

MANPOWER:Approximately 5.0 man-hours.
(Man-hours 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	Revis	sion	Description	Affected Pages
08/19/	5 NF	R	Original Release	All

Reviewed:

Engineering

1.0 MATERIALS REQUIRED

1.1 <u>Part 1</u>: Upgrade of PC-GBS 4.1SP4A Configuration File (CSIF) v43 to v44 or v45

Label P/N 1209-3196-PF:

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

<u>NOTE</u>

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

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

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

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Bell Helicopter Vibration Monitor (BHVM) Kit

1.2 Part 2: Removal of disconnect on T/R Bracket Assembly

Part 3: Relocation of Upper Mast Accelerometer – (412 & 412EP ONLY)

TABLE 2 - PARTS LIST,412-263-002 UPGRADE KIT

QTY	PART NUMBER	DESCRIPTION
1	MS21919WDG9	CLAMP
1	MS21919WDG8	CLAMP
1	MS21919WDG4	CLAMP
1	MS21919WDG2	CLAMP
4	MS35206-216	SCREW
4	MS27039-1-07	SCREW
1	NAS1801-3-9	SCREW
1	MS21042L5	NUT
1	MS21042L4	NUT
3	MS21042L3	NUT
4	MS21042L04	NUT
8	NAS1149DN416J	WASHER
1	NAS1149F0532P	WASHER
1	NAS1149D0532J	WASHER
1	NAS1149F0463P	WASHER
1	NAS1149F0416P	WASHER
5	NAS1149D0332J	WASHER
4	D-150-0174	SPLICE KIT, SHIELDED CABLE
24"	M27500-22TG2T14	22 GA, 2 COND SHIELDED WIRE
8"	ATUM-16/4-0	INSULATING TUBE
12"	M22759/41-22-9	WIRE-1 COND UNSHIELDED, 22AWG
1	412-367-123	BRACKET
1	412-365-121	BRACKET
1	412-362-125	COVER PLATE
6"	M23053/5-306-0	1/4" HEATSHRINK BLK
1	D38999/20WA35SA	CONNECTOR
48"	ATUM-12/3-0	INSULATING TUBE
4	M83519/1-3	SOLDER SLEEVE
6	M39029/56-348	SOCKET

1 412-263-101 BACKSHELL ASSEMBLY

2.0 WEIGHT AND BALANCE

Not affected

3.0 PUBLICATIONS AFFECTED

Model 212:Instructions for Continued Airworthiness, report AA-08032Model 412, 412EP:Instructions for Continued Airworthiness, report AA-04049

4.0 ADDITIONAL INFORMATION

Any questions regarding this bulletin should be addressed to:

Aeronautical Accessories Attn: Technical Support 450 Industrial Park Rd Piney Flats, TN 37686-4419 Email: <u>techsupport@aero-access.com</u> 1-800-251-7094

5.0 ACCOMPLISHMENT INSTRUCTIONS:

PART 1 - INSTRUCTIONS FOR UPGRADING PC-GBS 4.1SP4A CONFIGURATION FILE (CSIF) V43 TO V44 OR V45

5.1 AIRCRAFT CONFIGURATION FILES

The following instructions are provided as a guide for upgrading the PC-GBS 4.1SP4A Configuration File (CSIF) from v43 to either v44 or v45. The table below describes the applicability of each configuration file.

<u>NOTE</u> Installation of v44 is required prior to installing v45.

Version 43	Version 44	Version 45
Current released	New Cl's thresholds for	Same as V44 except new tail
	412HG/412LG and 212 with	rotor balance coefficients for
	tail rotor balance coefficients	aircraft with Vertical Fin
	with Standard Vertical Fin	modified with FASTFIN.

5.2 SOFTWARE DOWNLOAD

- 1. Access BHVM web site at <u>https://bhti-imds.iac-online.com</u>.
- 2. Click on Download and choose "PC-GBS Programs".
- 3. Click on File Name, Bell 4.1 SP4A V45 Zip file and download to your desktop.

