

Top 10 Logistics Centre Specialties in Equipment Upgrade/Repair Site Visit Executive Action Plan for Item Supply

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Site Visit Executive has recognised importance of strategic sourcing to be established in supply line connections for DoD as Services continue to execute work orders aimed at improving efficacy of equipment sustainment enterprise at critical Logistics Centres. Here, our goal is to create set of criteria for product support sourcing decisions so weapon system programme offices can apply smart measures early in acquisition process.

Supply Line Connection criteria will help determine if DoD enterprise has capability to sustain systems and, if not, decide if it would be beneficial to establish work order capability at Logistics Centres. If new systems can be routinely sustained within DoD mission sets, it may fit into existing enterprise structures & available capabilities with potential to be expanded, if necessary to meet expanding field-level demands.

How does Logistics Centre systems approach work? It develops criteria for prioritising spares item component procurement established in supply line connections using sequence assignment techniques. Candidate buys derived from supply line connections are ranked in order of cost/benefit ratios i.e., improvements in availability from adding spares to mission cache divided by the unit cost, then incrementally added to sparing solutions in diminishing order until target availability and acceptable fiscal goals are reached.

The framework presented in this report addresses these sustainment planning challenges in several ways. First, the approach presented here provides for repeatable, model-based decision tool not to require large amount of detail requirements. Instead, we propose using readily available upgrade/repair work order information in Logistics Centre supply line connection catalogues of field-level component demand.

Second, this approach applied at Logistics Centre considers upgrade/repair source decision making in context of broader DoD enterprise. That is, we examine large, complex “systems of systems,” such as fighter aircraft, from the perspective of technologies and subsystems, some of which are common across different aircraft.

Finally, concepts promoted in this report are potentially applicable to other aspects of sustainment planning, such as directing upgrade/repair sourcing mixes and informing other DoD sustainment responsibility structures. We have detailed critical factors to include Logistics Centre activation, life-extension work order engineering, supply line connection establishment & product support integration.

DoD guidance states Logistics Centre work orders must be assigned on basis of best-value determination for meeting field-level demands. But this guidance does not specify how to

determine “best value.” To help fill this gap, this report presents an approach to determining best value when assigning Logistics Centre workloads.

Spare item component models are flexible/adaptive to allow for extensive variation in user-defined systems and field-level mission scenarios. Although some Logistics Centre Users focus model on estimating field-level demands for spare components to only most critical items under constant i.e., steady state operating conditions, other users consider every repairable item over wider ranges of operating conditions.

In either case, once system and field-level demand scenarios are defined, the basic question for users at Logistics Centre remains the same: What mix of spare parts is required to keep system at some desired level of operational availability so specific work orders can be executed within acceptable time frames?

In the longer term, well designed system-oriented models can help shape future sustainment enterprise by giving DoD opportunity to examine subsystems across weapon system Types. In doing so, Logistics Centres are required to evaluate effects of new or emerging technology on its subsystem strategies. The model determines component requirements based on explicit contribution of each item to overall performance of the system.

The probability-based component model to be utilised at Logistics Centre employs systems approach to produce optimal spare part solution for critical equipment. This means solutions are realised where no other mix of items can provide greater, system-wide effect on work orders. In fact, systems approaches we have presented do not produce only one solution, but an entire range of smart solutions meeting field-level demand signals.

The model can deal with many different operating scenarios and changes during the course of a field-level mission scenario. For example, operating tempo may be steady state, dynamic, or both. Also, equipment upgrade/repair and resupply may be suspended for some time periods, maintenance training techniques may change as result of common system implementation progress, etc.

When Logistics Centres perform work order reviews across weapon systems and across technology types, DoD will be better positioned to identify sustainment system it would like to have in the future. This framework can also inform decisions about other product support activities, such as establishing quality supply line connections or improvements in sustainment engineering process.

For example, information derived from framework can support decision making when there are field-level demand options for division of Logistics Centre work orders between product support providers. Moreover, we have established potential of framework to inform discussions between weapon system designers and DoD concerning engineering projections of reliability and equipment upgrade/repair parameters by providing basis for comparison with reviews of legacy aircraft.

Logistics Centre provides functional parts to meet DoD requirements for equipment subject to

normal field-level demands driven by equipment wear/tear associated with real-world, mobile missions to planned upgrade/repair intervals. The ability to execute work order tasks on subsystems such as overhaul of structural elements, engines, electronics, hydraulics, etc. can be realised to ensure operational success in real world, mobile scenarios.

Logistics Centre Repair Engineering Team is dedicated to establishing new enhancements in upgrade/repair reliability to increase mission readiness of weapons systems. Spare parts are ordered by DoD through a variety of supply line connection contractual agreements to support field-level flight line demands & Logistics Centre equipment upgrade/repair requirements in work orders.

