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REPORT ON AFLC LEVEL I SHORTFALLS TO DIRECTORATE OF LOGISTICS MANAGEMENT. (U) BATTELLE COLUMBUS LABS OH B B GORDON ET AL. 26 MAY 81 F33600-80-C-0414

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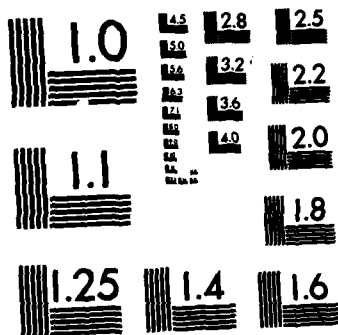
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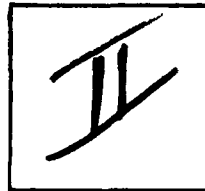


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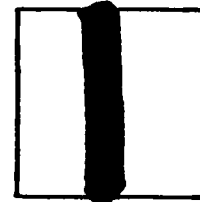
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REPORT

on

AFLC LEVEL I SHORTFALLS

to

DIRECTORATE OF LOGISTICS MANAGEMENT
SYSTEM REQUIREMENT (XRB)
DCS/PLANS AND PROGRAM
AIR FORCE LOGISTICS COMMAND
WRIGHT PATTERSON AFB, OHIO 45433

(Contract No. F-33600-80-C-0414)

May 26, 1981

by

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AFLC LEVEL I SHORTFALLS

The following material lists seventeen major AFLC shortfalls compiled from official Air Force planning documents. Appended to each shortfall is a list of alternative approaches and subapproaches along with a note linking the approach to the AFLC document from which it was extracted.

Figure 1 presents a tree structure showing the relationship between the seventeen shortfalls. When two shortfalls (blocks) are connected by a line, it means that the lower block supports the upper block. In other words, the higher shortfall should answer why the lower shortfall must be reduced or eliminated. The lower shortfall should describe how the upper shortfall may be reduced or eliminated. The three lowest level shortfalls are shown as supporting all of the other shortfalls. The relationships shown in Figure 1 resulted from Battelle's ISM session with middle and top level AFLC management and from discussions with other key AFLC personnel. A listing of sources appears at the end of the document along with definitions for all acronyms used in the text.

This shortfall document represents Battelle's final output from Level I Backfill and is designed to contribute directly to Level II and III planning.

