-1], [panel.wide NLR] and [panel.wide KLU] directories. And on top of that amend the applicable aircraft.cfg files with the directory reference to the wide panel files in the respective both [Fokker S-14 Machtrainer Proto K1 and NLR] directory and the chosen [Fokker S-14 Machtrainer RNLAF L1 thru L17] directory. For more information consult the attached detailed diagram in the back of this document for a graphical display of the file buildup and an overview of what changes have to be made to what specific file.

The Fokker S-14 Flightsimulator Features:

1. Retractable landing lights which operate by the CTRL L key. A known feature with the landinglights is that in some cases the lights will illuminate, however the light housing will not swing down from the wings. The solution to this is to cycle though the different Views (“S”) command and this will restore proper operation of the landinglights. This can happen when switching from one to the other aircraft type and back again.
2. The aircraft can be operated with a single Pilot or with an Instructor and a Student. Simply add or subtract the weight of the CoPilot (210 Pounds) in the Aircraft Fuel and Payload / Change Payload / Payload Settings Table.
3. The prototype registration K-1 and PH- XIV aircraft can be flown with an External Pod under the fuselage. Simply add or subtract the weight of the External Pod (200 Pounds) in the Aircraft Fuel and Payload / Change Payload / Payload Settings Table. The pod was developed as a gunpod and the aerodynamic model was flight tested. There has however never been a production model delivered.
4. Beside the external pod the prototype registration K-1 and PH- XIV aircraft can be flown with an External Sensor Boom fitted to the nose air intake central support as well. Simply add or subtract the weight of the Sensor Boom (25 Pounds) in the Aircraft Fuel and Payload / Change Payload / Payload Settings Table. The Sensor Boom was occasionally put on the prototype to ensure airspeed and attitude measurements were not disturbed by any fuselage influenced airflow.
5. The aircraft flightdeck can be configured for use with a single panoramic display or a combined widescreen setup with 3 displays operating as one. The 2D flightdeck presentation is available for both set ups. And a switching capability between pilots positions is provided for.
6. For details on the operation of different functions reference is made to the Operational Info paragraph.

Models

There are 2 different models of the Fokker S-14 Mach-trainer.

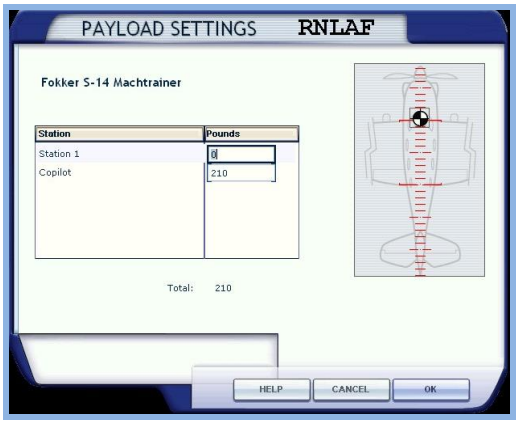
1. The Royal Netherlands Airforce model:
   a. Royal Netherlands Airforce (KLU) L-1 displaying the original texturing as delivered from the Fokker Factory.
   b. Royal Netherlands Airforce (KLU) L-1 demonstrator featuring additional Fokker logo's.
   c. Royal Netherlands Airforce (KLU) L-2 displaying an additional blue band over the fuselage and the taillogo for the Twente Baseflight.
   d. Royal Netherlands Airforce (KLU) L-3 displaying an additional blue band over the fuselage.
   e. Royal Netherlands Airforce (KLU) L-8 featuring a wide orange band over the front fuselage, wing and tail to improve visibility.
   f. Royal Netherlands Airforce (KLU) L-10 featuring orange and yellow bands over the fuselage, wing and tail to improve visibility. It is not known if the aircraft actually flew with this paintscheme. No pictures confirming this configuration were found.
   g. Royal Netherlands Airforce (KLU) L-11 featuring a wide orange band over the front fuselage, wing and tail to improve visibility. This aircraft is on display at the National Military Museum at the former Soesterberg RNLAF Airforce Base.
   h. Royal Netherlands Airforce (KLU) L-17 featuring a wide orange band over the front fuselage, wing and tail to improve visibility. This external paintscheme can be considered the standard scheme with which most aircraft flew until they were all decommissioned in 1967. This aircraft is undergoing restoration at the KLu Historical Flight at Gilze-Rijen Airforce base.

