



ECCN 9E990

# **Aeronautical**

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## **Technical Bulletin**

**TB No. AA-11093**

**No Revision**

**March 6 2012**

**SUBJECT:**

**Bell Helicopter Vibration Monitor (BHVM) Kit**

P/N 212-262-001 / 412-262-001 / 412-262-002

**Bell Helicopter Vibration Monitor (BHVM) Kit  
with SmartCycle+**

P/N 212-262-002 / 412-262-003 / 412-262-004

**MODELS AFFECTED:**

Bell Helicopter Textron model 412 and 412EP  
helicopters with subject BHVM Kit installed in  
accordance with FAA STC SR09373RC-D.

Bell Helicopter Textron model 212 helicopters with  
subject BHVM Kit installed in accordance with  
Transport Canada STC SH09-36 or FAA STC  
SR02818NY.

**COMPLIANCE:**

At owner option. Aeronautical Accessories  
recommends the incorporation of this technical bulletin  
to upgrade operator's BHVM kit to the current software  
configuration, V4.1 SP4A.

**DESCRIPTION:**

This Technical Bulletin is being issued to allow owner to  
upgrade their MSPU to the current software  
configuration, V4.1 SP4A.

**MANPOWER:**

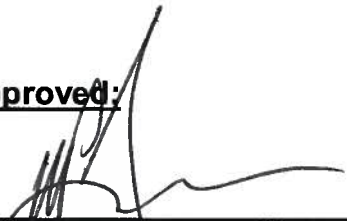
Approximately 2.0 man-hours.

(Manhours are based on hands-on time and may vary  
with personnel or facilities available).

IF OWNERSHIP OF AIRCRAFT HAS CHANGED, PLEASE FORWARD THIS BULLETIN TO NEW OWNER

**LOG OF REVISIONS**

Date	Revision	Description	Affected Pages
03/06/12	NR	Original Release	All

**Approved:**

Engineering



Airworthiness

8/7/12

Date

3-8-12

Date

**1.0 MATERIALS REQUIRED**

PC-GBS release 4.1 SP4A

Label P/N 1209-3196-PF:

1. Material Type: Brady Label THT-17-425-3
2. Text Color / Font Size: Black / 9 point
3. Background Color: White
4. Dimensions: Per Figure 1

Label P/N 1209-3198-PF:

1. Material Type: Brady Label THT-166-424-2
2. Text Color / Font Size: Black / 9 point
3. Background Color: White
4. Dimensions: Per Figure 2

**NOTE**

In lieu of making labels, the following Upgrade Kit is available from Aeronautical Accessories.

**TABLE 1. PARTS LIST,  
412-262-060 UPGRADE KIT**

<u>Qty</u>	<u>Part Number</u>	<u>Description</u>	<u>Figure</u>
1	1209-3196-PF	Label	1
1	1209-3198-PF	Label	2

**2.0 WEIGHT AND BALANCE**

Not affected

**3.0 PUBLICATIONS AFFECTED**

Model 212: Instructions for Continued Airworthiness, report AA-08032

Model 412, 412EP: Instructions for Continued Airworthiness, report AA-04049

**4.0 ADDITIONAL INFORMATION**

Any questions regarding this bulletin should be addressed to:

Aeronautical Accessories Bell Helicopter Piney Flats

Attn: Customer Support

P.O. Box 3689

Bristol, TN 37625-3689

Email: [techsupport@aero-access.com](mailto:techsupport@aero-access.com)

**5.0 ACCOMPLISHMENT INSTRUCTIONS****5.1 V4.1 SP4A SOFTWARE UPDATE – DOWNLOAD INSTRUCTIONS**

1. Go to Bell Helicopter Vibration Monitor website:  
<https://bhti-imds.iac-online.com/index.asp>.  
If customer does not have a username and password, contact Bell Helicopter Product Support Engineering at [psemedium@bellhelicopter.textron.com](mailto:psemedium@bellhelicopter.textron.com)
2. Download PC-GBS release 4.1 SP4A from the website, per Installation Instructions 1209-0105-SID, revision G or later approved revision. (Ref. Appendix A.)

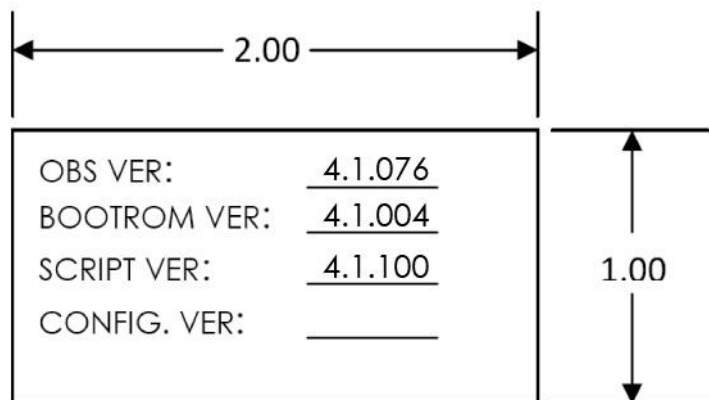
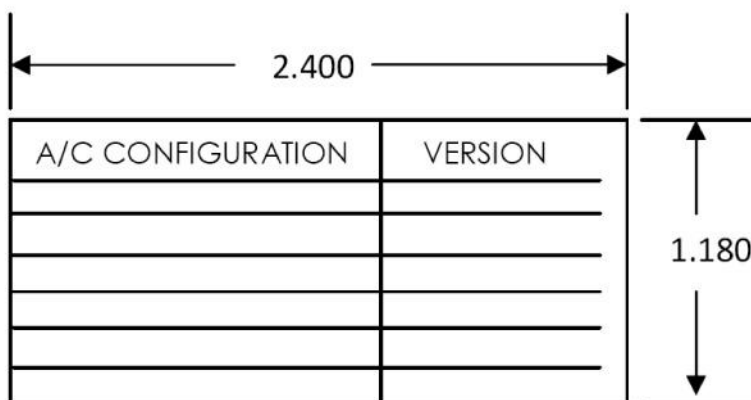
**NOTE**

The 4.1 SP4A CDimage.zip option is recommended for ease of installation since this is a CD-like format.

3. Follow the installation instructions to install PC-GBS release 4.1 SP4A on the MSPU.

**5.2 MSPU LABELING**

1. Install a new Label (1209-3196-PF) on MSPU unit per 1209-0105-SID installation instructions.
2. Install a new Label (1209-3198-PF) on MSPU unit per 1209-0105-SID installation instructions if none installed; update information on an existing Label (1209-3198-PF) if installed.
3. Installation complete.

**FIGURE 1. LABEL, P/N 1209-3196-PF****FIGURE 2. LABEL, P/N 1209-3198-PF**

**APPENDIX A**

Document No. 1209-0105-SID, PC-GBS 4.1 Service Pack 4A Installation Instructions



Document No. 1209-0105-SID

**Installation Instructions**  
**For**  
**PC-GBS 4 1 Service Pack 4A**

Revision G

Date: 1 March 2012

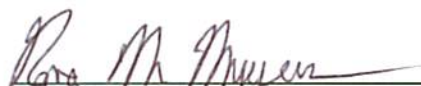
**Prepared by**  
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Date: 3-2-12

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## Revision History

Revision Number	Date	Prepared By	Description
A	17 March 2009		Release 4.1 SP3
B	4 June 2009		Based on Review. Changed Label Part number typo and added the 1209-3196-PF label for clarification. (Page 30) Added NOTE to Sections 1, 2.4, 3.4 and revised page 33 to clarify examples
C	17 August 2009		Added warning at the beginning of section 5 to clarify the installation of many units by one PC-GBS upgrade.
D	5 December 2011	Kevin Tolu	Revised document for 4.1 SP4 release
E	20 December 2011	Nancy Louis	Made revisions based on review.
F	6 January 2012	Nancy Louis	Added requested changes.
G	1 March 2012	Nancy Louis	Revised Data Mirroring Mode – Commanded as requested.



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## 1. INTRODUCTION

### NOTE

This instruction outlines the information necessary to update both the ground based software and the onboard software. It may also be used for future minor upgrades of the aircraft configuration file 412-HG\_43.CSIF, 412-LG\_43.CSIF & 212\_41.CSIF. When installing the aircraft configuration file the user is reminded to use the latest version available and to update the software version label affixed to the side of the box as detailed in section 4.4 of this document.