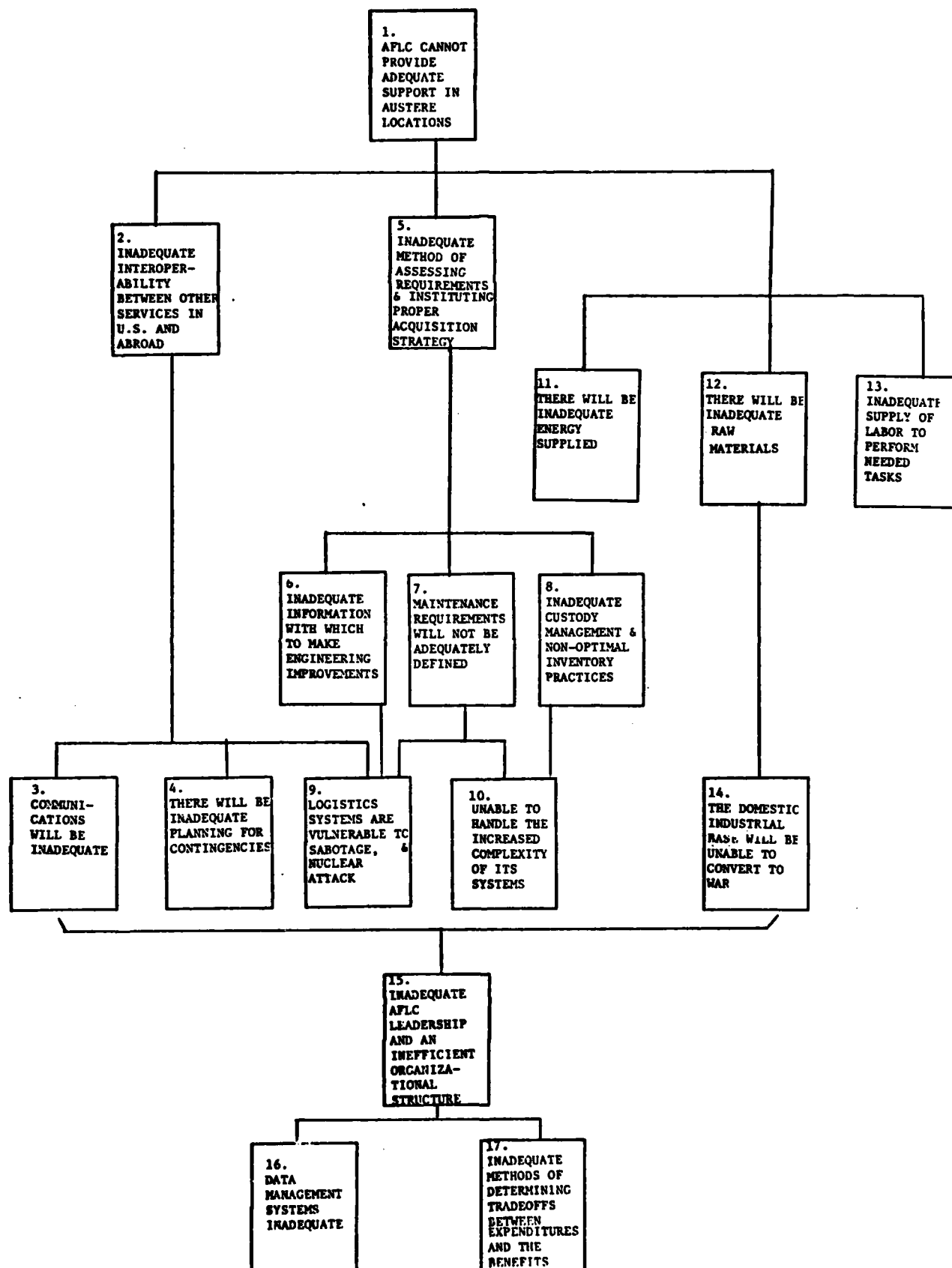


FIGURE 1. AFLC LEVEL 1 SHORTFALL TREE

Shortfall 1: AFLC cannot provide adequate support in austere locations.

- To enhance airlift and sealift capability to support global logistics strategy (OPR: AF/XOX - OCR: AF/LET).* (3, p.6)**
 - to provide extensive strategic airlift and aerial refueling capability. (5, p.7)
 - to acquire Air Force organic intratheater airlift to provide timely asset redistribution. (3, 3d., p.5)
 - to establish the high priority of logistics to assure delivery. (3, 4b., p.5)
 - to improve control of shipments, expedited airlift clearance action, and better use of airlift capability. (2, 8.2.4 p.32) (5, p.66) (5, p.7)
 - to support introduction of the C-X to provide increased airlift capability. (5, p.42)
 - to have C-141 and C-5 forces surging to very high utilization rates with adequate air crews and logistics support. (5, p.42)
 - to have a greatly expanded CRAF capability fully accepted by commercial airlines. (5, p.42)
 - to develop expanded port capacity, material handling equipment, and air refueling capability. (5, p.43)
 - to retain existing airlift systems in the active inventory longer. (5, p.43)
- To develop an improved weapon system information system. (6, p.D-21)
 - to develop an appropriate collection, assessment and reporting system for quality assurance. (6, p.D-23)
 - to assess systems logistics combat capabilities in terms of responsiveness and sustainability for given activity levels in increments of time. (6, p.D-21)
 - to provide adequate asset visibility to assure effective support of combat forces. (6, p.D-20)
 - to include timely knowledge of asset availability, condition and location. (6, p.D-20)
- To manage rapidly changing situations in remote areas of the world. (5, p.35)

