PATHFINDER

The Army GPS Newsletter Since 1994

An informal electronic newsletter published for the GPS user community by PM GPS. Information presented is based on published and submitted news items of interest to the general user. Widest dissemination and reproduction is encouraged. Newsworthy items are solicited for inclusion. Editor Don Mulligan at PM GPS, Ft Monmouth NJ DSN 992-6137 or (732) 532-6137 or email: Donald.Mulligan1@us.army.mil

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PM GPS and PM FBCB2 Initiative

Replacing GPS Receiver with embedded GPS in Blue Force Tracking Suite

From The Product Manager

Hello GPS Users!

On the handheld side, we continue fielding DAGR at a steady rate.

On the embedded side we are investing in initiatives such as the Blue Force Tracking effort described in this issue in order to replace cable-connected GPS receivers with GPS inside the weapon or other electronic system.

We are also investing in a new COMSEC security device for future production. Known as the SAASM 3.7, this device will reduce the cost of military GPS receivers which will translate into the ability to purchase more receivers for Army users.

If you have questions, please contact me or any member of my staff!

Jay Spencer

LTC, QM,
Product Manager, GPS

A FBCB2 Blue Force Tracking (BFT) vehicle installation with the PLGR receiver at right. PM GPS and PM FBCB2 are now working on a plan to replace the PLGR with embedded GPS (story below).
Photo courtesy PM, FBCB2

PM GPS and PM Force XXI Battle Command Brigade-and-Below, FBCB2 recently initiated an effort to convert Blue Force Tracking (BFT) from hand-held to embedded GPS.

BFT is a secure automated digital computer network that provides "on the move" information about the location of friendly forces at the "brigade and below" operating level. FBCB2 BFT consists of a computer/display, transceiver/antenna and (in its current configuration) a tethered handheld GPS receiver.

Continued Page 2

Military GPS uses the Precise Positioning Service (PPS) signal to provide soldiers with SECURE GPS. Commercial GPS does not!

DAGR Software Update Is Released!

In coordination with the GPS Joint Service Support Management Office at Warner Robins AFB, PM GPS has released the first of two DAGR software updates planned for 2008. Note there are two versions of DAGR software but the reprogramming software automatically selects and loads the appropriate version when connected to a DAGR.

The new versions DAGR software are:

984-2461-015 / 984-3006-005

The governing MWO/TCTO is:

MWO 11-5802-1172-20-3

Questions and Answers about this software update:

Why is This MWO marked "Urgent"?

The "Urgent" category is in support of Field Artillery users who identified a problem with the current DAGR software (984-2461-012, 984-3006-002). The advanced Gun Laying function did not reflect current Army Field Artillery Tactics, Techniques and Procedures or TTP. This created the potential for misinterpretation and improper use of the Gun Laying information provided by DAGR. The new software corrects this problem and retools the Gun Laying function, now titled **Azimuth Determination**. For users that do not use the Gun Laying/Azimuth Determination function, this update can be treated as "Routine".

Should we take DAGRs out of service immediately to apply this MWO?

No, it is not necessary to interrupt operations for this maintenance action. When you stand down, take the opportunity to update your DAGRs. If you use DAGR for Gun Laying/Azimuth Determination, perform the update at the earliest possible opportunity. Also download the updated Operators' manual and study the revised operation in sections 14.6 and 14.7.

Where can we get the cable listed in the MWO?

Most services procured & fielded the DAGR-PC cable at a ratio of approximately one cable for ten DAGRs. If none are available from your unit supply manager, the cable can be requisitioned as DAGR-PC cable, part number 987-5012-001, NSN is 5995-01-521-3198. Note that if your unit has the PLGR-PC cable, NSN 6150-01-375-8664, it is functionally identical and can also be used to connect a DAGR to your PC.

Does this MWO fix the problem we read about in CECOM GPA 2008-003 (green box facing page)?

No, there is another update due out in the Fall, which will address that issue.

This MWO is identified as "number -3". Do I need to apply the other two before doing this one?

No, DAGR software updates are cumulative so you only need to apply the latest one.

My current DAGR software version is 984-2461-012 (or 984-3006-002). This is three version numbers later. What happened to the other two versions?

The intervening version numbers were never released to the field. The -013/-003 versions updated one function to support a new accessory (Vehicle Anti-Jam Accessory) that has only been fielded (so far) to a few users, there was no need for a mass update. AJA support was rolled into the next regular update. The -014/-004 versions were not released due to a problem found in testing, which brought us to the -015/-005 update.

If you have any questions, contact the GPS software engineer at (478) 926-9511 or DSN 468-9511.

Continued from Page One

Blue Force Tracking

BFT displays host vehicle and friendly vehicle locations on the computer display and provides the ability to send and receive text messages and share the reported location of enemy forces.

PM GPS recently initiated a cooperative development effort with Project Manager FBCB2, Product Manager BFT at Fort Monmouth, NJ, to simplify operations by eliminating the tethered GPS receiver from the BFT system. This will be accomplished by embedding a GPS receiver in the new JV5 Processor Unit (PU) to make GPS part of the BFT system. The military operator will no longer have to set up, turn on or monitor a PLGR or DAGR handheld GPS receiver. The BFT computer will perform those tasks automatically operating the internal GPS via system software.