PC-GBS release 4.1 SP4A is provided as a CD image. The CD image contains the PC-GBS, OBS, and the 412-HG 412-LG and 212 aircraft configurations. The following is the file name.

- 4.1\_SP4A\_CDImage.zip

Release 4.1 SP4A can be installed on top of Release 4.1 SP3A or as a new installation. Release 4.1 SP3A does not need to be uninstalled. It is imperative that all components are updated, and that both facility and portable PC-GBS are updated.

### Caution

***Flight data on both the facility and portable must be imported. If not, flight data on both the facility and portable will be out of sync.***

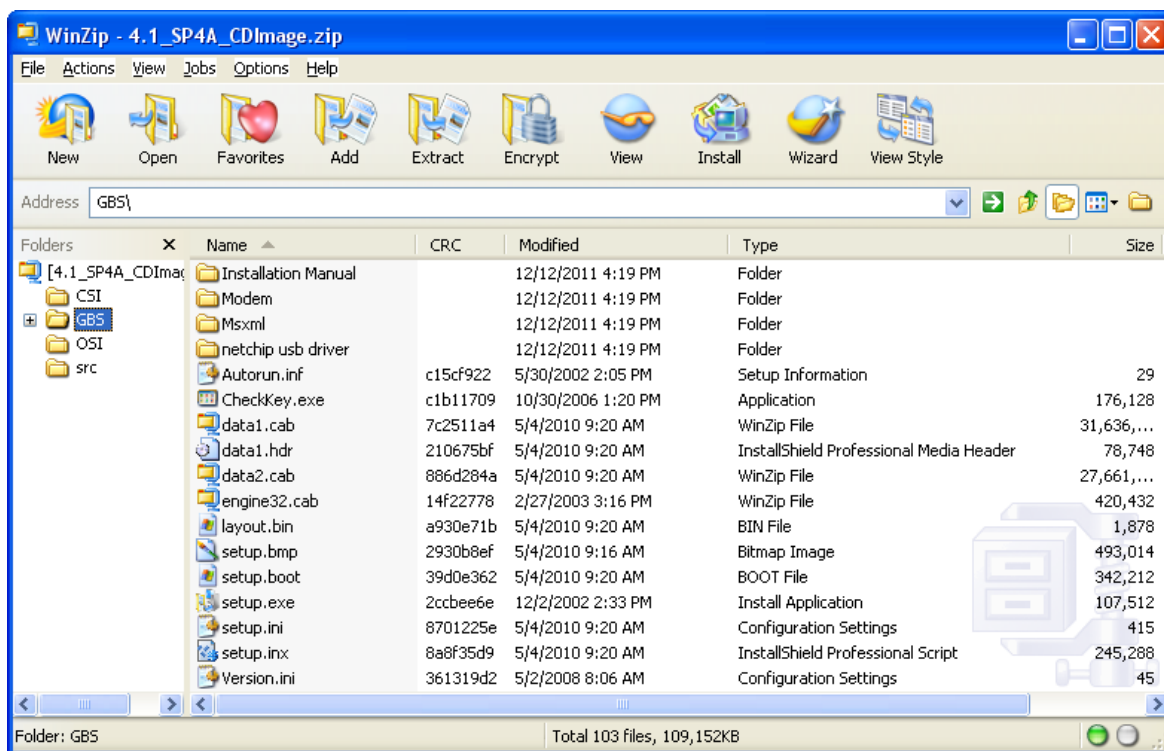
## 2. PC Installation Instructions Using the CD Image

The general procedure is as follows:

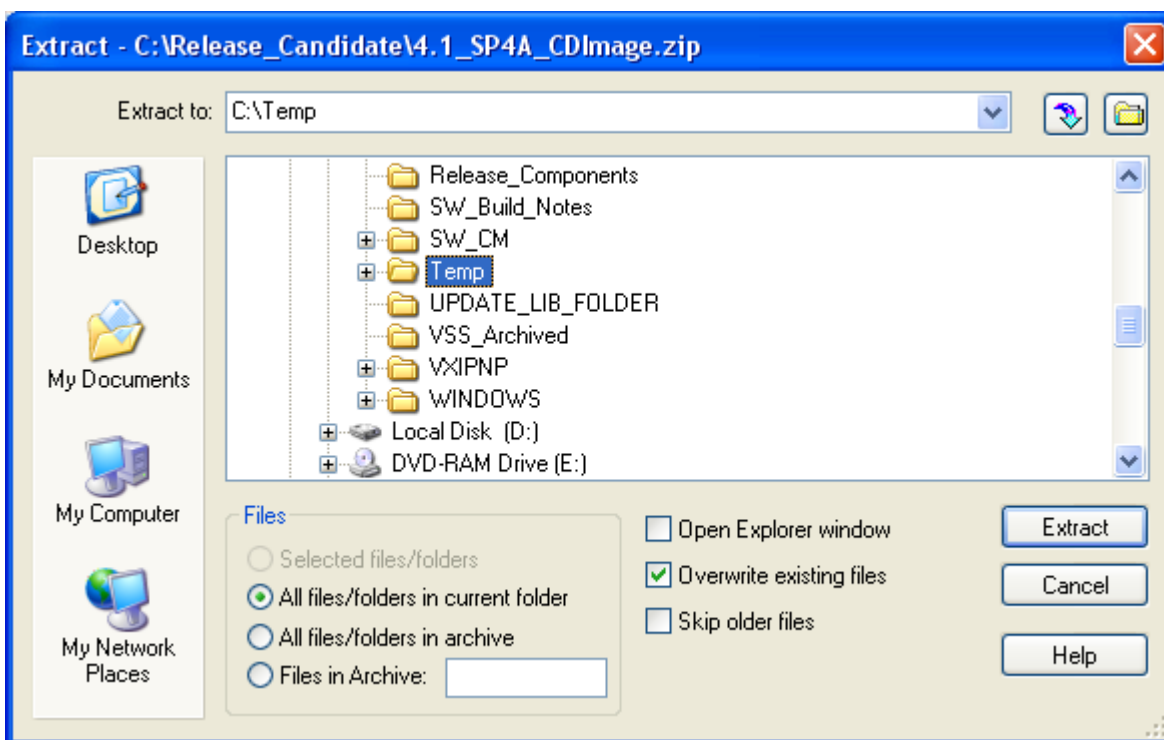
1. Download the CD image
2. Unzip the CD image
3. Install the PC-GBS from the CD image
4. Install the OSIF file from the CD image
5. Install each CSIF file from the CD image
6. Re-import existing flight data
7. Remove Upload .idx Files
8. Update the MSPU with both the OBS and an aircraft configuration

### 2.1 Unzip the CD Image

4.1\_SP4A\_CDImage.zip is an archive file and must be uncompressed. Create a temporary directory in which to extract the CD image using WinZip or any other available program that will process \*.zip files. WinZip is available from <http://www.winzip.com/>.



Extract the CD image into the temporary directory that was previously created.



## 2.2 Install PC-GBS

Double click into the directory that you have created and Double click **Menu.exe**.

Name	File Version	Date Modified
CSI		12/12/2011 4:19 PM
GBS		12/12/2011 4:19 PM
OSI		12/12/2011 4:19 PM
src		12/12/2011 4:19 PM
Autorun.inf		3/22/2005 1:52 PM
Menu.exe	1.3.0.0	10/3/2008 1:49 PM
readme.txt		12/12/2011 4:05 PM

If you want to see part numbers and descriptions, select **Readme First**.