BHVM Web Server	and the second s	Bell	elicop	ter		POWERED BY Honeywell
4	▶ Fleet Status [™]	Download ^M				<u> </u>
Alarm Filter Enabled	Flight Data	PC-GBS Programs	s <u>User Manua</u>	ls		
Support Search Related Links Interview					Program Down	nloads
Download						
Download		File Name 🔷 🌩	File Type	File Size 🍦	Last Modified	Description
Download Configuration Info	5.5 SP4 Bell	File Name 🔶	File Type	File Size 96.5 MB	Last Modified 2015/04/21 08:47:36	Description 429 PC-GBS 5.5_SP4_Bell429_V36
Download Configuration Info	<u>5.5_SP4_Bell</u> Bell_4.1_SP4	File Name 429_V36.zip A_CD_Image.zip	File Type ZIP ZIP	File Size 96.5 MB 101.8 MB	Last Modified 2015/04/21 08:47:36 2014/01/22 06:50:49	Description 429 PC-GBS 5.5_SP4_Bell429_V36 412/212 PC-GBS 4.1.SP4A CD Image
Download Configuration Info	<u>5.5 SP4 Bell</u> Bell 4.1 SP4 Bell 412EPI	File Name 429_V36.zip A_CD_Image.zip 5.7_SP2A_GBS_CD_Image.zip	File Type ZIP ZIP ZIP	File Size 96.5 MB 101.8 MB 107.6 MB	Last Modified 2015/04/21 08:47:36 2014/01/22 06:50:49 2014/05/01 13:04:47	Description 429 PC-GBS 5.5_SP4_Bell429_V36 412/212 PC-GBS 4.1.SP4A CD Image 412EPI Software 5.7-SP2A
Download Configuration Info	5.5_SP4_Bell Bell 4.1_SP4 Bell_412EPI DMITS 412EF	File Name	File Type	File Size 96.5 MB 101.8 MB 107.6 MB 9.4 MB	Last Modified 2015/04/21 08:47:36 2014/01/22 06:50:49 2014/05/01 13:04:47 2013/08/20 10:04:35	Description 429 PC-GBS 5;5_SP4_Bell429_V36 412/212 PC-GBS 4;1.SP4A CD Image 412EPI Software 5;7-SP2A DMITS 412EPI SOFTWARE

- 4. Create a new folder on Desktop called Bell 4.1 SP4A V45.
- 5. Unzip files Bell 4.1 SP4A V45.zip and extract them into the new folder you have just created.

5.3 PC-GBS SOFTWARE WITH WINDOWS 7 COMPUTERS

This section applies to users operating Windows 7 Operating Systems.

1. Right click on PC-GBS icon on your Desktop and choose "Properties".



2. In the PC-GBS Properties screen click on the "Compatibility Tab".

PC-GBS 4.1 Prope	rties		(
Encryption	Security	Details	Previous Versions				
General	Shorte	ut	Compatibility				
If you have problems with this program and it worked correctly on an earlier version of Windows, select the compatibility mode that matches that earlier version. <u>Help me choose the settings</u> Compatibility mode Compatibility mode Run this program in compatibility mode for: Windows XP (Service Pack 3)							
Settings							
I Run in 256 co	olors						
Run in 640 x	480 screen re	esolution					
Disable visua	I themes						
Disable deskt	op compositio	on 					
I Disable displa	ay scaling on I	high DPI sett	ings				
 Privilege Level ✓ Run this program as an administrator 							
🕞 Change settin	gs for all user	3					
	ОК	Can	cel Apply				

AERONAUTICAL ACCESSORIES

- 3. Check the following box.
 - a. Run this program in Windows XP compatibility mode.
 - b. Run this program as an administrator.
- 4. Click Apply then OK.

5.4 PC-GBS CONFIGURATION FILE VERSION 44 INSTALLATION

<u>NOTE</u>

Installation of v44 is required prior to installing v45.

- 1. Open PC-GBS.
- 2. Start the GBS management menu by right clicking on the GBS icon at the top left portion of the GBS title bar.



3. Enter password "iac.vmep.

Administrator Control Access				
Enter Password:				
iac.vmep				
OK	Cancel			

4. Click Ok.

5. On the GBS Management screen click on "Configuration" and choose "Install Configuration Setup".



6. On the Configuration Setup Installer screen Click "Browse".

Confi Instal	guration Setu I Options —— guration Setup: led Version:	p Installer	Replaceme	ent Version:	Browse	×
	Install	Prev	view	Close	e	

7. Browse to folder created earlier "Bell 4.1 SP4A V45".

WinZip - Bell_4.1_SP4A_ File Actions View Jobs C	V45.zip Options Help				
New Open Fax	vorites Add	Extract Mail	Encrypt	View CheckOut	Wizard View Style
Name	Туре	Modified	Size Ratio	Packed Path	
212_44.csif 212_44.csif 412-HG_44.csif 412-HG_44.csif 412-LG_44.csif Vmep-212v45.mdb Vmep-412-hgv45.mdb	Microsoft Of CSIF File CSIF File CSIF File Microsoft Of b Microsoft Of	11/20/2014 2:56 AM 5/21/2015 7:39 AM 5/21/2015 8:35 AM 5/21/2015 8:36 AM 11/20/2014 2:55 AM 11/20/2014 2:56 AM	6,164,480 93% 10,805, 0% 9,725,952 0% 9,718,784 0% 6,111,232 93% 6,164,480 93%	437,461 10,78 9,700, 9,695, 414,845 436,880	
Selected 0 files, 0 bytes		Total 6	files, 47,549KB		•

Bell Helicopter Vibration Monitor (BHVM) Kit

- 8. Choose the Aircraft Configuration required for your aircraft and click "Open".
 - a. 412-LG_44.CSIF (412 Low Gear)
 - b. 412-HG_44.CSIF (412 High Gear)
 - c. 212_44.CSIF (212 Low or High Gear)
- 9. In the "Configuration Setup Installer screen click "Install". Once installed click "Close".