* See Acronym List, Page 35

** See Source List, Page 34

- to develop a real-time response communication network between TCC, MAC, MSC, and MTMC. (2, 8.2.4, p.32) (5, p.66) (5, p.35)
- to have direct interface between all LOGAIR stations and TCC to expedite airlift clearance actions. (2, 8.2.4, p.32)
- To determine serviceability and introduce alternative items, materials, or design. (6, p.D-23)
 - to design equipment to minimize shipment preparation and set-up time. (OPR: AFSC - OCR: AFLC) (3, p.6)
 - to provide item substitution data. (6, p.D-20)
 - to reduce level of restraint of logistics on the operating forces. (5, p.42)
- To improve the capability of logistics to function in an austere environment. (OPR: AFLC - OCR: AFSC) (3, p.6)
 - to have logistics geared to support smaller deployment packages - not requiring extensive facilities and support equipment. (5, p.40)
 - to utilize more built-in-test equipment, self regenerating, and electronic redundancy built into airframe to enhance all-weather ground attack capability. (5, p.41)
 - to design logistics equipment to minimize transportation requirements. (3, p.6)
 - to increase requirement for more comprehensive support kits. (5, p.7)
 - to reduce to a minimum the requirement for maintenance and support services to be performed by operational units engaged in a mobile combat role. (6, p.D-19)
- To increase interoperability and bilateral logistics support arrangements with other friendly nations. (3, p.19)
 - to develop a comprehensive policy for logistics support of supplied equipment to other friendly nations. (3, p.19)
 - to better handle requirements and demands on AF logistics which will, in many cases be driven by forces outside the control of the AF. (3, 12a., p.18)
 - to improve arms transfer mechanism. (3, 12b., p.18)

- to provide item substitution data and asset visibility for those items identified for interoperability between national forces (6, p.D-20)
- to improve ability to logistically support US forces in Latin America. (3, 12e., p.19)
- to improve knowledge of or influence over the logistics capability of the Latin American countries. (3, 12e., p.19)
- To increase support in austere locations. (3, 8b., p.13)
 - to provide wartime support in likely combat areas when required. (3, p.13)
 - to develop a logistics capability postured to support U.S. forces engaged in varying levels of conflict either independently or in connection with other friendly nations. (4, p.7)
 - to improve systems and procedures to prepare, maintain and protect prepositioned resources (OPR: AF/LEY - OCR: USAFE/PACAF). (3, p.6)
 - to procure additional resources to allow for prepositioning (OPR: AFLC - OCR: AF/LEX, AF/LEY) (3, p.6) (3, p.3)
 - to support the world-wide tactical mission. (6, p.D-6)
- To organize and structure the AF logistics system to support the shortfall. (6, p.D-3)
 - to have adaptable and flexible mobile supply and maintenance activities. (6, p.D-6)
 - to assure balanced logistics support of weapons systems based on priority of need. (2, 2.5.4., p.12)
 - to develop interface between AFLC's LCA assessment model and the FYRP. (2, 2.5.4., p.12)
 - to have a logistics infrastructure that can be tailored on short notice to meet a wide range of military operations. (3, 8b., p.13)
 - to implement IM procedures for items managed outside the AF logistics structure. (6, p.D-20)
 - to reduce distribution pipeline and storage costs. (5, p.66)
 - to develop overseas in-theater depot repair. (5, p.66)
 - to increase emphasis on logistics sustainability. (5, p.66)

- to design new mixes of prepositioning, accompanying support, host nation support, and follow-on support. (5, p.8)
- to maintain and support operational units in a mobile combat role. (6, p.D-19)

Shortfall 2: There will be inadequate interoperability between other services in U S and abroad.

- To plan with Air Staff and other military agencies on interservice approach that will meet logistics requirements under all conditions.
 - to share information between services regarding assets and usage of items used by the Air Force and other services and items managed by the Air Force. (2, 7.5, p.30)
 - to develop interface between AFLC data base and similar data bases of other services and the Defense Logistics Agency. (2, 2.3.4., p.11)
- To provide timely logistics support to all DOD activities. (2, 2.3.4., p.11)
 - to consolidate AF logistics functions with those of other services/agencies. (5, p.67) (5, p.79)
 - to integrate international logistics support and to centralize logistics within the DOD. (1, p.37)
 - to strive to insure maximum use of logistics resources under the control of other U.S. military or civilian government agencies. (1, p.31)
- To increase cooperation and exchange with other friendly nations. (4. p.7)
 - to improve understanding of foreign culture, law, language. (1, p.14)
 - to adapt to changes caused by the introduction of more foreign contractors. These changes are with respect to international law, differences in vulnerability, language, and cultures. (1, p.14)
 - to increase direct logistics planning, training and personnel exchange program with key allies. (4. p.8) (1, p.12)
 - to find ways of measuring the impact of problems and communicating their relative weight in comparison to the diplomatic niceties of the situation. (1, p.38)
- To find a way of becoming the theatre commander's right arm for all logistics problems (at least at the wholesale level). (1, p.37)