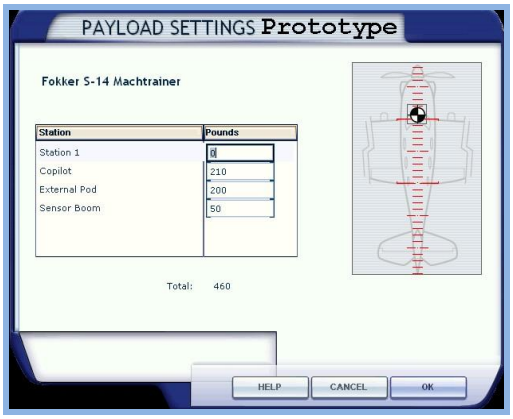
   Using the loadsheet the flightcrew can be amended to fly with an second officer in the RH seat.

2. The Prototype model:

   a. The Prototype K-1 (now PH- XIV) as painted by the Fokker factory for demonstration purposes and as displayed during the Paris Airshow. Using the loadsheet the aircraft can be equipped with a nose sensor boom or external pod. And the flightcrew can be amended to fly with an second officer in the RH seat.

   b. The Prototype PH- XIV (was the K-1 prototype) as painted for the National Aerospace Laboratory (NLR). Using the loadsheet the aircraft can be equipped with a nose sensor boom or external pod. And the flightcrew can be amended to fly with an second officer in the RH seat.





Operational info

Speeds

Airspeed limitations I.A.S.		
Airspeed not to be exceeded:	475 KTS	
Mach number not to be exceeded:	0.83	
Flap operation and flaps down:	140 KTS	
U/C operation and U/C down:	140 KTS	
Take off speeds:	At Typical service loads the nose can be raised at about 80 knots and the aircraft flown off at 100 knots.	
Stall speeds:	Undercarriage and flaps up	85 to 95 KTS
	Undercarriage and flaps down	75 to 85 KTS
Landing speed:	Initial approach	130 knots
Airfield boundary crossed	100 knots	

FS9 and FSX operational issues

Due to the large file size and very detailed texturing the aircraft will have an effect on the framerates.

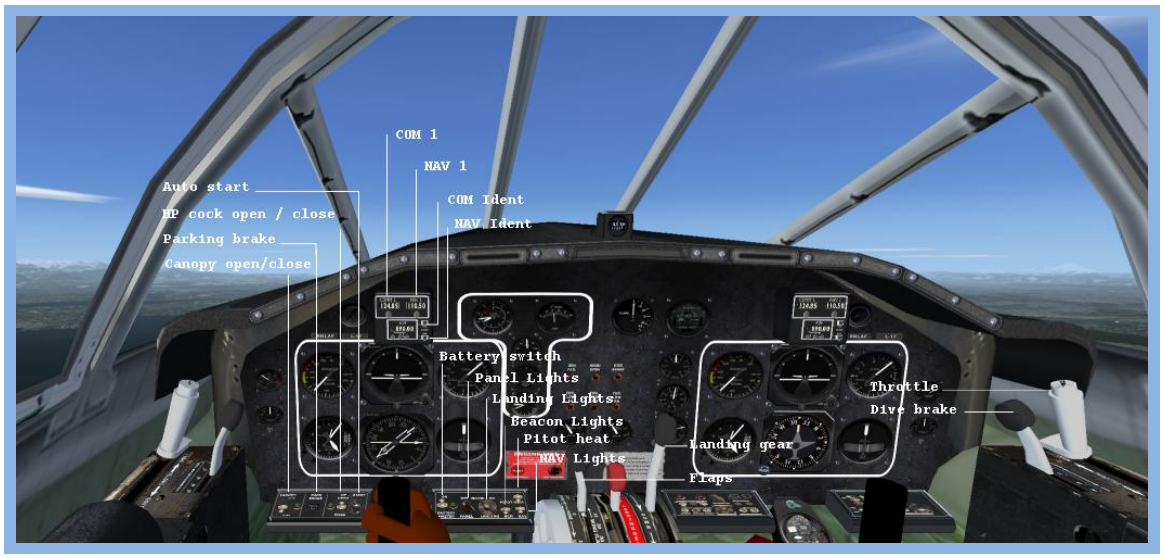
When selecting and loading the aircraft this will take some time. Nothing wrong with your computer, simply a heavy workload to start the aircraft.