🚰 Configuration Setup Installer	×
_ Install Options	1
Configuration Setup:	
C:\USERS\PRS63\DESKTOP\BELL 4.1 SP4A V45\BHVM V45 Browse	
Installed Version: Replacement Version:	
44 44	
	1
Install Preview Close	

10. Software will request to Reimport your data, click "Reimport Now".



11. Click on PC-GBS Help.

🐨 G B S Fleet Status Summary							
Data Selection Reports View Tools	Help						
	PC-GBS Help	412-HG 🔻					
Enter UP Down Left Right	About PC-GBS						

12. In the "About VMEP Ground Based Station" click on "Data Base Info".

About VMEP Ground Bas	ed Station	X						
Build Date: Dec 19 2011 (09	3:48:24)	OK						
Version: 4.1 - Build: 073 🛛 🔪 👘								
Release notes for version 4.1 - Service Pack 4								
OBS Setup Library Version: 4.01 e								
Serial Number: f5af6146-d8c	c-9e4c-e881-d0015dc703ff	PC-GBS						
- Supported by								
Intelligent Automa	ation Corporation	1997 S						
13029 Dar	nielson St.	Database Info						
http://www.ia	c-online.com							
vmep.support@	iac-online.com	DLL Info						
Program Description:								
This is the ground based po (VMEP) for automatic rotor :	rtion of the Vibration Managem smoothing and drive train health	ent Enhancement Program 🔺 monitoring on helicopters.						
This program and associate	d code are the property of the l	JS Army.						
- System Information								
Windows Version:	Windows XP ver. 5.1 (Service	Pack 3 : Build 2600)						
Physical Memory Free:	1023 MB							
Total Free Memory:	2047 MB							
Free Disk Space:	C: 45 GB							
Free System Resources:	88 %							

13. Verify Version 44 is displayed.

💱 Database Information	<u>_ 🗆 ×</u>
Master Database	<u> </u>
Title: C:\Program Files (x86)\VMEP\database\vmep-master.mdb version: 4.6 date: 10/07/2005 00:00:00 comment: Master Database - Added DCD_Unit table, updated to version 4.6 to match type databases	3
Type Database	
file: C:\Program Files (x86)\VMEP\database\vmep-212.mdb lypes: 212 (version: 44) version: 4.6o date: 07/30/2007 (13:48:44) comment: Added save_raw to Tach_info table	
Type Database	
,file: C:\Program Files (x86)\VMEP\database\vmep-412-hg.mdb types: 412-HG (version: 44) version: 4.6o date: 07/30/2007 (13:48:44) comment: Added save_raw to Tach_info table	
Type Database	
4	Þ
Print	OK

- 14. Click "OK" in the Database Information screen and click "OK" on the "About VMEP Ground Based Station".
- 15. Refer to "**Upload Aircraft Setup Files to MSPU (V44 or V45)**" below for procedure for the installation of the aircraft configuration file in the MSPU of the aircraft.

5.5 PC-GBS CONFIGURATION FILE VERSION 45 INSTALLATION

<u>NOTE</u>

If installing v44 only, skip this section and perform steps outlined in section "UPLOAD AIRCRAFT SETUP FILES TO MSPU (V44 OR V45)".

<u>NOTE</u>

Installation of v44 is required prior to installing v45.

1. Right click on window start menu.



- 2. Click on open window explorer.
 - a. For window 7:
 - i. Click on C:\Program Files (x86)\VMEP\Database
 - b. For Window XP, 2000:
 - i. C:\Program Files\VMEP\Database
- 3. Open folder database.



4. Locate vmep-412-hg.mdb or 412-lg.mdb or 212.mdb files.

5. Right click on vmep mdb for the aircraft type you are upgrading to V45.

Name ^		Date	e modified	Туре	Size
퉬 412-H0	3	4/28	3/2015 3:28 PM	File folder	
	mdb	4/28	3/2015 3:21 PM	Microsoft Office Acc	4,840 KB
🖏 vmep-2	212.mdb	5/11	1/2015 4:06 PM	Microsoft Office Acc	5,824 KB
🕄 vmep-	0000		'2015 4:06 PM	Microsoft Office Acc	5,932 KB
🖏 vmep	New		2015 3:22 PM	Microsoft Office Acc	5,876 KB
🖏 vmep-	Process Directory		2015 4:06 PM	Microsoft Office Acc	5,884 KB
戳 vmep-i	Encrypt for sharing Open Dell Data Protection Encryption.		2015 3:22 PM	Microsoft Office Acc	320 KB
	Open with				
	💟 Scan for threats				
	Dim WinZip Restore previous versions	×			
	Send to	•			
	Cut				
	Сору				
	Create shortcut				
	Delete				
	Rename		-		
	Properties				

6. Click on rename.

퉬 412-HG	4/28/2015 3:28 PM	File folder	
🕄 Sample.mdb	4/28/2015 3:21 PM	Microsoft Office Acc	4,840 KB
📢 vmep-212.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,824 KB
vmep-412-hg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
wmep-412-hg_template.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	5,876 KB
📢 vmep-412-lg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,884 KB
📢 vmep-master.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	320 KB

- 7. Rename file as follow depending on aircraft upgrade.
 - a. vmep-412-hgv44.mdb
 - b. vmep-412-lgv44.mdb
 - c. vmep-212v44.mdb