- To increase legislative flexibility to reduce response time (3, p.19)
 - to make case for enough funds to maintain "warm" pipeline. (1, p.31)
 - to fully recover the cost of FMS. (5, p.79)
- To use foreign country logistic support. (6, p.D-5)
 - to have visibility of the status and capability of depot-level maintenance and supply facilities. (6, p.D-5)
 - to have visibility of the status and capability of air and seaport, terminal, highway, and pipeline facilities. (6, p.D-5)
 - to encourage mutual support between U S and other Air Forces. Integrate logistics systems to the extent feasible within the constraints of operational requirements and national legal and policy considerations. (4, p.7)
 - to assure management access to its share of items pooled for repair at both CONUS and foreign facilities. (5, p.79)
- To provide a comprehensive program of international logistic assistance to meet the needs of FMS customers without degrading support for U.S. Forces. (4, p.9) (5, p.79)
 - to support systems that are common to USAF and allies. (6, p.D-17)
 - to develop a comprehensive policy for logistics support of any USAF supplied equipment in other Air Forces. (4, p.8)
 - to define logistics support responsibilities for systems and equipment possessed by other nations. (6, p.D-5)
 - to develop wartime computation system to compute spares for allied Air Forces operating US origin equipment. (6, p.D-17)
 - to provide allowance for quick response and increased U.S. presence that would permit US to provide lateral logistics support to friendly nations (3, 12b, p.18)
- To track the degree to which planned allocations of resources is carried out. (1, p. 38)

- To support coalition warfare and combined arms operations within NATO. (5, p.79)
- To make NATO capability available through rationalization, standardization, interoperability (RSI) efforts. (5, p.40) (5, p.79) (1, p.12)
 - to obtain critical/urgently needed supplies and equipment that are excess to their requirements from allied Air Forces. (6, p.D-17) (1, p.29-30)
 - to establish pre-agreements for use of such supplies and equipment. (6, p.D-17)
- To improve arms transfer mechanism. (3, 12b., p.18)
- To maintain accurate assessment of U.S. industrial capability and capacity available for war. (1, p.30)
- To insure sufficient overseas Security Assistance organization. (3, p.19)

Shortfall 3: Communications will be inadequate.

- To ensure a secure and servicable logistics command, control, and communication (C³) system. (3, 3d., p.5) (6, p.D-14)
 - to be secure from counter-intelligence activities. (6,p.D-4)
 - to be secure from battle damage. (6,p.D-4)
- To assure wartime logistics communications in the 1990's. (5, p.52)
 - to develop wartime communication system for logistics data, text, and visual and graphic images. (6, p.D-4)
 - to increase effectiveness of communication system that may be saturated or interdicted during a conflict and available for only limited use. (3, 3b., p.4)
- To develop lines of communication to support fixed and mobile AF operations world-wide. (6, p.D-14)
 - to have communications that provide in transit asset visibility, item identification, and receipt notice. (6, p.D-14)
 - to have communications provide availability of transportation modes, and condition and status of port operations. (6, p.D-14)
- To assure responsive support when data transmission is reduced during wartime. (6, p.D-2)

Shortfall 4: There will be inadequate planning for contingencies.