In addition to simplifying BFT operations, this initiative will reduce the BFT logistics footprint by eliminating the handheld GPS receiver, mount and cables. More importantly, this frees up handheld GPS receivers for other users.

PM GPS and PM FBCB2 anticipate getting this initiative through an accelerated R&D phase and into field in late FY09. For more information on how BFT will use the GB-GRAM embeddable GPS receiver, contact PM FBCB2 BFT at DSN 987-0158 or PM GPS integration engineer at DSN 992-4769.

More Information About New DAGR Software!

What Changed in this version of DAGR software?

The –015/-005 release implements several changes in the vendor's Pre-planned Product Improvement (P3I) cycle. In brief, these changes include:

- Sweeping changes to Gun Laying/Azimuth Determination functionality, including the ability to create & manage up to 20 data sets, transfer data sets via serial port, reduced keystrokes for common tasks.
- World Magnetic Model (WMM) 2005 incorporated. This provides more accurate translation between "true" and "magnetic" north references
- Ability to load WMM via serial port. This allows quicker fielding of the next WMM update
- Ability to load new defaults via serial port. Allows users to customize DAGR default settings
- Improved Laser Range Finder (LRF) operations. Now allows for selection of data from up to 3 LRF shots; also accepts larger range inputs.
- Name change for marked waypoints: Waypoints created with the "Mark" function will have a default name of "Markxxx" instead of "MKxxx". This makes DAGR consistent with PLGR operation.

If you desire to know more details about any of these functions, contact us via our website tech support links and we'll be happy to assist.

DAGR reprogramming is relatively painless! Download the software to your laptop or PC, connect the DAGR-to-PC cable (part number and NSN below) and follow the on-screen instructions.

How to Reprogram DAGR Software

The MWO / TCTO provides reprogramming instructions but the process is fairly simple. Download the software patch to a desktop or laptop from the GPS website (or obtain the software on a disk if internet connectivity doesn't support download). Connect the DAGR to the computer with cable p/n 987-5012-001 NSN 5995-01-521-3198 and follow the on-screen instructions. The process only takes a few minutes. Cycle power to confirm the DAGR displays the updated software version number and you are done. Remember to report updating your software in accordance with local maintenance policy.

If you have any questions, contact a PM GPS engineer at either DSN 468-9511 or DSN 992-5758.

2 Ground Precautionary Action (GPA) Messages on Commercial and Military GPS Receivers!

GPA 2007-007 (Apr 07)
Advised users of the potential for temporary error in GPS receiver signal accuracy due to multi-path conditions (when a receiver tracks a signal bouncing off a nearby hard surface and mistakes it for a satellite signal).

The 2007 GPA contained work-around solutions and stated that revised Tactics, Techniques and Procedures (TTP) would be published in Aug 2007.

GPA 2008-003 (Jan 08)
Updated the first GPA by stating that new software version to reduce the multipath effect will be released for DAGR in the Fall of 2008 and the TTP updates were delayed from Aug 07 to Jun 08.

NOTE These GPA apply to both commercial and military GPS receivers! Users are advised to read the complete GPAs which are available at the GPS website and Safety Offices.

FUTURE DAGR SOFTWARE

Expected Release Fall 2008

Late in 2008, a second DAGR software release will correct a problem first reported last year that could affect GPS position accuracy. A Ground Precautionary Action (GPA) message was issued (see green box above). When this software is released, an announcement will be sent to all registered GPS website users. Notice will also be distributed through normal MWO and TCTO channels.

Demilitarization of GPS Receivers

DoD has purchased over 250,000 GPS receivers since the early 1990s. The first large purchase occurred when PM GPS rushed some 7,000 Small Lightweight GPS Receiver (SLGR) commercial GPS receivers into service in support of Operation Desert Storm.

The second large purchase occurred during 1994-1998 when Army PM GPS procured over 112,000 Precision Lightweight GPS Receiver (PLGR), to replace SLGR and to keep up with the increasing demand for military GPS.

The third large purchase began in 2004 and continues as Army PM GPS fields the current model handheld GPS receiver, the Defense Advanced GPS Receiver (DAGR) to replace PLGR and to keep up with the increasing need for military GPS receivers.

Time marches on and like similar electronics products, GPS receivers have a relatively short life-span.

Today SLGR is rated obsolete and is not authorized for use. The newest PLGR in service is almost 10 years old, most are older. The PLGR service life was projected to be 10-years so it comes as no surprise to learn that the older PLGRs (usually tan in color) are becoming difficult to repair due to parts obsolescence. As they are returned for service, more often than not, tan PLGRs become an issue of disposal not repair due to lack of parts.

Demilitarization for all military GPS receivers is a controlled process. Regardless of the condition (see right) most military GPS receivers contain a COMSEC device. PM GPS has provided DoD Item Managers with specific instructions for handling the repair, replacement and the demilitarization and disposal of GPS receivers.