Name *	Date modified	Туре	Size
퉬 412-HG	4/28/2015 3:28 PM	File folder	
🖏 Sample.mdb	4/28/2015 3:21 PM	Microsoft Office Acc	4,840 KB
🔊 vmep-212.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,824 KB
wmep-412-hg_template.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	5,876 KB
wmep-412-hgV44.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
🔊 vmep-412-lg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,884 KB
🖏 vmep-master.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	320 KB

- 8. Click out of the re-name text to save the changes.
- 9. Go to your desktop folder (Bell 4.1 SP4A V45) and copy database needed.
 - a. (412LG) vmep-412-lgv45.mdb
 - b. (412HG) vmep-412-hgV45.mdb
 - c. (212) vmep-212.mdbV45

10. Paste database V45 in Database folder.

Name *	Date modified	Туре	Size
鷆 412-HG	4/28/2015 3:28 PM	File folder	
🖏 Sample.mdb	4/28/2015 3:21 PM	Microsoft Office Acc	4,840 KB
戳 vmep-212.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,824 KB
vmep-412-hgv45 mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
wmep-412-hg_template.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	5,876 KB
🖏 vmep-412-hgv44.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
🖏 vmep-412-lg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,884 KB
戳 vmep-master.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	320 KB

11. Remove extension v45 and click out of the re-name text to save the changes.

Name ^	Date modified	Туре	Size
鷆 412-HG	4/28/2015 3:28 PM	File folder	
	4/28/2015 3:21 PM	Microsoft Office Acc	4,840 KB
🜒 vmep-212.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,824 KB
🜒 vmep-412-hg_template.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	5,876 KB
戳 vmep-412-hgv44.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
vmep-412-hg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,932 KB
🔊 vmep-412-lg.mdb	5/11/2015 4:06 PM	Microsoft Office Acc	5,884 KB
📢 vmep-master.mdb	4/28/2015 3:22 PM	Microsoft Office Acc	320 KB
New V	45		

- 12. Close Windows Explorer.
- 13. Open PC-GBS software.

14. Right clicking on the GBS icon at the top left portion of the GBS title bar.



- 15. Enter password "iac.vmep".
- 16. Click Ok.

Administrator Control Acc	ess	×
Enter Password:		
iac.vm	пер	
ОК	Cancel	

17. Click on "Create OBS Setup File".



18. When prompted, Select aircraft type.

Select Aircraft Type and Tail for Setup	×
Select Aircraft Type:	*
212 412-HG 412-IG	*
OK Cancel	

19. Add the following comment "Version45" and click OK.

Select Aircraft Type and Tail for Setup	×
Select Aircraft Type: 412-HG	*
Setup Comment: Version 45	
OK Cancel	

20. Once completed you will get a message the OBS is complete.



- 21. Close PC-GBS Software.
- 22. Re -open PC-GBS.
- 23. Click on About PC-GBS.

🐨 G B S Fleet Status Summary		
Data Selection Reports View Tools	Help	
	PC-GBS Help	412-HG 🔻
Enter UP Down Left Right	About PC-GBS	
		1

24. In "About VMEP Ground Based Station", click on database information.

About VMEP Ground Bas	ed Station	×
Build Date: Dec 19 2011 (09	3:48:24)	01/
Version: 4.1 - Build: 073	× 1	UK
Release notes for version 4.	1 - Service Pack 4	
OBS Setup Library Version:	4.01 e 🔪	VMEP
Serial Number: f5af6146-d8d	c-9e4c-e881-d0015dc703ff 📃 🐧	PC-GBS
- Supported by		1752
Intelligent Automa	ation Corporation	1980
13029 Dar	nielson St.	
Poway, C	A 92064	Database Info
vmep.support@	iac-online.com	DLL Info
Program Description:		
This is the ground based po (VMEP) for automatic rotor :	rtion of the Vibration Managemer smoothing and drive train health r	nt Enhancement Program 🔺
This program and associate	d code are the property of the US	S Army.
System Information		
Windows Version:	Windows XP ver. 5.1 (Service F	Pack 3 : Build 2600)
Physical Memory Free:	1023 MB	
Total Free Memory:	2047 MB	
Free Disk Space:	C: 45 GB	
Free System Resources:	88 %	

25. Confirm that version 45 was properly installed.

👻 Database Information	<u>_ ×</u>
Type Database	_
file: C:\Program Files (x86)\VMEP\database\vmep-212.mdb types: 212 (version: 45) version: 4.6o date: 07/30/2007 (13:48:44) comment: Added save_raw to T.ach_info table Type Database	
file: C:\Program Files (x86)\VMEP\database\vmep-412-hg.mdb types: 412-HG (version: 45) version: 4.6o date: 07/30/2007 (13:48:44) comment: Added save_raw to Tach_info table	
Type Database file: C:\Program Files (x86)\V/MEP\database\vmep-412-lg.mdb types: 412-LG (version: 45) version: 4.6o 07/20/2007 (13:49:44)	
comment: Added save_raw to Tach_info table	
<u> </u>	
Print	OK

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Bell Helicopter Vibration Monitor (BHVM) Kit

5.6 UPLOAD AIRCRAFT SETUP FILES TO MSPU (V44 OR V45)

<u>NOTE</u>

This procedure is used for installing Version 44 or Version 45 in the aircraft MSPU. The version will be installed automatically.