Using requirements capability of component model is well established so Logistics Centre Users enter availability specifications and optimal spares mix is determined so field-level target is reached. The spares requirements can support new systems e.g., initial provisioning or existing systems e.g., periodic replenishment.

Work order valuation capability approaches spare component mix problem from opposite direction. The evaluation mode of the model enables Logistics Centre Users to select required item mix, prior to determination of system availability provided by specified mix under many potential field-level conditions.

The Model also considers several item-specific factors, such as changes in field-level demand signals per flight sortie operating hour, Logistics Centre upgrade/repair times, transit times, supply line connection quality/quantity per application, and procurement lead-time.

Catalogues of previous supply line connection runs are established for comparative purposes. Retrieval capabilities provide Users with easy way to save/restore spares assessments i.e, model output along with related item-level information i.e., model input in user-specified locations.

The model allows users to compare variety of input/output results at both item & system levels. For instance, users can compare any two model-generated spare component requirements for identical weapon systems. By simply selecting the two previous model results, side-by-side comparisons of the spares requirements are presented and sorted so items are displayed by order of increasing or decreasing differences.

To ensure availability, Logistics Centre maintains large supplier base with expertise in supply line connection participation to provide semi-finished items for final processing at Logistics Centre. All supply line connection inputs to Logistics Centre must satisfy stringent, quality work order standards established by DoD for uncompromised mission readiness.

Logistics Centre Upgrade/repair Clinic process is typical of aggressive approaches to determination of field-level demand levels so work order cost/benefit determinations are brought to bear on equipment ownership status. With Upgrade/repair Clinic, high volume/high value items in DoD scrap bin are evaluated and upgrade/repairs are performed so parts with reliable/quality characteristics are utilised.

Logistics Centre has established large work order portfolios with constant growth in upgrade/repair capabilities, thanks to establishment of Repair Clinics and engineer teams—innovators who are constantly looking for supply line connection solutions to emerging materiel stress conditions defined by field-level demand scenarios.

Logistics Centre provides site planning services so DoD can establish its own equipment upgrade/repair capabilities at Field-level, as well as test cell for field-level operations or work order expansion programmes. These services can range from simple Logistics Centre summary assessments to on-the-spot detailed status reviews of field-level demand signals.

We have promoted design of models focused on doing one thing very well: assessing availability-based component work order recommendations for critical systems at established Logistics Centres. The model is not fully featured, integrated component solution for absolute assessments of field-level demands. More realistically, it is robust, highly adaptable assessment tool expressly designed for answering complex fiscal/availability challenges pervasive at DoD. In this context, component model is perfect complement to tactical/execution capabilities of many mission packages.

As a result of these reviews, Logistics Centre can provide DoD with Job Site Layouts showing team locations, work order flow and equipment placement. Logistics Centre can also recommend required site equipment and estimate cost/benefit of supply line connection results to bottom line of DoD operations.

Training in work order design/utilise is offered to DoD for field-level and Logistics Centre equipment upgrade/repair. An advantage of providing field-level training at other locations is so DoD can avoid extended time away and expenses for its maintainers.

Training at Logistics Centre offers world class work sites with modern training tools for critical equipment support required by DoD. Subject areas covered in maintenance training include subsystem exposure, test cells for field-level operations, Upgrade/repair testing of system controls and work order procedures.

In addition to providing Site work order planning services, Logistics Centre provides additional consulting services so supply line connections are established to improve potential of realising ambitious goals of being productive/efficient leading to best satisfaction of DoD readiness requirements based on field-level demand signals.

Logistics Centre utilises equipment upgrade/repair manuals updated to include product support status, service bulletins, special instructions, illustrated parts catalogues, other technical documents and training materials in executing work orders at Job Sites. All supply line connection reference materials are continuously updated to incorporate latest status configurations, upgrade/repair processes & operating recommendations.

Site Visit Executive has created state-of-the-art administrative structures for materiel product support to meet field-level demands and offer complete work order capability advantages. By using results from supply line connections, DoD can take advantage of Logistics Centre

unparalleled strength in supplier status updates to minimise delays in real-world, mobile part delivery and improve cost/benefit equation of missions executed by the Force.

Logistics Centre takes care of your aircraft so you can focus on flying. Logistics Centre services include:

1. Parts Requirements Forecast for Work Orders
2. Secured Materiel to Support Schedules
3. Upgrade/repair Sourcing Administration
4. New or Serviceable Materiel as Scrap Substitute
5. Dependable Work Order Turn-around Times
6. Focus on Item Type Source Availability
7. Common Component Scale Economies
8. Specific Item Location Model Input/Output
9. Side-by-Side Item Requirement Comparisons
10. Equipment Commonality & and Item Quantity