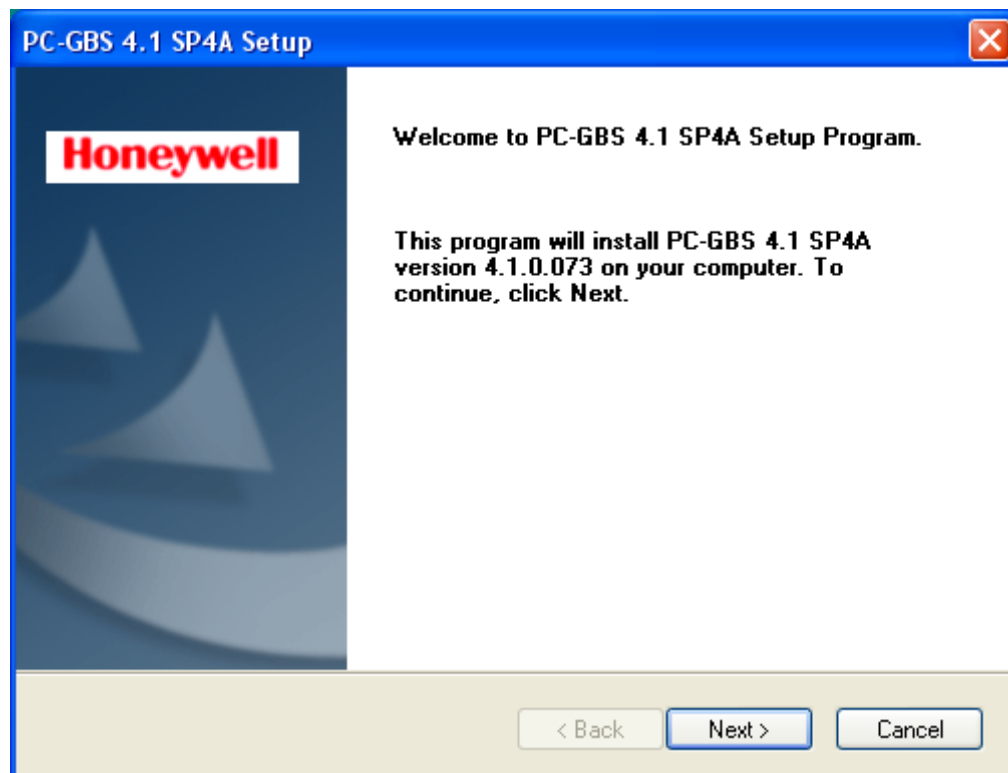
The readme file will look like this:

readme.txt - Notepad		
File Edit Format View Help		
Date 12/16/2011		
	PART NUMBER	DESCRIPTION
1.	1000-1000-SW-R414A	PC-GBS 4.1 SP4A Build 073
2.	1002-1000-SW-R410	PC-GBS 4.1 Installation Manual
3.	1001-1000-SW-R4176	OBS_4_1_076.osif
4.	1006-3001-SW-R4143	Bell 412-HG_43.CSIF
5.	1006-3002-SW-R4143	Bell 412-LG_43.CSIF
6.	1007-3016-SW-R4141	Bell 212_41.CSIF

To install the PC-GBS, select **Install PC-GBS Release 4.1 SP4A**.



Follow the PC-GBS Setup Program.

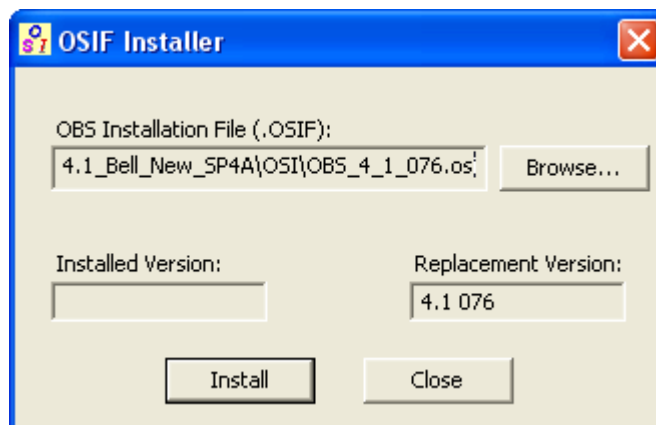


## 2.3 Install OBS

Select **Install OBS Release 4.1 SP4A**.



When prompted, browse into your previously created folder to **OBS\_4\_1\_076.osif** in the OSI directory of the CD image and click **Install**.



## 2.4 Install Aircraft Configurations

### NOTE

This instruction outlines the information necessary to update both the ground based software and the onboard software. It may also be used for future minor upgrades of the aircraft configuration file 412-HG\_43.CSIF, 412-LG\_43.CSIF & 212\_41.CSIF. When installing the aircraft configuration file the user is reminded to use the latest version available and to update the software version label affixed to the side of the box as detailed in section 3.4 of this document.



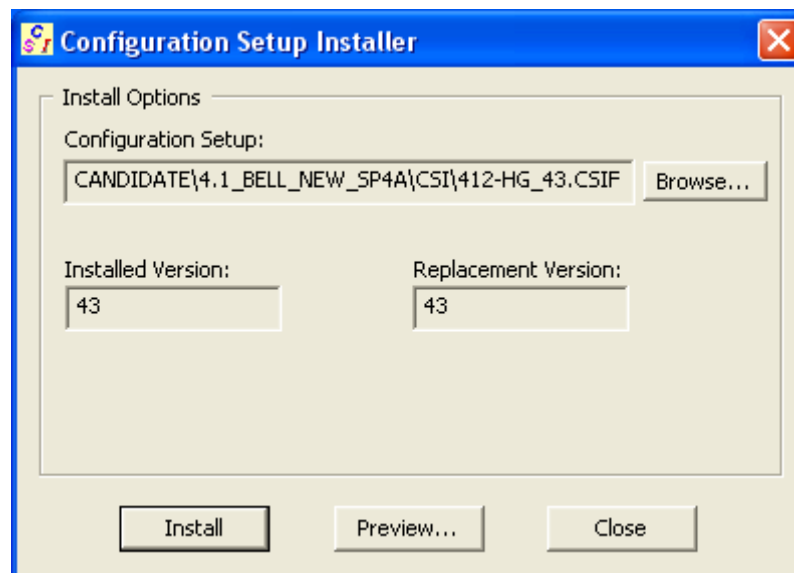
Select **Install Setup Configurations**.



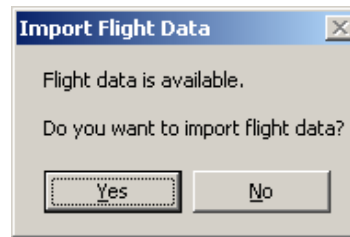
When prompted, browse your created folder to either **412-HG\_43.CSIF**, **412-LG\_43.CSIF** or **212\_41.CSIF** in the CSI directory on the CD image and click **Install**.

#### Note

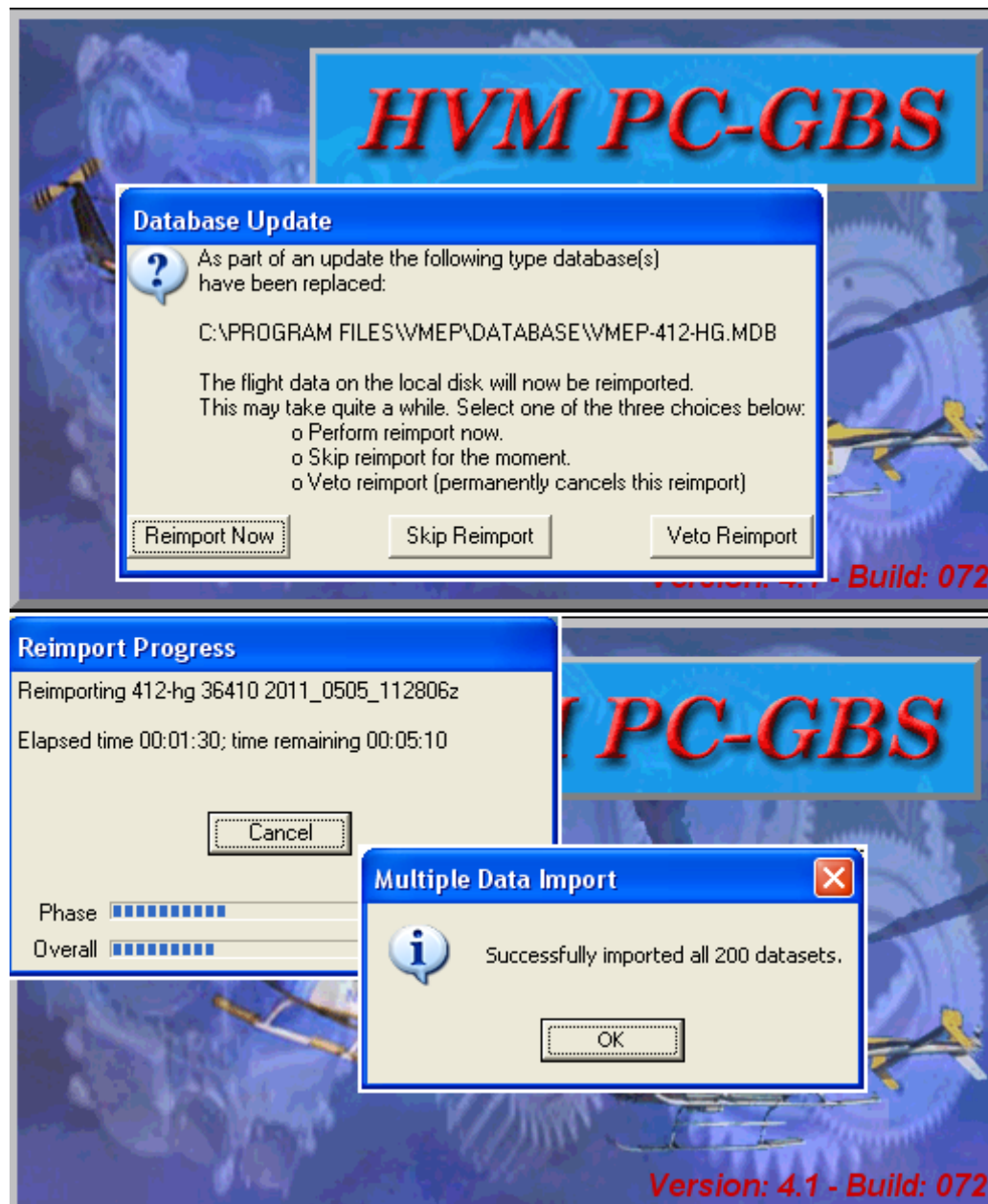
412-HG is for high gear aircraft and 412-LG is for low gear aircraft.