FSX file buildup

For the more experienced user the files for the individual FSX aircraft are build up following the common file principle for the texture files. This allows you as a user to combine the aircraft directories under one directory. Where there is commonality in the textures for a particular series of aircraft model the texture file will have a “common textures for.txt” file indication with what serial number aircraft the commonality exists.

Flightdeck

The assigned functions to various buttons and switches is similar for both models. Positioning of the switches is identical in the VC and 2D cockpit layout.



Larger images are presented at the end of this document.

LEGAL

These files are freeware and must remain so. The authors retain the copyright.
These files are released without warranty of any kind.
By downloading these files you accept full responsibility for any consequences resulting from their use. The authors accept no responsibility whatsoever.

CREDITS

Aircraft model, flight model, panels, gauges and textures by David Wooster, Jaap de Baare, Hans Janssens and Emile Lancee.
A special thanks goes to the Lelystad Aviodrome and Royal Netherlands Airforce Historical Flight museum for their support in finding as much detail as possible and allowing us to take detailed pictures supporting the designs.

SUPPORT

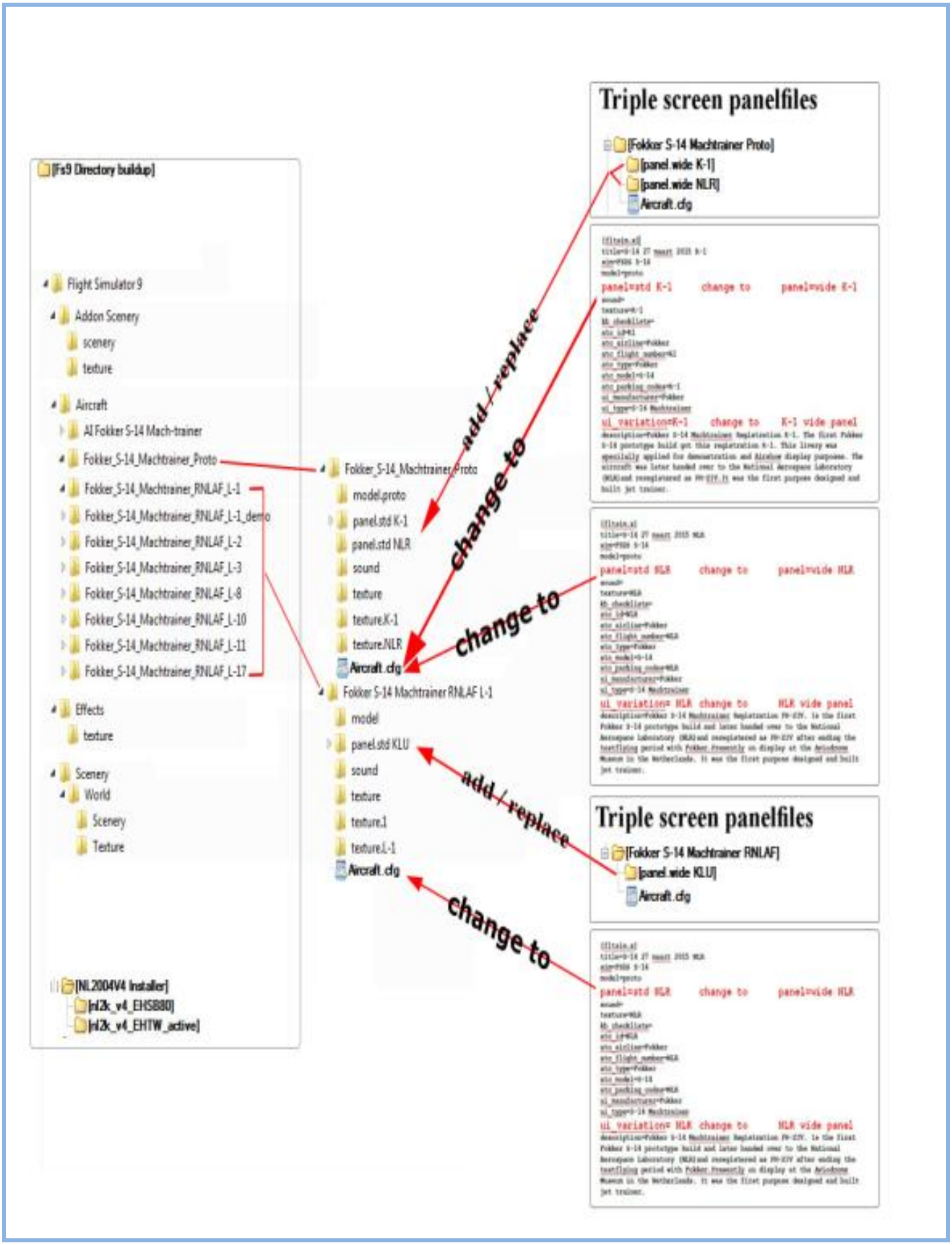
Thank you for downloading the Fokker S-14 Mach-trainer we hope you enjoy it.

