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Document Number : PS1234
Revision / Date : 3 / August 22, 2011
Document Title : OQAR/PQAR Media Re-Use Instructions
Equipment Affected : OQAR & PQAR
Part Numbers : (All models)
Classification : Information

Introduction

The Penny & Giles Aerospace Ltd. Optical Quick Access Recorder (OQAR) has been designed to use either a 128MB or 230MB capacity media size dependent upon the part number of the OQAR itself. Please refer to SIL 52000-06 for the correct media size and part numbers for your OQAR variant.

PQAR will accept PCMCIA cards up to 1GB capacity. P&G recommend ruggedized PCMCIA cards, part number SA110415-XXXX (where XXXX indicates capacity in MB of either 0128, 0256 or 1024).

Media Reuse

In order to re-use the storage media in your Penny & Giles OQAR/PQAR all you need to do is delete 1 file from the root directory of the optical disk named "--PGOQAR.CS". This delete function will normally be performed by the replay station - which is the most logical place to do this.

Disk or PCMCIA Card Reader

If your replay equipment is not able to perform this simple function then you will need to do this manually on a PC with an MO Drive (in the case of OQAR) or PCMCIA Card reader (in the case of PQAR) attached to it. The Component Maintenance Manual includes an appendix describing the PC equipment required for the Testing of the OQAR/PQAR. This same equipment could be used to perform the file deletion function.

Note 1.   Commercial PC technology has progressed since the CMMs were written, as a result of which you may not be able to acquire a PC with the relatively low specification we have indicated. However a modern PC should function equally well.

Note 2.   Penny & Giles do not specify a particular model of MO drive but recommend that operators purchase one that is supplied with Low-Level-Formatting software, compatible with the version of Windows being used. Many operators use a USB-connected MO drive. A simple internet search should identify a suitable supplier.

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High & low level formatting.

When the MO Drive in the OQAR fails it may result in some sectors of the optical disk being wrongly identified as bad - when in fact the sectors are good - but it is the drive that is faulty. In addition, failure of the MO Drive can result in the boot sector and file attributes table of the optical being corrupted, making it unusable - Windows may report that the disk requires formatting when you attempt to view its contents.

High level formatting can be performed by using the format function in Windows. Typically a high level format will take 10 to 20 seconds to complete. This will not correct the bad sectors problem and will only cause the FAT to be rewritten.

Low level formatting can be performed using the software provided by the MO Drive manufacturer, or using the BIOS function of your SCSI card. The low level format will take between 10 to 20 minutes to format one disk. If you are using a Fujitsu 640 DynaMO Optical Drive connected to your PC then you should also have received some software from Fujitsu which you should install on your PC. This software will include a format option where you can perform a high level format and a low level format when you select a check box.

If your SCSI card has a BIOS ROM fitted then when you boot up your PC you will see a message on the screen from the SCSI card indicating how you can access the BIOS functions. The Adaptec range of SCSI cards indicates that if you press CTRL+A you can enter the BIOS functions. These functions also include a low level format option.

It is not necessary to perform a low level format on all of your optical disks. However if there is any reason to suspect that either the disk has sector errors, or the OQAR in which the disk was inserted reports BAD MEDIA, then we would recommend performing a low level format on that disk before returning the disk to service.

Low-Level formatting is recommended on a new MO disk prior to its first use in an OQAR. This is not necessary on subsequent use of the same disk.

A new PCMCIA card requires formatting using the Windows (FAT) format function prior to first use in a PQAR and does not require Low-Level formatting. Further formatting is not necessary on subsequent use of the same PCMCIA card.

How to install, remove and handle the media

With the OQAR/PQAR powered up (the POWER ON light is illuminated) open the access door and ensure that any media is not already inserted into the OQAR/PQAR. Remove the media from its protective packaging and then check to ensure it is compatible with the OQAR/PQAR part number fitted to the aircraft. Ensure that the media is not write protected (if applicable) and that the label is securely fixed to the appropriate part of the media.

Note. 3.   Make reference to local instructions to record on the disk label or job card: the install date, time, A/C tail number and line operator name.

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When the OQAR displays INSERT DISK align the disk with the angled corner at the top and at the front - nearest the exposed slot in the OQAR (the operator should be holding the disk at the label part with the protective metal slider also at the front) and insert the disk into the OQAR using a 'reasonable' amount of pressure. The disk should be pushed into the optical drive below the front surface of the drive front panel inside the OQAR and the OQAR will be seen to briefly display CHECKING DISK, followed by the DATE and TIME.

Refer to SIL 52000-05 for additional advice on installing PCMCIA card into PQAR. When the PQAR displays INSERT CARD align the PCMCIA card as indicated in SIL 52000-05, then gently push the card into the PQAR. Please note that if you have other equipment on the aircraft using PCMCIA cards, the orientation may not be the same as in the PQAR. The internal card reader can be seriously damaged by attempting to insert the PCMCIA card facing the wrong way. The PQAR will be seen to briefly display CHECKING CARD, PLEASE WAIT, then DATE and TIME.

To remove the media, first have a protective container available to store it after removal from the OQAR/PQAR. Next, with the OQAR/PQAR powered up (the POWER ON light is illuminated) open the access door and press the EJECT pushbutton. The display will show CLOSING FILES or FLUSHING and a percentage figure, and then the display will flash between EJECTING DISK and PLEASE WAIT. When the media is ejected the OQAR/PQAR displays INSERT DISK or INSERT CARD, remove and store the media in the protective container.

Note. 4.   Make reference to local instructions to record on the media label or job card; the removal date and time, the A/C tail number and the line operator name.

CAUTION: **When handling the media ensure it is protected at all times from all fluids and contaminants, direct sunlight and cold temperatures, and store it safely away from physical stress (not in your back pocket!). Do not 'open' the protective slider on the disk and do not touch the disk surface exposed inside.**

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