To re-import existing flight data, select **Yes**.



The next time the PC-GBS is executed, it will prompt the user to re-import existing flight data. Click on the **OK** button when importing flight data is complete.





Click **Exit** on the PC-Ground Based System installation page this complete the installation of PC-GBS 4.1 Service Pack 4A.



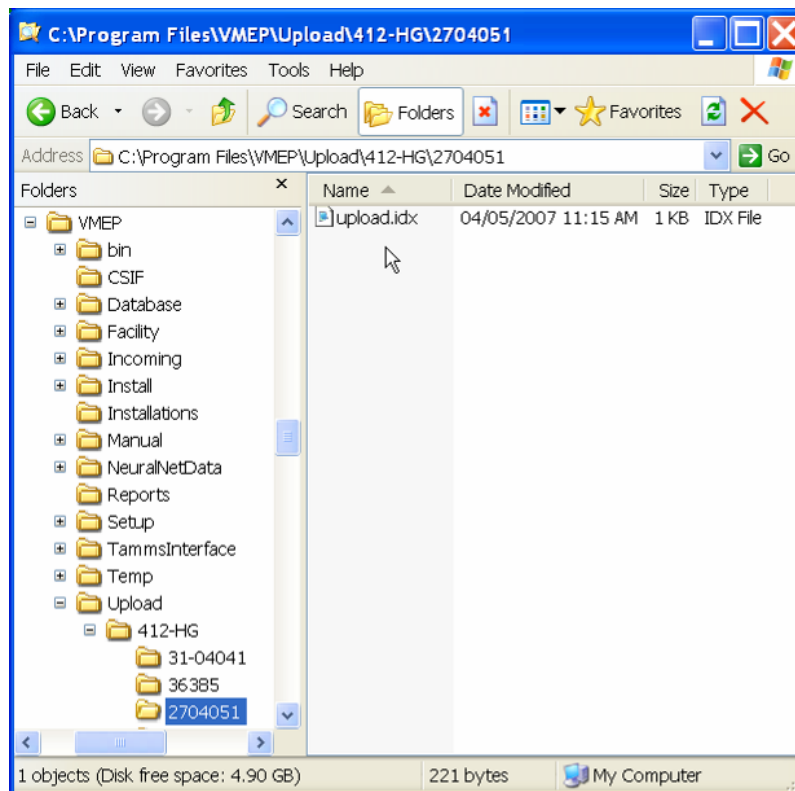
## 2.5 Removing the “upload.idx” files prior to communicating with the onboard system

PC-GBS will ensure only the appropriate files will be available for loading onto the onboard system. In the “c:\{Program Files\VMPE\Upload\412-HG\<tail no.>” directory resides a file called “upload.idx”. That file will be required to be removed for each aircraft tail number so that all of the files needed for the upgrade will be available for upload.

### NOTE

The tail number folder and “upload.idx” file will not be available if the portable computer has never communicated with the onboard system.

To remove these files, open Windows Explorer and navigate to directory shown in the figure below:



Remove the “upload.idx” file in each tail number folder residing under the “Upload\412-HG”, 412-LG or 212 folders.

### 3. OBS Installation Instructions

#### **WARNING!**

If you have completed the PC-GBS installation and you are upgrading multiple MSPU’s units then you must first perform section 2.5 on every unit **BEFORE** installing the OBS. Failure to do this may cause the unit to not be upgraded or worse may cause failure of the system and the units would have to be sent back to the factory for repair.

After the Portable PC-GBS, OBS, and aircraft configuration have been updated to 4.1 SP4A and the existing flight data on the PC has been re-imported, the next step is to download current data and upload the new OBS and aircraft setup files to the MSPU.

#### 3.1 Download current data from MSPU prior to uploading OBS and setup files

##### **NOTE:**

Downloading aircraft data prior to installing files onto the MSPU must be accomplished as any new data will be lost when the system is flushed.

For aircraft with USB download port in cockpit:

- Energize DC power bus on the aircraft and ensure that the MSPU has completely booted.
- Insert USB memory stick into USB port in pedestal.
- On cockpit control head (CCH) select mode = “XFR” and then press the “DO” button. This will ensure that you download all of the current data not previously downloaded and currently stored in the system’s onboard memory.
- When the “FIN” light on the CCH illuminates remove the USB memory stick from USB port.
- Import data from memory stick into PC-GBS.

For aircraft with the USB memory drive installed next to the MSPU and unit is active:

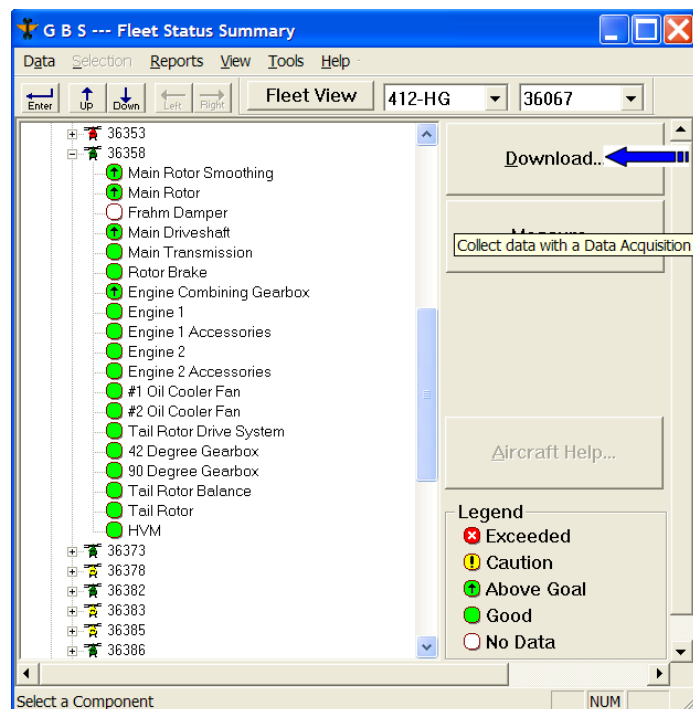
- With no power on the aircraft DC bus, remove the USB memory device from the drive case and insert into a PC that has PC-GBS installed and active.
- Follow the prompts and import the data into PC-GBS
- At completion of the import of data and after prompted that you are safe to remove the memory device from the PC, reinstall it back into the aircraft.

### 3.2 Upload the System and Aircraft Setup Files to the MSPU

Connect the laptop to the MSPU by Ethernet cable.

Run PC-GBS.