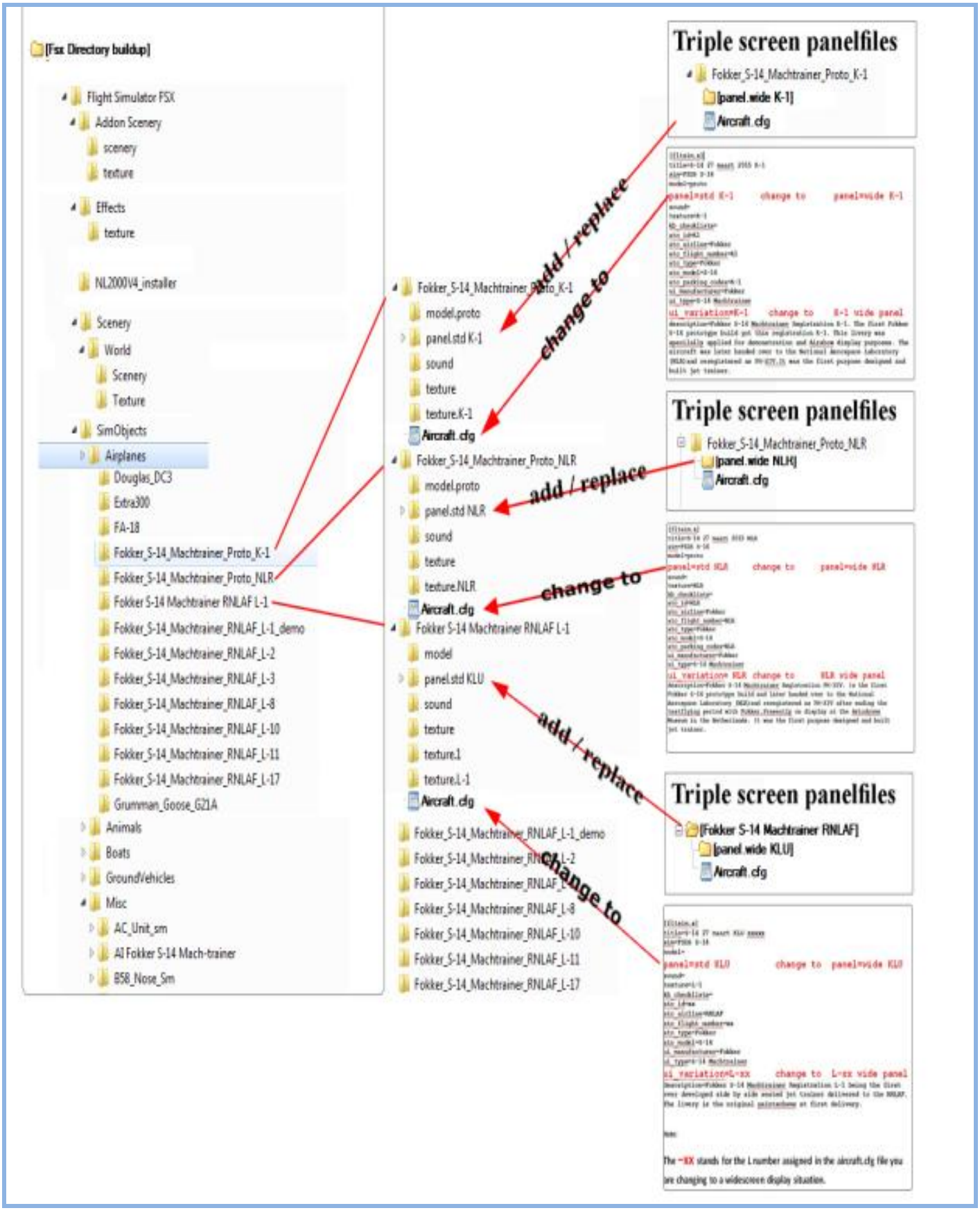
E-mail David Wooster for model related questions at: this4david2@gmail.com or
E-mail Emile Lancée for texture or flightdeck related questions at: lanceeemile@gmail.com