- To increase operations planning and crisis management capabilities. (2, 2.6.4., p.13)
 - to expand analysis capability of Logistics Support Analysis (LSA) process including analysis of data of current operational and support capabilities as provided by AF Logistics Support Management Systems. (2, 4.2.4., p.18)
 - to influence timely corrective remedial actions. (6, p.D-21)
- To establish direct links between the LSAR and AFLC data management systems to fully automate the integration of logistics management planning. (2, 4.3.4., p.19)
 - to develop a host computer capable of interaction with the Air Staff and Major Commands in the Joint Operational Planning System and the World Wide Military Command and Control System. (2, 2.6.4., p.13)
 - to maintain visibility of resources. (6, p.D-21)
 - to maintain visibility of operational constraints. (6, p.D-21)
- To analyze logistics related activities associated with the pre-concept and concept formulation period of mission analysis and planning. (2, 4.2.4., p.18)

Shortfall 5: There will be an inadequate method of assessing material and personnel requirements and instituting proper acquisition strategy.

- To assure realistic wartime requirements computations. (6, p.D-9, 10)
 - to compensate for losses during hostilities. (6, p.D-9, 10)
 - to have wartime spares computation reflect the wartime environment. (6, p.D-9, 10)
 - to have base/depot repair rates condemnations, pipeline times etc. adjusted for wartime computations. (6, p.D-9,10)
 - to provide rapid new computations as significant factors change. (6,p.D-9, 10)
- To improve requirements computation process. (3, 2b., p.3)
 - to compute requirements for resources not managed or provided by AFLC (e.g., housing, commercial vehicle parts, local purchases). (6, p.D-9, 10)
 - to have spare computations for tactical forces that consider system effectiveness. (6, p.D-9, 10)
 - to have stockage policy that includes imperfect distribution and acquisition processes. (6, p.D-9, 10)
 - to develop a method of computing the requirements for critical materials. (1, p.16)
- To redesign, enhance, and integrate the Requirements Logistics Management Systems into a comprehensive Requirements Data Base with simulation and modeling capability as well as computational methodologies based on flying hours, sorties deployment, weapon system type, and war scenarios. (2, 3.5., p.16)
 - to compute trade-off between work stoppage and parts obsolescence when determining material requirements for repair. (2, 9.5.4, p.37)
 - to develop minimum and maximum parts supportability models. (2, 9.5.4., p.37)
- To determine effects of policy or program changes, or funds shortages, on Air Force requirements logistics support; flexible methodologies for computing logistics requirements. (2, 3.5., p.16)
 - to evaluate and justify original automation hardware and software as well as enhancements and capital replacements. (1, p.38)

- to subject AF acquisition strategy to an affordability review early in the development programs. (3, 10b., p.14)
- To improve the weapon system information system. (6, p.D-21)
 - to state logistics requirements in terms of specific force capabilities. (1, p.36)
- To better handle requirements and demands on AF logistics which will, in many cases, be driven by forces outside the control of the AF. (3, 12a., p.18)
 - to monitor allied forces requirements. (6, p.D-21)
- To reduce unfilled requirements for stockpiling current munitions. (3, 10b., p.14)
 - to increase war reserve material requirements for both in-place and deploying forces. (5, p.68)
- To be prepared to handle large modifications in a way similar to existing capability for handling large complex new acquisitions. (1, p.12)
- To task technology to stress increased storage and transportation flexibility by increasing lethality while decreasing explosive contents. (3, 10c., p.14)

Shortfall 6: There will be inadequate information with which to make engineering improvements.

- To improve AFLC's ability to assess aircraft structural performance and deficiencies. (2, 10.2.4.a, p.41)
 - to acquire data regarding aircraft structural safety limits and economic life span. (2, 10.2.4.b., p.41)
- To support application of new technologies in data acquisition, processing, analysis, and engineering prediction to structural service life monitoring programs (ASIMIS) (2, 10.2.4.a., p.41)
 - to provide analysis of oil samples by applying mid-term, automated techniques to the collection, analysis and predictive capabilities. (2, 10.2.4.d, p.41)
 - to apply the reliability and maintainability management information system developed for the F-16 (RAILS) to other major weapons systems. (2, 10.2.4.c., p.41)
- To have more effective and accurate data to promote informed decisions regarding repair and overhaul of engines. (2, 10.2.4.d., p.41)
- To improve reliability and enhance the use of improvement warranties once they are implemented on a large scale. (2, 10.3.4.a., p.42)
- To develop better informational support of engineering decisions. (2, 5.5, p.24)
 - to develop a computer system capable of storing and retrieving engineering data and 10 million drawings now mounted on aperture cards. (2, 5.5., p.24)

Shortfall 7: Maintenance requirements will not be adequately defined.