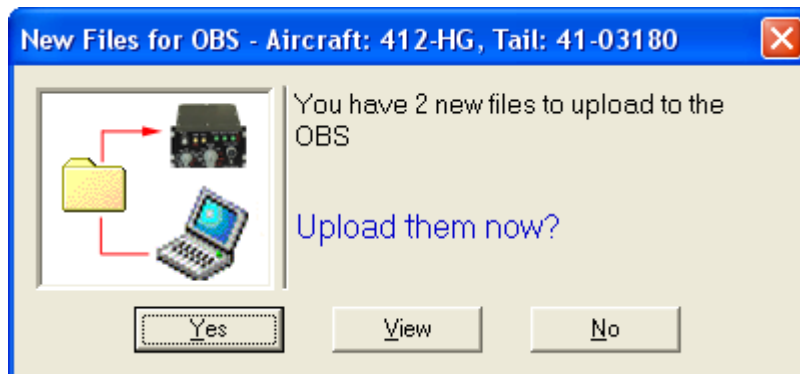
Click the **Download** button.



After downloading any flights, PC-GBS will check for updates and offer to upload the system and setup files (number of upload files can be from 2 to 4 files depending on firmware files in unit are up to date or not).

**WARNING!**

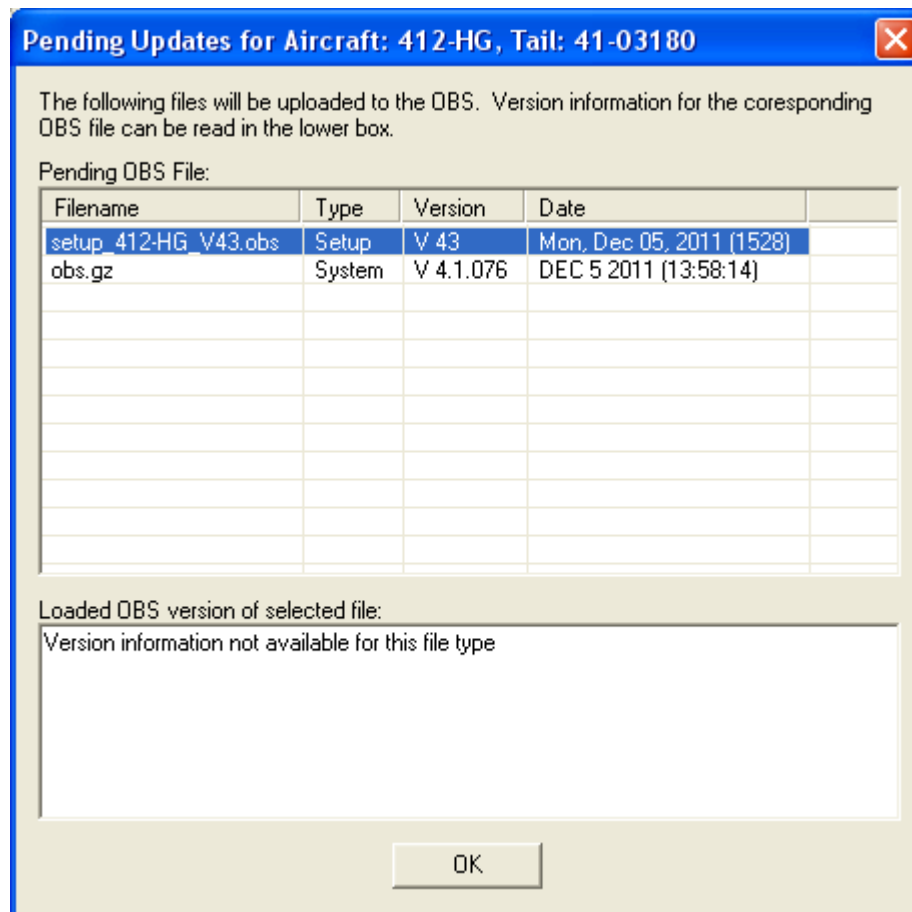
Ensure that you confirm that both files are available to be loaded prior to selecting “**Yes**”. Failure to load all files will cause the MSPU to fail boot and become unserviceable. If all files are not available select “**No**” and then cancel the data download. Conduct step in paragraph 2.5 above and then repeat this paragraph again.

**A**

Click the **View** button to see a list of the files to be uploaded. There should be two to four files; one 412-HG setup file version 43 (or one 412-LG setup file version 43, or one 212 setup file version 41), one system version 4.1.076, one Bootrom version 4.1.004 (if needed an update) and one Script file version 4.1.100 (if needed an update).

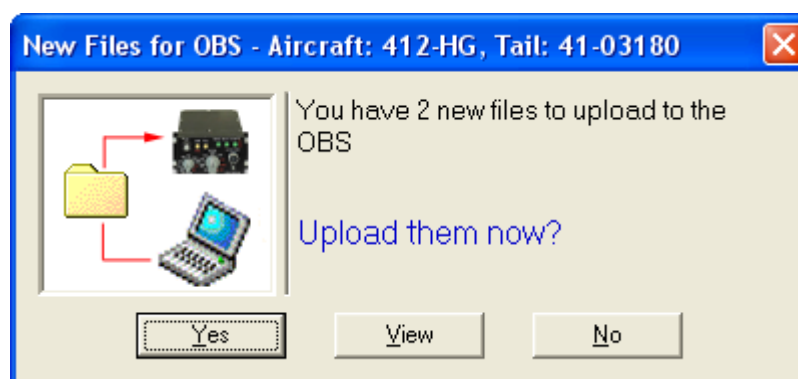
**NOTE**

The MSPU comes from the factory with the 412-HG setup file loaded. If your installation requires the 212 or 412-LG setup, you will need to change the aircraft type and tail number, refer to Para 3.3 for more details.

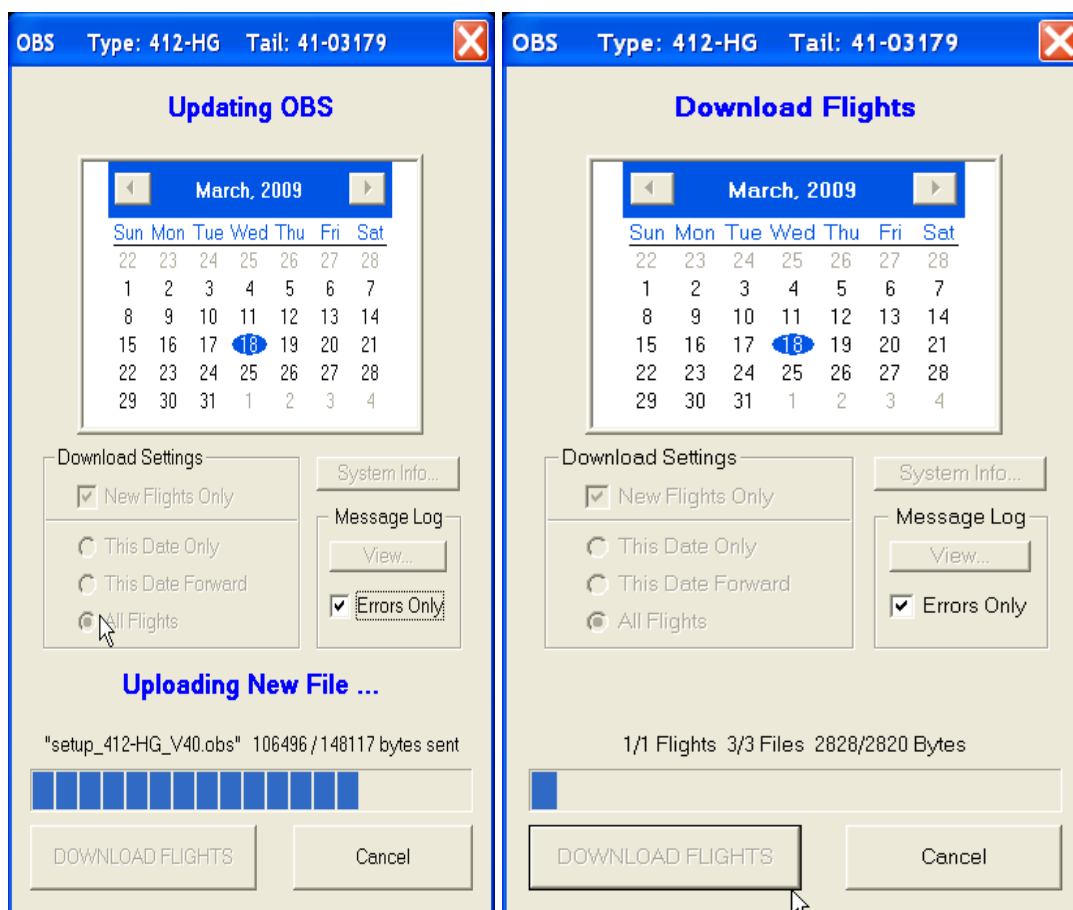


Click **OK** to close the view window.