- 1. Apply power to the aircraft and wait until the RDY Light is illuminated.
- 2. Connect the laptop tot eh MSPU by Ethernet cable.
- 3. Run PC-GBS.
- 4. Click the "**Download**" button.

👽 G B S Fleet Status Summary	
Data Selection Reports View Tools Help	
Enter Up bown tert Right Fleet View 412-HG	▼ 36212D ▼
日 30 田 55 212 田 75 212 田 75 412-16 田 75 412-16	Download
Click on Download	<u>E</u> xport
	<u>M</u> easure
	<u>A</u> ircraft Help
	Legend
	S Exceeded
	🕛 Caution
	🕈 Above Goal
	Good
	O No Data
Select a Tail	

5. After downloading any flights, PC-GBS will check for updates and offer to upload the setup file.

New Files for OBS - Aircraft: 412-HG, Tail: 41-03180						
	You have 1 new files to upload to the OBS					
	Upload them now?					
(<u>Y</u> es)	<u>V</u> iew <u>N</u> o					

6. Click on the "**View**" button to see the file to be uploaded. There should be one 412-HG setup version 44 or 45 depending on which version is installed on your PC-GBS.

- 7. Click "**OK**" to close the view window.
- 8. Click "**YES**" to upload the file.
- 9. PC-GBS will upload the setup file.

OBS Type: 412-HG Tail: 41-03179 🔰	OBS Type: 412-HG Tail: 41-03179 💽					
Updating OBS	Download Flights					
March, 2009 💌	March, 2009					
Sun Mon Tue Wed Thu Fri Sat 22 23 24 25 26 27 28 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 13 19 20 21 22 23 24 25 26 27 28 30 31 1 2 3 4	Sun Mon Tue Wed Thu Fri Sat 22 23 24 25 26 27 28 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4					
Download Settings System Info Image: New Flights Only Message Log Image: This Date Only View Image: This Date Forward Image: Errors Only Image: All Flights Image: Errors Only	Download Settings System Info Image: New Flights Only Message Log Image: This Date Only View Image: This Date Forward Image: Errors Only Image: All Flights Image: Errors Only					
Uploading New File "setup_412-HG_V40.obs" 106496 / 148117 bytes sent	1/1 Flights 3/3 Files 2828/2820 Bytes					
DOWNLCAD FLIGHTS Cancel	DOWNLOAD FLIGHTS Cancel					

10. PC-GBS will upload the files to the MSPU and import the flight file it downloaded.

VMU	Type: 412-HG Tail: 2704051	X							
VMU Transfers Done									
	Sur Man Tue Weel The Fill Cet								
	25 26 27 28 29 30 31								
	1 2 3 4 🌗 6 7								
	15 16 17 18 19 20 21								
	22 23 24 25 26 27 28								
	Aultiple VMU Import								
_	Successfully imported all 1 dataset OK	ts.							
Importing Flights									
DO	WNLOAD FLIGHTS Cancel								

- 11.MSPU will save the files and reboot. Wait for the flashing lights on the CCH or the MSPU to stop flashing.
- 12. To verify the MSPU is configured with the new setup file, on the PC-GBS click the "**Download**" button and connect the MSPU again.



13. Click on "System Info" button and verify the MSPU is running the new file.

OBS	Тур	e: 41	1 2 -H	G	Tail	: 41	-0318	10 🔀		
	D	ow	nlo	ad	Fli	igh	ts			
					201			1		
			ece	nder,	. 201	E.	C al			
	27	28	29	30	1	2	3			
	4	5	6	7	8	9	10			
	11	12		14	15	16	17			Custom
	25	26	20	28	22 29	23 30	24 31			System
	1	2	3	4	5	6	7		\checkmark	
⊢ Do	ownload	d Setti	ings-		_	C	ataan lat	. 🖌	r	
	🔽 Net	w Fligi	hts Or	nly			stem in	io		
C This Date Only							essage			
C This Date Forward						View				
	• All	Flights	\$				Errors	Only		
	Re	ad	y te	b D	ow	nlo	ad			
	0	BS Se	erial N	umbe	r: 000	00010	019			
				1				1		
DOV	WNLO/	AD FL	IGHT	S		1	Cancel			
					_					

14. Verify that the correct Setup version, Tail Number, Aircraft Type and OBS Version (4.1.076) is displayed as illustrated below.

System Information		X
System Info:		
Aircraft Type: Tail Number: Serial Number: Aircraft Setup File: Aircraft Setup Date: Hardware Revision: Firmware Revision: OBS Version: Flash Size: Flash FreeSpace: OBS Clock Date: GBS Clock Date: bpLoader Version: Start-up Script (VMU): bootline.txt: Communications Protoc GBS: OBS: Using:	412-HG 41-03180 000001019 setup_412-HG_V45.obs Mon, Dec 05, 2011 (1528) 1209-1013-SA-D 9607 4.1.076 Dec 5 2011(13:58:14) 1006862336 bytes 1003667456 bytes December 13, 2011 (17:45:12) December 13, 2011 (17:45:12) December 13, 2011 (17:45:12) 4.1.004 November 24, 2008 (11:23:56) 4.1.100 Not Used col: 110 110	
. .		