COM 1
NAV 1
COM Ident
NAV Ident
Auto start
HP cock open / close
Parking brake
Canopy open/close
Battery switch
Panel Lights
Landing Lights
Beacon Lights
Pitot heat
NAV Lights
Flaps
Landing gear
Throttle
Dive brake

Switching from Capatain to Coplot side
GPS

Switching from Copilot to Captain side
GPS

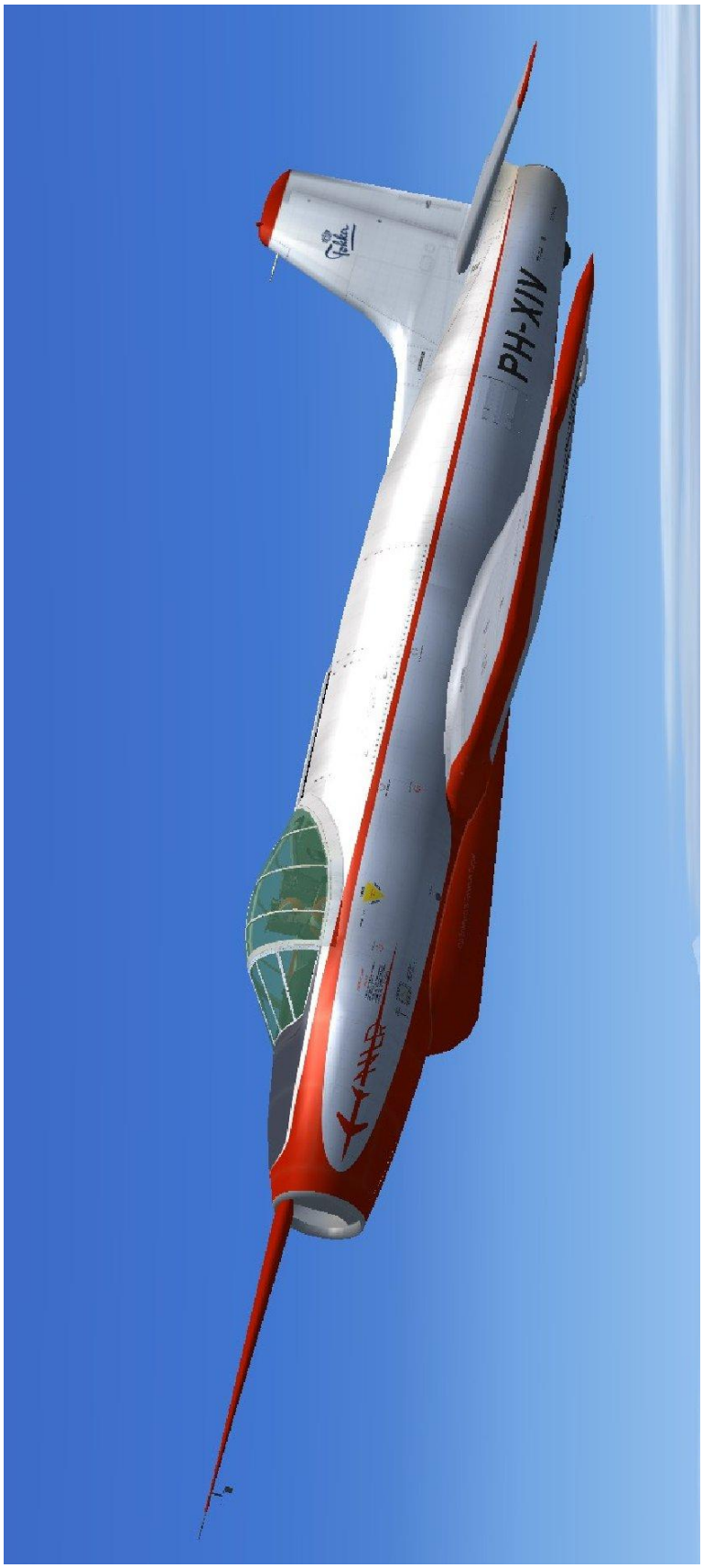
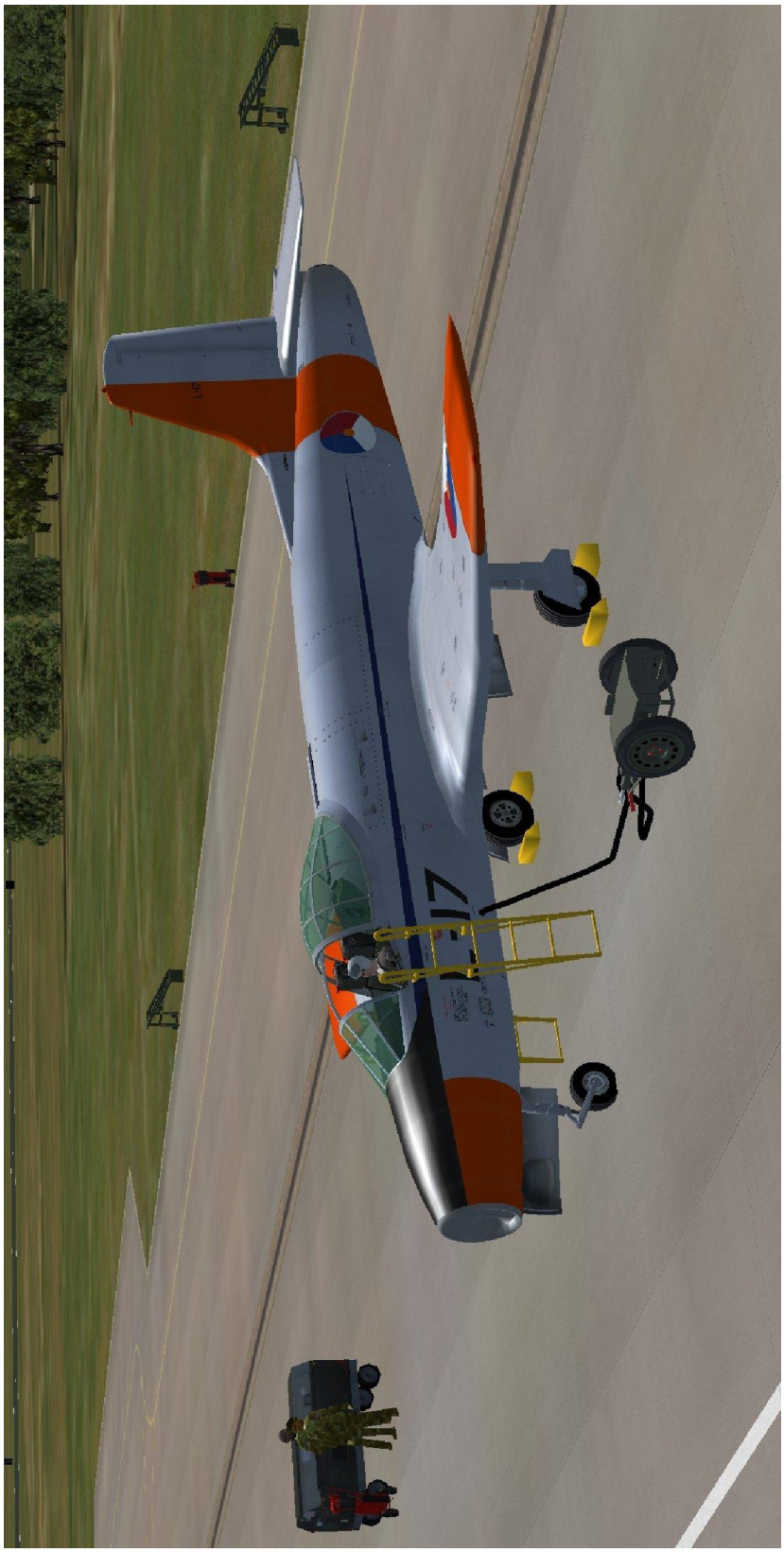