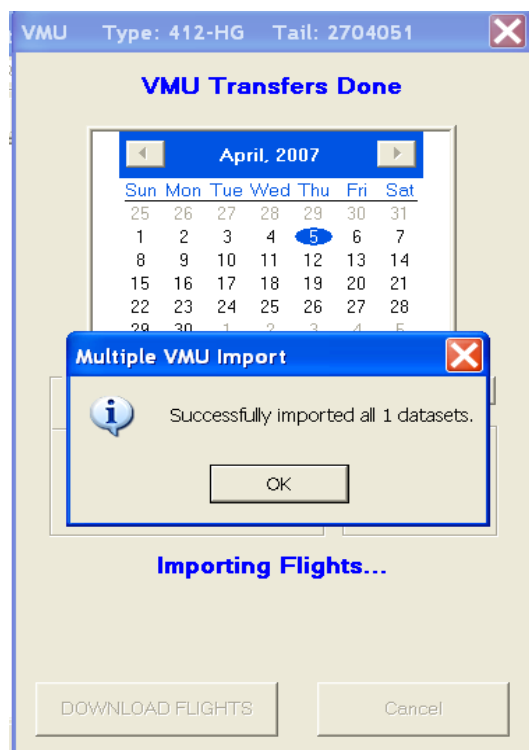
Click **Yes** to upload the files only after you have confirmed that all files shown above are available for uploading.



PC-GBS will upload the setup file.

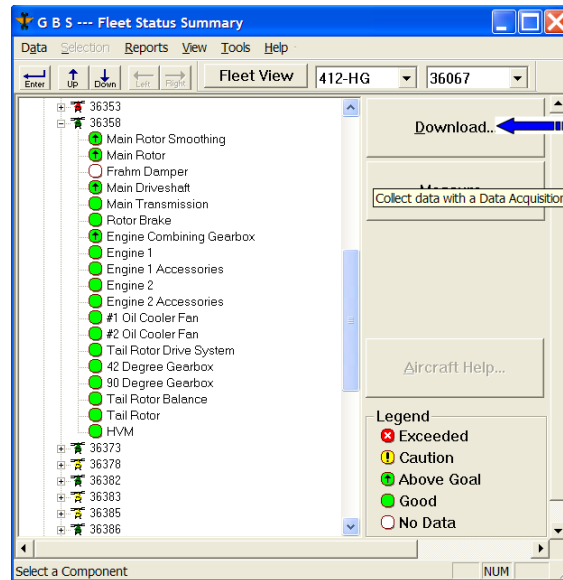


The PC-GBS will upload the files to the MSPU, and import the flight files it downloaded.



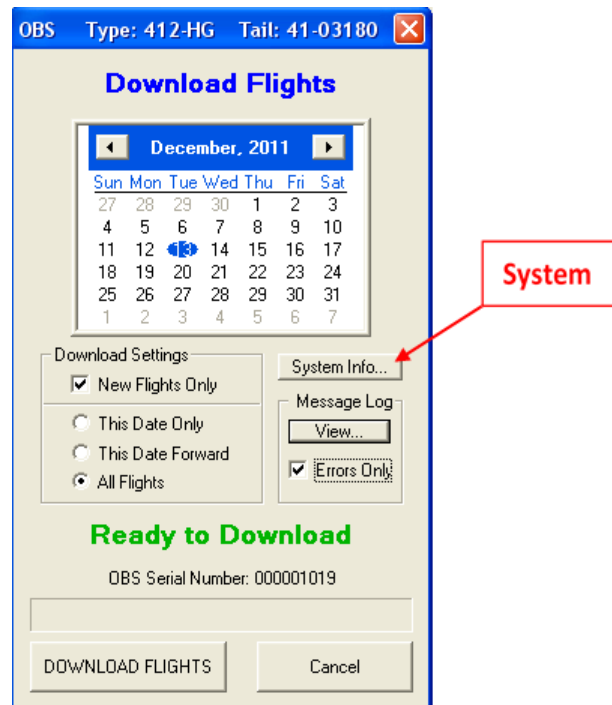
The MSPU will save the files and reboot. Wait for the flashing lights on the CCH or the MSPU to stop flashing.

To verify the MSPU is configured with the newer OBS and setup files, on the GBS click the **Download...** button and connect to the MSPU again.

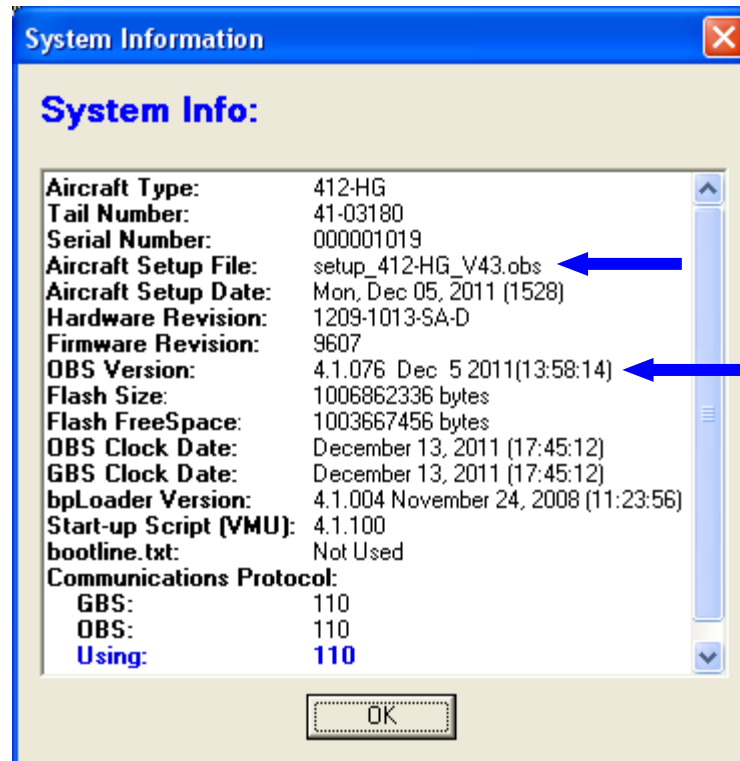


Click the **System Info** button and verify the MSPU is running the new files.

The **Download Flights** window should look like this:



Verify that the correct Setup version, tail number, aircraft type and the OBS version is 4.1.076 as seen in the highlighted text below.



Click **OK** to close **System Info** box and continue download process.

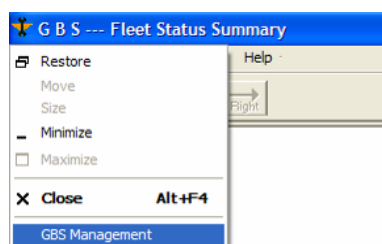
Once data has been downloaded, return to PC-GBS main page and this completes the installation process of PC-GBS 4.1 Service Pack 4A.

Power down aircraft and remove MSPU communications cable.

### 3.3 Changing the setup file (aircraft type) configuration on the unit.

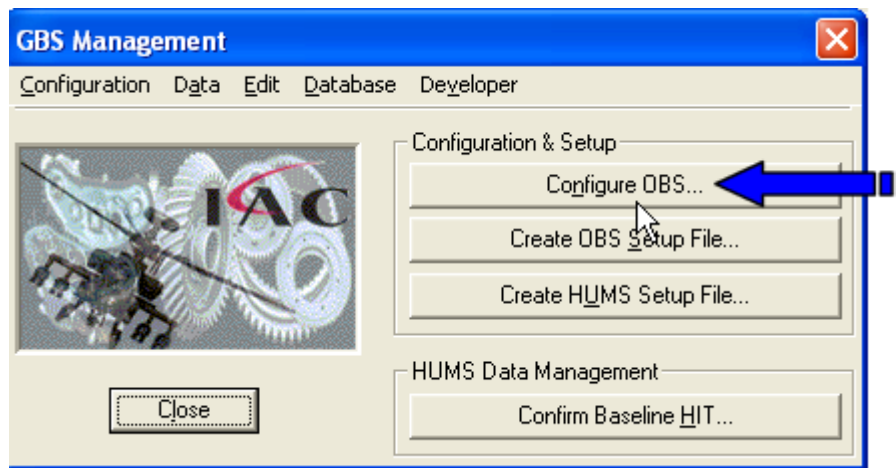
1. Connect the laptop to the MSPU by Ethernet cable.
2. Run PC-GBS.
3. Start the GBS management menu by right clicking on the GBS icon at the top left portion of the GBS title bar.