- 15. Click **OK** to close **System Info** box and continue download process.
- 16. Once data has been downloaded, return to PC-GBS main page and this completes the installation.
- 17. Power down aircraft and remove MSPU communications cable.

MSPU LABELING

- 18. Ensure information on Label (1209-3196-PF) and Label (1209-3198-PF), on the MSPU unit, matches with the examples shown in Figure 1.
- 19. Update labels by filling in the required data or by installing new labels, if required, to correspond with your specific aircraft application, as shown in Figure 1.
- 20. Upgrade of PC-GBS 4.1SP4A Configuration File (CSIF) complete.

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FIGURE 1 - LABEL, P/N 1209-3198-PF

6.0 ACCOMPLISHMENT INSTRUCTIONS:

PART 2 - REMOVAL OF T/R BRACKET DISCONNECT

(Refer to Figures 2, 3, 4, 5 and 6)

- If installed, disconnect Optical Tach Sensor Cable Assembly (1209-3241-CA) from T/R Tach Disconnect Cable Assembly (1209-3217-CA - part of 412-260-115 T/R Cable Harness Assembly) and attach to Dummy Connector (D38999/22AW). If preferred, remove Optical Tach Sensor Cable Assembly, per applicable Instructions for Continuous Airworthiness Report. Retain all parts.
- Remove Clamps (MS21919WDG5), Screws (MS27039-1-06), Washers (NAS1149F0332P), and Nuts (MS21042L3) that clamp T/R Disconnect Cable Assembly to 90° T/R gearbox housing, 2 places, as shown in Figure 2. Retain Washers and Nuts.
- 3. Remove Nut (MS21042L4), Washer (NAS1149F0416P) and Bracket (412-260-141) from T/R Bracket Assembly (412-260-103 / 412-260-119), as shown in Figure 2. Discard parts.
- At T/R Bracket Assembly (412-260-103 / 412-260-119), mounted to tail rotor 90° gearbox, disconnect T/R Disconnect Cable Assembly (1209-3212-CA) from Connector (D38999/20WB35PN – part of 412-260-115 Tail Rotor Cable Assembly). Temporarily cap and stow loose end of T/R Disconnect Cable Assembly. Ref Figure 2.
- On T/R Bracket Assembly (412-260-103 / 412-260-119), remove lockwire securing axial accelerometer end of Sensor Cable Assembly (1209-3226-CA-01-REV3) to Bracket Assembly. Remove accelerometer from bracket assembly by removing accelerometer bolt – ref Figure 2. Retain hardware.
- Remove lockwire securing radial accelerometer end of Sensor Cable Assembly (1209-3225-CA-01-REV3) to Bracket Assembly (412-260-103 / 412-260-119). Remove accelerometer from bracket assembly by removing accelerometer bolt – ref Figure 2. Retain hardware.
- Remove MS35206-216 Screws (4X), NAS1149DN416J Washers (4X) and M85049/95-10A Mounting Flange and remove receptacle end of 1209-3217-CA T/R Tach Disconnect Cable Assembly (part of 412-260-115 Tail Rotor Cable Assembly) – ref Figure 2. Retain hardware.
- Remove MS35206-216 Screws (4X), NAS1149DN416J Washers (4X) and M85049/95-12A Mounting Flange to remove Connector (D38999/20WB35PN from receptacle end of Tail Rotor Cable Assembly (412-260-115). Remove Tail Rotor Cable Assembly (412-260-115) – ref Figure 2. Discard hardware.

- 9. Carefully remove the Label (CM-SCE-1/2-4H-9) and Tubing (M23053/5-108-0) from the exterior of the Tail Rotor Cable Assembly (412-260-115), ensuring no damage to wires inside, ref Figure 2.
- De-pin T/R Tach Disconnect Cable Assembly (1209-3217-CA), Sensor Cable Assembly (1209-3225-CA-01-REV5) and Sensor Cable Assembly (1209-3226-CA-01-REV4) from Connector D38999/20WB35PN (part of 412-260-115 T/R Cable Assembly). Discard T/R Tach Disconnect Cable Assembly (1209-3217-CA) and retain Sensor Cable Assemblies (1209-3225-CA-01-REV5 and 1209-3226-CA-01-REV4) – ref Figure 2.
- 11. At the center of the Cover Plate (412-362-125), drill Ø.193-199 hole ref Figure 3.
- 12. Match Drill Ø.124-.129 Cover Plate (412-362-125) to T/R Bracket Assembly (412-260-103 / 412-260-119), as shown in Figure 3.
- 13. Brush alodine bare aluminum per MIL-DTL-5541.
- 14. Install Cover Plate (412-362-125) to T/R Bracket Assembly (412-260-103 / 412-260-119) using Screws (MS35206-216), Washers (NAS1149DN416J) under screw heads and nuts, and Nuts (MS21042L04), as shown in Figure 3.
- 15. On previously stowed end of T/R Disconnect Cable Assembly (1209-3212-CA), de-pin all wires from connector (D38999/26WB35SN). Cut sockets from end of wires, minimizing the amount of wire length removed. Discard connector parts – ref Figure 2.
- Locate and carefully pull wires marked HVM24A22 and HVM26A22 through Backshell Assembly (412-263-101). Feed wires from braided end of Backshell Assembly – ref Figure's 4, 5 and 6.