When a unit receives DAGR, the command sometimes "cross levels" surplus PLGR within the command. In other cases, PM GPS fielding team assists units with PLGR turn-ins. And in some cases, the unit finds it necessary to turn-in excess PLGRs on their own.

The Defense Reutilization Management System DRMS, represented in the field by Defense Reutilization Management Offices (DRMO) provides units with proper advice concerning the disposition of excess or obsolete property including GPS receivers.

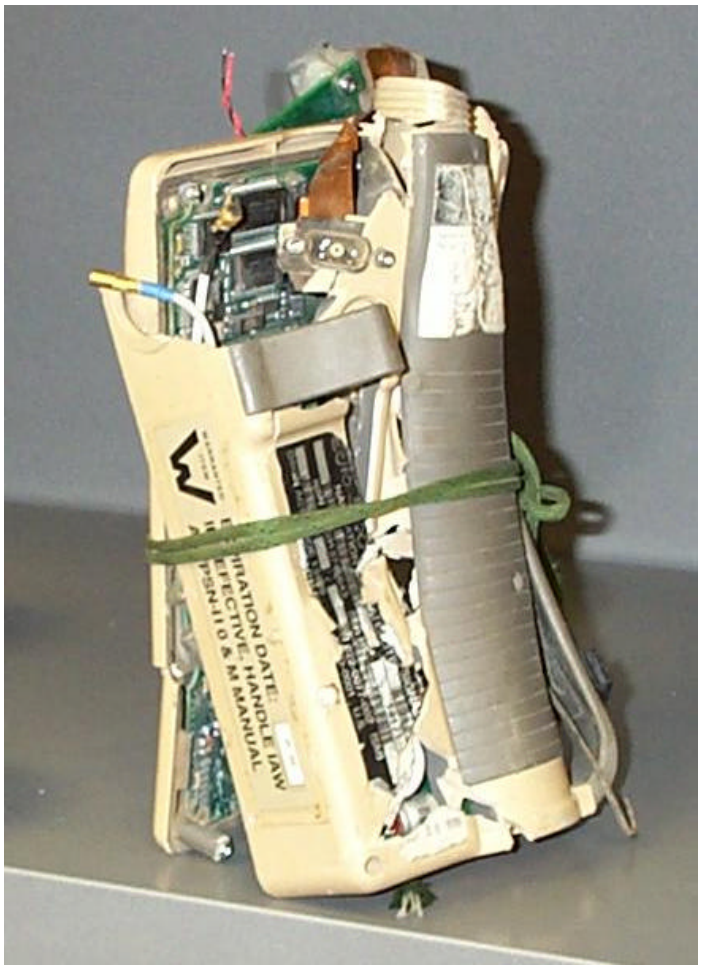
DRMOs use the advice provided by PM GPS. Here are some of the most frequently asked questions we get:

Q: Why can't we dispose of GPS receivers locally?

Military GPS Receivers contain embedded COMSEC devices which require disposal in accordance with specific procedures.

Q: Who is authorized to demil and dispose military GPS?

Although some government depots may be authorized to demil and dispose of COMSEC devices, we refer to the PM GPS guidance for a specific receiver. The newest COMSEC device called SAASM has tighter restrictions and so far, demilitarization has not been delegated beyond the OEM.



This PLGR obviously took a hit. Is it scrap? Yes. Toss it in the nearest dumpster? No! Even in this condition, a military GPS receiver has to be returned to the designated facility for proper demilitarization and disposal of the COMSEC device.

Q: Where do we find guidance on disposal.

If the DRMO can't answer your question, look at the Demil guidance at the GPS website or call or email Army Logistics at Fort Monmouth.

Q: What about commercial GPS receivers?

With the exception of the Desert Storm era SLGR, Army PM GPS doesn't provide guidance for commercial GPS receivers. Some field commands obtained local NSN assignments for commercial GPS but that doesn't mean they are "military" GPS receivers. We work with DRMO on a case-by-case basis to confirm a receiver DOES NOT contain COMSEC and to provide advice for disposal of commercial GPS receivers.

How to Contact PM GPS - https://gps.army.mil

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Who to Call for Army Issues?

Call the Army Logistics Manager for:

- Army GPS User Equipment Policy
- User Equipment Authorizations & Procurement
- Maintenance Status or GPS Loans

Call the Army Fielding Manager for Army DAGR fielding and NET issues.

Other Service/Civilian Agencies?

Contact our representatives at Warner Robins AFB, Georgia: Frank Rowe or Willie Jackson as listed in column at left.

Or use the User Information Request Form

Go to https://gps.army.mil

Open the request form at the "question?" icon on the front page or the User Request form at under the Help tab.

Or use the GPS Help Line

by contacting Mr Willie Jackson at Warner Robins GA

Please Note

We have some personnel changes pending. If you have trouble reaching anyone listed, please use the "contact PM GPS" link at our homepage and we will route your query to the right person.

Why Use Military instead of Commercial GPS?

Soldier Safety! Mission Accuracy! Signal Protection!

View the video on the GPS homepage! https://gps.army.mil