Triple screen panelfiles
[Fokker S-14 Machtrainer Proto]
[panel.wide K-1]
[panel.wide NLR]
Aircraft.cfg
panel=std K-1 change to panel=wide K-1
ui_variation=K-1 change to K-1 wide panel
panel=std NLR change to panel=wide NLR
ui_variation= NLR change to NLR wide panel
add / replace
change to
change to
[Fs9 Directory buildup]
Flight Simulator 9
Addon Scenery
scenery
texture
Aircraft
AI Fokker S-14 Mach-trainer
Fokker_S-14_Machtrainer_Proto
Fokker_S-14_Machtrainer_RNLAF_L-1
Fokker_S-14_Machtrainer_RNLAF_L-1_demo
Fokker_S-14_Machtrainer_RNLAF_L-2
Fokker_S-14_Machtrainer_RNLAF_L-3
Fokker_S-14_Machtrainer_RNLAF_L-8
Fokker_S-14_Machtrainer_RNLAF_L-10
Fokker_S-14_Machtrainer_RNLAF_L-11
Fokker_S-14_Machtrainer_RNLAF_L-17
Effects
texture
Scenery
World
Scenery
Texture
[NL2004V4 Installer]
[nlZk_v4_EHSB80]
[nlZk_v4_EHTW_active]
Fokker_S-14_Machtrainer_Proto
model.proto
panel.std K-1
panel.std NLR
sound
texture
texture.K-1
texture.NLR
Aircraft.cfg
Fokker S-14 Machtrainer RNLAF L-1
model
panel.std KLU
sound
texture
texture.1
texture.L-1
Aircraft.cfg
add / replace
change to
Triple screen panelfiles
[Fokker S-14 Machtrainer RNLAF]
[panel.wide KLU]
Aircraft.cfg
panel=std NLR change to panel=wide NLR
ui_variation= NLR change to NLR wide panel


[Fsx Directory buildup]
Flight Simulator FSX
Addon Scenery
scenery
texture
Effects
texture
NL2000V4_installer
Scenery
World
Scenery
Texture
SimObjects
Airplanes
Douglas_DC3
Extra300
FA-18
Fokker_S-14_Machtrainer_Proto_K-1
Fokker_S-14_Machtrainer_Proto_NLR
Fokker S-14 Machtrainer RNLAF L-1
Fokker_S-14_Machtrainer_RNLAF_L-1_demo
Fokker_S-14_Machtrainer_RNLAF_L-2
Fokker_S-14_Machtrainer_RNLAF_L-3
Fokker_S-14_Machtrainer_RNLAF_L-8
Fokker_S-14_Machtrainer_RNLAF_L-10
Fokker_S-14_Machtrainer_RNLAF_L-11
Fokker_S-14_Machtrainer_RNLAF_L-17
Grumman_Goose_G21A
Animals
Boats
GroundVehicles
Misc
AC_Unit_sm
AI Fokker S-14 Mach-trainer
B58_Nose_Sm
Fokker_S-14_Machtrainer_Proto_K-1
model.proto
panel.std K-1
sound
texture
texture.K-1
Aircraft.cfg
Fokker_S-14_Machtrainer_Proto_NLR
model.proto
panel.std NLR
sound
texture
texture.NLR
Aircraft.cfg
Fokker S-14 Machtrainer RNLAF L-1
model
panel.std KLU
sound
texture
texture.L-1
Aircraft.cfg
Fokker_S-14_Machtrainer_RNLAF_L-1_demo
Fokker_S-14_Machtrainer_RNLAF_L-2
Fokker_S-14_Machtrainer_RNLAF_L-3
Fokker_S-14_Machtrainer_RNLAF_L-8
Fokker_S-14_Machtrainer_RNLAF_L-10
Fokker_S-14_Machtrainer_RNLAF_L-11
Fokker_S-14_Machtrainer_RNLAF_L-17
add / replace
change to
add / replace
change to
add / replace
change to
Triple screen panelfiles
Fokker_S-14_Machtrainer_Proto_K-1
[panel.wide K-1]
Aircraft.cfg
panel=std K-1 change to panel=wide K-1
ui_variation=K-1 change to K-1 wide panel
Triple screen panelfiles
Fokker_S-14_Machtrainer_Proto_NLR
[panel.wide NLR]
Aircraft.cfg
panel=std NLR change to panel=wide NLR
ui_variation= NLR change to NLR wide panel
Triple screen panelfiles
[Fokker S-14 Machtrainer RNLAF]
[panel.wide KLU]
Aircraft.cfg
panel=std KLU change to panel=wide KLU
ui_variation=L-xx change to L-xx wide panel
The -XX stands for the L number assigned in the aircraft.cfg file you are changing to a widescreen display situation.

Fokker S-14 Mach-trainer prototype

Fokker S-14 Mach-trainer prototype

Operated by the National Aerospace Laboratory (NLR) of The Netherlands



Royal Netherlands Airforce L-17