<u>NOTE</u>

Ensure sufficient wire length exists for HVM24A22 and HVM26A22 when routed as shown in Figure 3.

- 17. Prepare ends of wires HVM24A22 and HVM26A22 as shown in Figure 6.
- Install Connector (D38999/20WA35SA) using Solder Sleeves (M83519/1-3), Sockets (M39029/56-348, Heatshrink (M23053/5-306-0), Insulated Tubing (ATUM-16/4-0), and Heatshrink (ATUM-12/3-0), as shown in Figure 6. Use 6 inch lengths (maximum) of supplied Wire-1 cond unshielded, 22AWG (M22759/41-22-9) for jumper wires - ref Figure's 5 & 6.
- Orient and install Connector (D38999/20WA35SA) to T/R Bracket Assembly (412-260-103 / 412-260-119) using retained Mounting Flange (M85049/95-10A), Washers (NAS1149DN416J) and Screws (MS35206-216) and as shown in Figure 3. Torque to 6-8 in-lbs.

- 20. Orient Bracket (412-367-123) and install to Cover Plate (412-362-125) using Screw (MS27039-1-07), Washer (NAS1149D0332J) and Nut (MS21042L3), as shown in Figure 3. Torque to 20-25 in-lbs.
- Orient and attach Sensor Cable Assembly (1209-3226-CA-01-REV4) to T/R Bracket Assembly (412-260-103 / 412-260-119) with retained hardware, as shown in Figure 3. Do not torque fastener at this time.
- 22. Orient and attach Sensor Cable Assembly (1209-3225-CA-01-REV5) to T/R Bracket Assembly (412-260-103 / 412-260-119) with retained hardware, as shown in Figure 3. Do not torque fastener at this time.
- Route Sensor Cable Assembly (1209-3225-CA-01-REV5) through Clamp (MS21919WDG4) and install clamp to Bracket (412-267-123), as shown in Figure 3, using Screw (MS27039-1-07), Washers (NAS1149D0332J) – 2X and Nut (MS21042L3). Torque to 20-25 in-lbs.
- 24. At the lower attaching point for the T/R Bracket Assembly (412-260-103 / 412-260-119) to the tail rotor 90° gearbox, install Washer (NAS1149F0463P), Bracket (412-367-121), Washer (NAS1149F0416) and Nut (MS21042L4), as shown in Figure 3.
- Route cable from T/R Optical Tach Sensor Disconnect, Sensor Cable Assembly (1209-3225-CA-01-REV5) and Sensor Cable Assembly (1209-3226-CA-01-REV4) through Clamp (MS21919WDG9) and loosely install clamp to Bracket (412-367-121) using Screw (MS27039-1-07), Washers (NAS1149F0332P) – 2X and Nut (MS21042L3) – ref Figure 3. NOTE: Rotate clamp as required to clear Nut (MS21042L4). Do not Torque at this time.
- Continue routing wires downward toward the 6 o'clock position of the tail rotor 90° gearbox and prepare Sensor Cable Assembly (1209-3225-CA-01-REV5) and Sensor Cable Assembly (1209-3226-CA—01-REV4) for splicing to T/R Disconnect Cable Assembly (1209-3212-CA).
- 27. With cables routed as shown in Figure 3, splice Sensor Cable Assembly (1209-3225-CA-01-REV5) and Sensor Cable Assembly (1209-3226-CA-01-REV4) to T/R Disconnect Cable Assembly (1209-3212-CA) using D-150-0174 Shielded Cable Splice Kit. Refer to RCPS-150-02 Installation Procedure for TE Connectivity Shielded Cable Splice Kits with Mini-Seal Crimp Primary Splices for installation instructions.

<u>NOTE</u>

Go to <u>http://www.tycoelectronics.com</u> for the latest revision of RCPS-150-02.

- 28. Re-check routing of wires and adjust clamping points, if required. Torque clamp fasteners as shown on Figure 3.
- 29. Torque fasteners securing the Sensor Cable Assembly (1209-3225-CA-01-REV5) and Sensor Cable Assembly (1209-3226-CA—01-REV4) accelerometers to 20-25 in-lbs. Lockwire per NASM33540. Ref Figure 3.