The password to enter the manager is “iac.vmep”

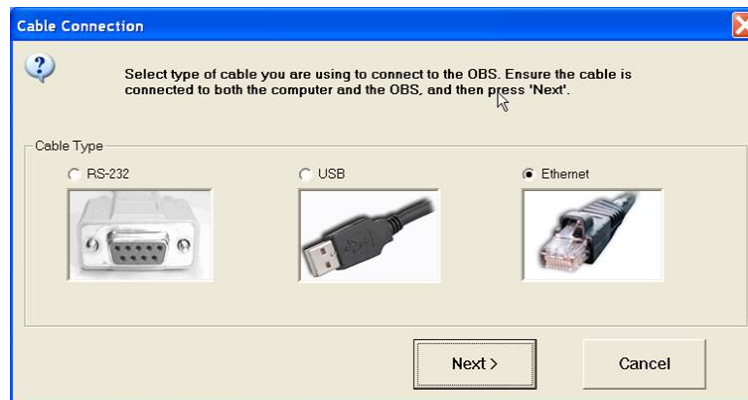




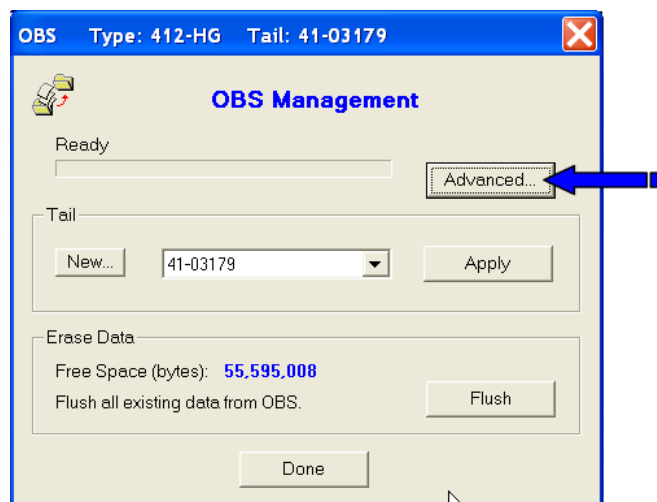
The GBS Management Menu will now launch.



Select the “Configure OBS” button and you will be prompted to connect to the unit using Serial port, USB Port, or Ethernet Port. Select “Ethernet” and press “Next>” and then press “Next>” for the date and time dialog.



Once PC-GBS has connected to the unit, the OBS Management window will open as shown:



Select the “Advanced...” button to enter the Advanced OBS Management window. (Shown Below)

**NOTE:**

Whenever you make a change to the “**Aircraft Type**”, “**Absorber Type**” or “**Data Mirroring Mode**” you must push the appropriate “**Apply**” button before the change will take place. Failure to perform this step will result in no changes being made.

Aircraft Type: Use the drop down list to select the type of aircraft you wish to install **212**, **412HG (High Gear)**, **412LG (Low Gear)**.

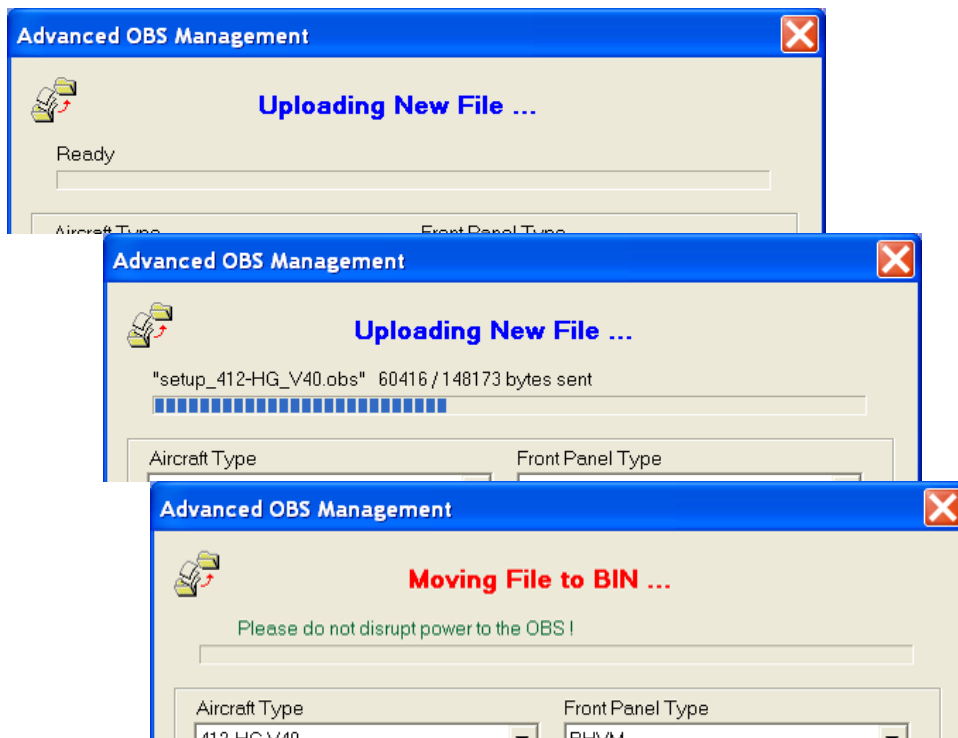
Front Panel Type: Select **BHVM**.

Absorber Type: **412HG** and **412LG** select “**Box Spring**.”


Data Mirroring Mode: For pedestal USB download port, select “**Aircraft Default or Commanded**” for USB Memory Kit installed next to MSPU select “**Auto**.”


Once all the fields are correctly selected click “**Apply**.”

The top information screen will display updates as the Aircraft Setup file changes.



When the dialog reads “File Upload Completed,” select the “Done” button at the bottom of the window, as shown below.

**Advanced OBS Management** 

 **Advanced OBS**

Ready

Aircraft Type: 412-HG V43 Front Panel Type: BHVM

Absorber Type: Box Spring Data Mirroring Mode: AUTO

Data Retention: 30 Days to retain data that has been downloaded


OBS Tag Information

PART NO: 1209-1013-SA REV: D

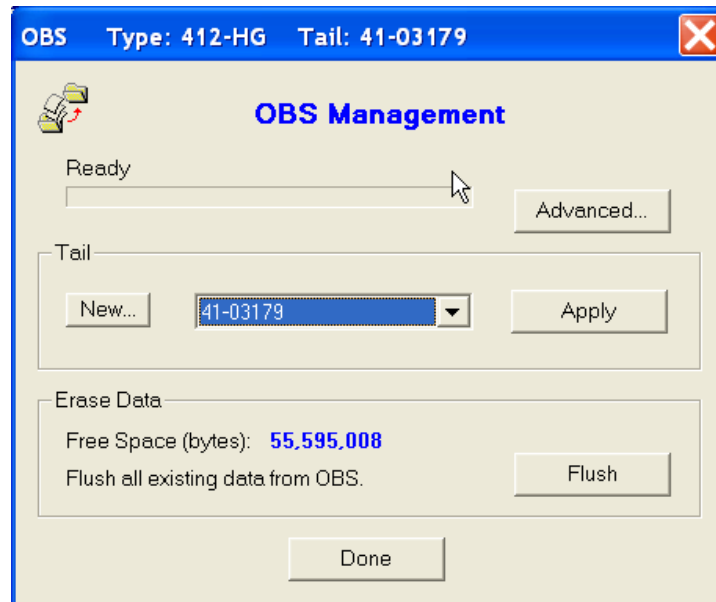
SERIAL NO: 00001019

Above Information should match the tag on the OBS.

Upload File



Selecting **Done** will take you back to the OBS Management window.



