



An example of equipment in a densely packed block storage pattern that was designed using the Graphic Asset Representation module. (Courtesy photo)

Maintaining Equipment Readiness With Graphic Asset Representation

This article provides an overview of a planning tool that improves the readiness of Army pre-positioned stocks by maximizing use of indoor storage space.

■ By Lt. Col. Carl L. Hennemann

The Army pre-positioned stocks (APS) are placed around the world to reduce the time it takes to deploy equipment to a combatant command's area of operations. The APS sites are managed by the Army field support battalions (AFSBn) and Army field support brigades (AFSB) of the Army Sustainment Command,

a two-star command that is subordinate to the Army Materiel Command.

These organizations manage APS stocks by using the Army War Reserve Deployment System (AWRDS) for the receipt, storage, maintenance, and issue of APS stocks. Within AWRDS, the Graphic Asset Representation

(GAR) module provides a floor plan of how equipment is arranged in a warehouse.

This floor plan benefits the Army because it improves readiness by enabling APS managers to place more APS equipment in controlled-humidity (CH) warehouses in order to reduce deterioration and ensure materiel is in ready to use. It saves

money by optimizing space, which reduces labor cost for moving and maintaining equipment. It also provides a planning tool to determine future storage space requirements. This information can help Army leaders make informed decisions concerning military construction projects, warehouse leasing, and open storage space use.

Maintaining APS Readiness

To preserve readiness, the GAR module allows planners to maximize all of the usable square feet of CH warehouses to store as much APS equipment as possible.

Although the central aim at APS sites is to maximize space, managers must also plan for adequate room between vehicles so that personnel can conduct care of supplies in storage checks without increasing costs by having to reposition equipment.

APS storage and maintenance subject matter experts can use products from the GAR to war-game the cost-benefit of different storage configurations in order to save money. Using the GAR to reduce the amount of equipment that is stored outdoors lowers the number of man-hours required to maintain equipment by minimizing component failure and reducing the frequency of scheduled maintenance on APS equipment.

According to Technical Manual 38-470, Storage and Maintenance of Army Prepositioned Stock Materiel, most APS equipment requires a scheduled maintenance service every 48 months when stored in CH facilities. This potentially reduces maintenance hours by 50 percent because equipment stored in non-CH warehouses requires a scheduled service every 12 to 24 months.

For example, at APS-5 Qatar, the 48-month maintenance schedule (for equipment stored in CH facilities) results in less than 2,100 maintenance work orders for calendar year 2016, whereas a

24-month service schedule for the same equipment stored in non-CH warehouses would double the number of maintenance work orders to 4,200.

In addition to the increase in scheduled maintenance, data shows that equipment stored in non-CH conditions requires more unsched-

uled maintenance because of corrosion and other environmental effects.

Warehouse Organization

Using the GAR module provides AFSBns and directorate of public works master planners with the ability to determine future warehouse requirements on installations. The Department of the Army determines overall APS strategy and what unit sets will be placed at what APS sites around the world.

To ensure facility planners have the most accurate data, APS managers validate AWRDS data to ensure it includes all changes to unit sets directed by the Department of the Army. This ensures that AWRDS includes all force design updates to the modified table of organization and equipment.

The GAR module takes equipment dimensions from the Army Master Data File and places a template of the equipment within the scale drawing of a warehouse. This assists the APS manager to visualize the amount of warehouse space available and the equipment that requires it. The APS manager will then use the GAR to determine warehouse requirements based on the ideal storage configuration for that site.

At some APS sites, this could be translated into military construction requirements that may result in a host nation sharing the cost of construction projects to support mutual defense agreements.

Having a tool that can help forecast military construction requirements aids long-term planning for

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future budget requirements. The GAR can help facility planners see current space capacity and compare it to future space requirements in order to ensure today's military construction plans support future storage needs.

Preserving Equipment

According to the Department of Defense Preservation and Packaging course, corrosion-causing moisture is the number one hazard to military stocks and materiel. CH storage, when properly planned and designed, requires minimum surveillance and maintenance. However, CH systems are not maintenance free. They do require a moderate amount of inspection and preventive maintenance.

The optimal level of relative humidity for APS equipment is 40 percent, and care shall be taken to prevent the humidity from dropping below 30 percent or rising above 50 percent for extended periods of time. The best environment is one where the temperature is maintained between 60 and 80 degrees. Equipment stored in these conditions does not require extensive preservation. Controlling relative humidity prevents corrosion on metal components, prevents rubber

components from drying out, and prevents mold and mildew growth on materiel such as tents, parachutes, and military clothing.

Storage Methodology

The GAR module in AWRDS provides a tool that enables APS custodians to maximize the use of available CH warehouse space and place more equipment indoors to provide better protection from environmental hazards such as moisture, dust and dirt, sunlight, high heat, and extreme cold. These custodians consider the optimal storage configuration and clearance space required to move equipment in to and out of warehouses. Optimal configuration depends on the size, set up, and storage priorities of the APS location.

One method is to store equipment in company sets in order to facilitate

rapid issue to a deploying unit during contingency operations. Another method is to store equipment by like model in a densely packed block pattern to maximize space. A third method is to store in a back-to-back pattern in accordance with maintenance service schedules to facilitate more efficient movement from warehouse to maintenance facilities.

There are variations of storage patterns that combine the densely packed block pattern and the back-to-back pattern to merge their benefits into site-specific patterns that are based on the location of warehouse doors, floor space, and storage priorities.

Using GAR informs the planning process and allows commanders to make decisions that improve readiness, reduce costs, and provide visibility of future storage space re-

quirements. Although AWRDS and its GAR module are not well-known, its utility in maintaining APS readiness at the best cost to our Army is worth highlighting.

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Soldiers download a track vehicle from the Army pre-positioned stock at the 1st Brigade Combat Team, 1st Cavalry Division motor pool at Camp Beubring, Kuwait, Jan. 20, 2012. (Photo by Staff Sgt. Raul Tirado)