- Bell Helicopter Vibration Monitor (BHVM) Kit
- Secure wiring to tail rotor 90° gearbox at the 6 o'clock position using Clamp (MS21919WDG8), Screw (MS270329-1-07), Washers (NAS1149F0332P) – 2X, and Nut (MS21042L3) as shown in Figure 3. Torque to 20-25 in-lbs.
- If previously removed, re-install Optical Tach Sensor, 1209-3241-CA-REV5, to T/R Bracket Assembly, 412-260-119, using Screw, MS35206-219, Washer, NAS1149DN416J, and Nut, MS21042L04, as shown in Figure 3. Torque to 6-8 in-lbs.
- 32. Mark/label wires per AC43.13-1.
- 33. Reference appropriate ICA report and perform an accelerometer check of the modified components.
- 34. Removal of T/R Bracket Disconnect complete.



FIGURE 2 – LOOKING INBOARD FROM R/H SIDE AT T/R 90 DEG GEARBOX (BALLOON NUMBERS CORRESPOND WITH APPROPRIATE INSTRUCTION STEP)



FIGURE 3 – LOOKING INBOARD FROM R/H SIDE AT T/R 90 DEG GEARBOX (BALLOON NUMBERS CORRESPOND WITH APPROPRIATE INSTRUCTION STEP)



FIGURE 4 – SCHEMATIC WITH T/R ACCELEROMETER BRACKET DISCONNECT

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FIGURE 5 – SCHEMATIC WITHOUT T/R ACCELEROMETER BRACKET DISCONNECT

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FIGURE 6 – BACKSHELL AND CONNECTOR INSTALLATION (BALLOON NUMBERS CORRESPOND WITH APPROPRIATE INSTRUCTION STEP)

7.0 ACCOMPLISHMENT INSTRUCTIONS:

PART 3 – RELOCATION OF UPPER MAST ACCELEROMETER

(Refer to Figures 7 & 8)

- 1. Locate mounting location of Transmission Upper Mast Accelerometer Ref Figure 7.
- Remove lockwire securing accelerometer end of Sensor Cable Assembly (1209-3236-CA-01-REV3) to Accelerometer Mount (412-260-121), as shown in Figure 7. Loosen captive Bolt to remove sensor cable assembly accelerometer from Accelerometer Mount.
- Remove Nut (MS21042L6), Washers (NAS1149F0663P), and Washer (412-260-127) to remove Accelerometer Mount (412-260-121) as shown in Figure 7. Discard hardware and bracket.
- 4. Locate new mounting location for Transmission Upper Mast Accelerometer, as shown in Figure 8.
- 5. At the new mounting location, remove Nut (MS21042L5), Washer (NAS1149F0532P) and Washer (NAS1149D0563J), as shown in Figure 8. Discard hardware.
- 6. Un-clamp Sensor Cable Assembly (1209-3236-CA-01-REV3) from nearby clamps, as required, to enable routing of the accelerometer to the new mounting location, as shown in Figure 8.

NOTE

If Sensor Cable Assembly (1209-3236-CA-01-REV3) is too short, length cable using supplied wire (M27500-22TG2T14) and D-150-0174 Shielded Cable Splice Kit. Refer to RCPS-150-02 Installation Procedure for TE Connectivity Shielded Cable Splice Kits with Mini-Seal Crimp Primary Splices for installation instructions.

<u>NOTE</u>

Go to <u>http://www.tycoelectronics.com</u> for the latest revision of RCPS-150-02.

- Apply Sealant (870 B-2) between Accelerometer Bracket (412-365-121) and Mast Bearing Retaining Plate to fill gap. Install Accelerometer Bracket, using Washer (NAS1149D0532J – under bracket), Washer (NAS1149F0532P – under nut) and Nut (MS21042L5) – ref Figure 8. Orient bracket such that accelerometer centerline passes through centerline of transmission housing. Torque nut to 100-140 in-lbs.
- 8. When installing accelerometer, ensure that arrow on accelerometer points away from aircraft. Install accelerometer end of Sensor Cable Assembly (1209-3236-CA-01-REV3) to accelerometer bracket using accelerometer

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captive screw. Torque accelerometer attaching bolt to 20-25 in-lbs and secure with Lockwire per NASM33540 – ref Figure 8.

<u>NOTE</u>

Secure Sensor Cable Assembly (1209-3236-CA-01-REV3) with minimum R.75 service loop beginning no less than 1" from the end of the accelerometer boot. Ensure that cable does not contact moving parts.

- 9. Install Clamp (MS21919WDG2) using Screw (NAS1801-3-9), Washer (NAS1149D0332J) and Nut (MS21042L3), as shown in Figure 8. Torque to 20-25 in-lbs.
- 10. Clamp remainder of Sensor Cable Assembly as required to ensure that cable does not contact moving parts.
- 11. Mark/label wires per AC43.13-1.
- 12. Reference appropriate ICA report and perform an accelerometer check of the modified components.
- 13. Relocation of upper mast accelerometer complete.

BHTI 212, 412, 412EP

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FIGURE 7 – EXISTING LOCATION FOR UPPER MAST ACCELEROMER (BALLOON NUMBERS CORRESPOND WITH APPROPRIATE INSTRUCTION STEP)

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FIGURE 8 – NEW LOCATION FOR UPPER MAST ACCELEROMETER (BALLOON NUMBERS CORRESPOND WITH APPROPRIATE INSTRUCTION STEP)