**NOTE:**

Bell Helicopter recommends that you use the aircraft serial number as the tail number in lieu of the registration number. This will allow the data to be stored on the BHVM iMDS server to be tracked with the airframe over long term. Each time the tail number is changed will result in the previous data to no longer be updated. Using the aircraft serial number will keep the data tagged and current through the aircraft life.

Select the “New” button in the “Tail” section and then select the “Commercial” button. Now type in the tail number for the new aircraft, and select “Apply.”

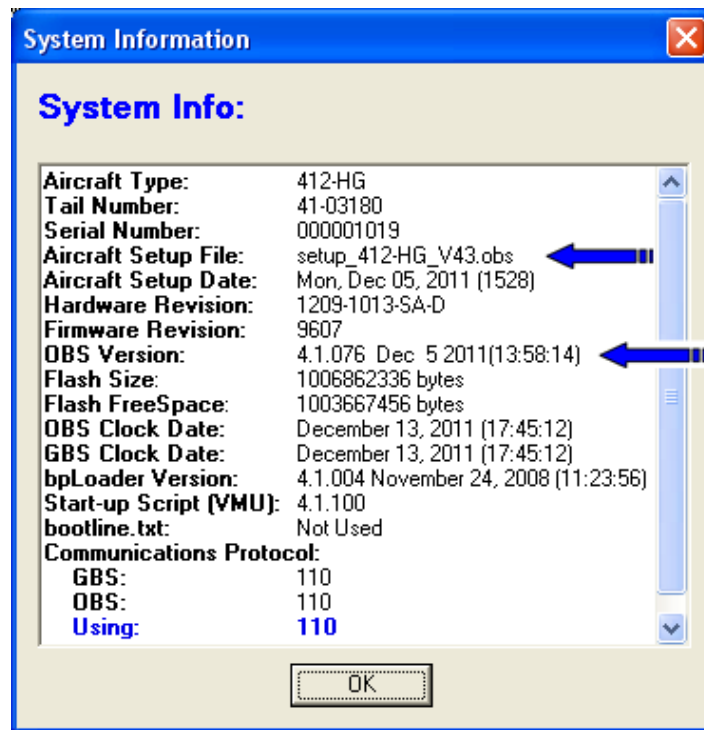


Finally, select the “Done” button on the OBS Management window.

The system will ask to perform a system flush and then the unit will reboot. This boot cycle will activate the new setup file and tail number that was just uploaded to the unit.

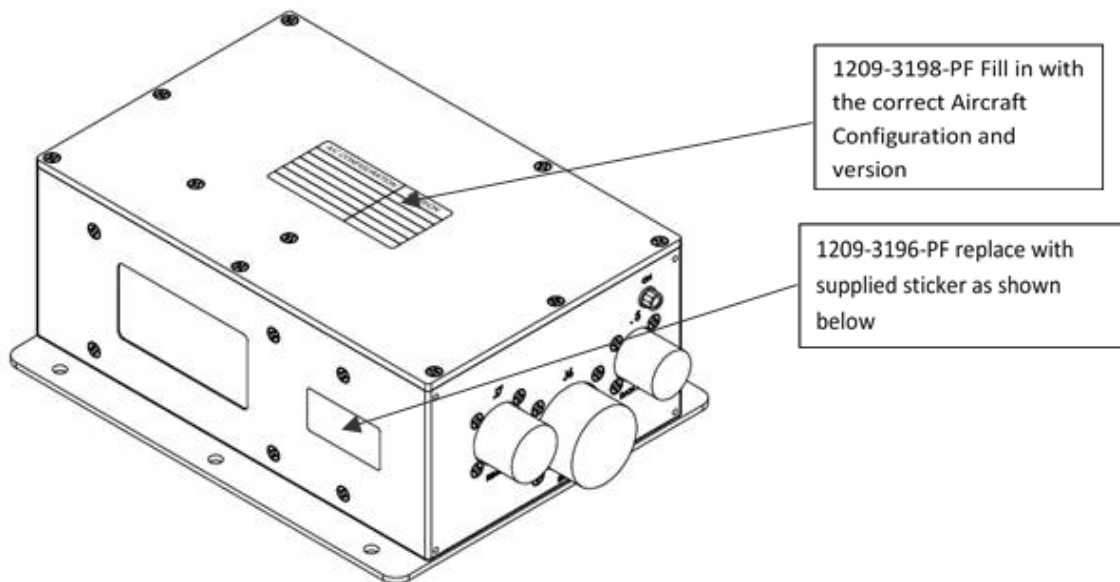
Once the system reboots, verify the system configuration as outline in Para 3.2 by connecting with the Ethernet cable and performing a download and then selecting System Info from the download

dialog. Ensure the proper aircraft type and tail number is installed.



### 3.4 Completing the MSPU identification tag

“If this is an upgrade to an existing 412 MSPU or if it is an initial install for the BHT Model 212, replace the software configuration label with the new label 1209-3196-PF supplied in the package (Ref the figure below).”



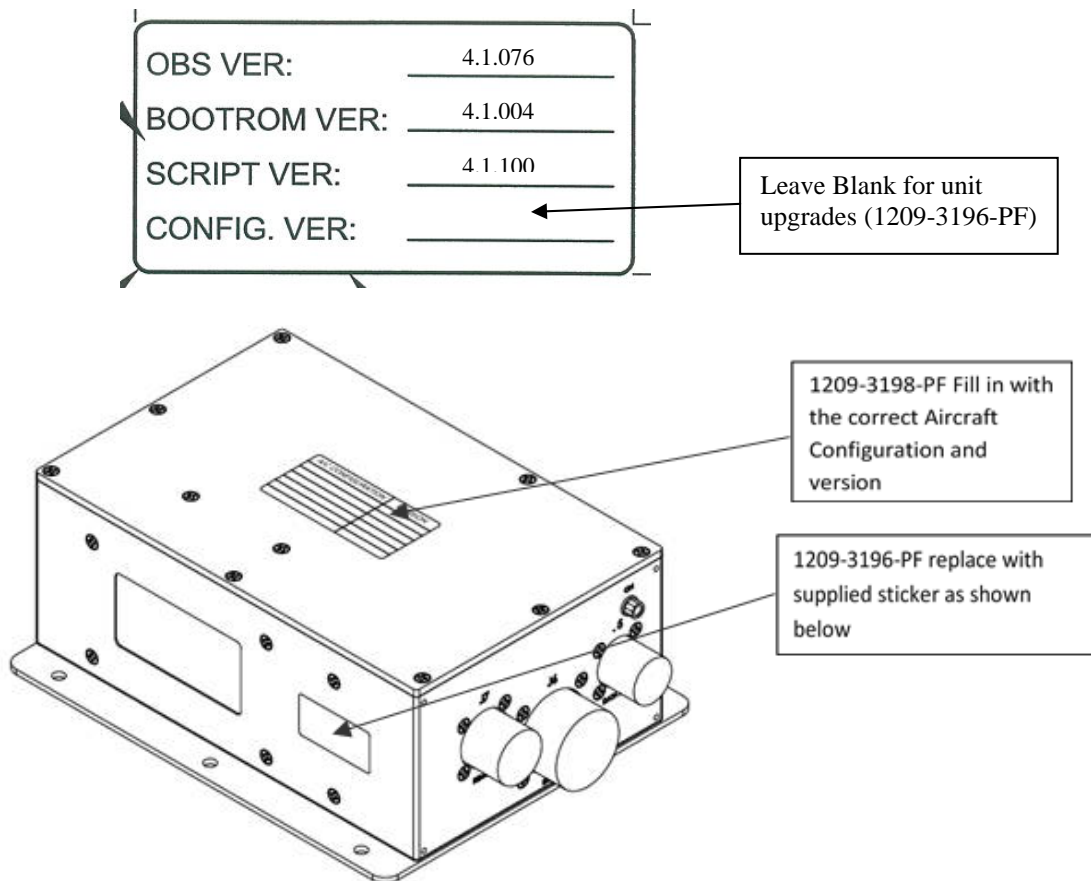
Install label 1209-3198-PF in center of top cover of MSPU as shown in the figure above. At the

completion of the upgrade please fill in the Aircraft Configuration tag previously installed on top of the MSPU with the Aircraft Type and Version that you have just uploaded.

CSIF Examples:

- 412-HG\_43.CSIF
- 412-LG\_43.CSIF
- 212\_41.CSIF

Label Example for 212 Aircraft:



Aircraft Configuration	Version #
212	41

1209-3198-PF