- To improve accuracy and responsiveness of shops responsible for repair and maintenance of material. (2, 9.2.4., p.36)
 - to reduce unacceptable level of overall maintenance down time. (6, p.64)
 - to provide more field level inspections. (5, p.64)
 - to conduct more repairs while aircraft is in the depot. (5, p.64)
 - to provide for greater control of maintenance shop activities. (2, 9.4.4 p.37)
 - to develop control processes tailored to workload characteristics and repair procedures of a particular shop based on planning, workloading and accounting systems. (2, 9.4.4., p.37)
 - to provide on-line diagnostic assistance to maintenance technicians. (2, 10.3.4b, p.42)
- To promote centralization and automation of workload resource analysis and long-range schedule development. (2, 9.2.4., p.36)
 - to produce workload plans mechanically on a real-time basis from existing data. (2, 9.3.4., p.37)
 - to accommodate change in the kind and amount of work done in the depot maintenance facility. (5, p.65)
 - to accommodate decline of peacetime depot maintenance workload. (5, p.68)
- To assure that repair and maintenance equipment and procedures are in tune with the new and increasingly sophisticated weaponry entering the inventory.
 - to quickly diagnose and repair increasingly sophisticated weapons systems. (2, 10.3.4b, p.42)
 - to provide for system modifications which will increase. (5, p.65)
 - to maintain longer MTBF equipment. (5, p.65)

- To provide suitable levels of wartime maintenance. (6, p.D-5)
 - to insure performance of engaged combat force maintenance requirements. (6, p.D-16)
 - to consider wartime situation, location, transportation, manpower, and communications. (6, p.D-5)
 - to integrate in-theatre serviceable stocks and off-system maintenance at a rear-echelon point with use of rapid supply. (6, p.D-4)
 - to maintain combat logistics support squadrons' skills for purposes such as battle damage repair. (5, p.65)
- To provide support tailored to the operational mission. (6, p.D-4)
 - to maximize base maintenance self-sufficiency for one-time application of force from fixed basing. (6, p.D-4)
 - to promote on-system maintenance for mobility and flexibility. (6, p.D-4)
 - to possess sufficient reserve/back-up maintenance capability to insure excess. (6, p.D-16)
- To maintain organic capability to provide the desired flexibility to respond to unpredictable contingencies. (5, p.65)
- To promote ALC's unique maintenance capabilities to respond to unforeseen problem. (5, p.65)

Shortfall 8: There will be inadequate custody management and non-optimal inventory practices.

- To develop ability to cope with surges in warehouse inventory. (2, 6.2.4., p.26)
 - to provide reserve warehouse storage and extraction capability. (2, 6.2.4., p.26)
 - to provide mechanization of inventory sub-process to include the physical count. (2. 6.3.4., p.26)
 - to provide capability to improve the condition of material in storage. (2, 6.4.4., p.27)
- To improve custody management information system. (6, p.D-13)
 - to have timely information on status and location, by serial number for selected items, for each exchangeable item, and for consumable items. (6, p.D-12-13)
 - to assure positive tracking of items to an overhaul facility. (6, p.D-12)
- To insure optimum use and availability of assets to engaged combat forces. (6, p.D-12)
 - to provide on-call visibility of item and equipment substitution for critical items required by units engaged or to be deployed in combat. (6, p.D-24)
- To assure that needs and characteristics of items are considered in design of storage, preservation, and inspection. (6, p. D-13)
 - to assure that security and accountability are also important considerations. (6, p.D-13)
- To increase control of government furnished material. (2. 9.8.4., p.38)
- To control contractor requisitions at the national stock number level. (2, 9.8.4., p.38)

Shortfall 9: Logistics systems are vulnerable to sabotage, terrorist activities, and nuclear attack

- To protect AFLC logistics systems from terrorist activities and sabotage. (1, p.23)
 - to reduce ADP wartime vulnerability. (5, p.62)
 - to improve security at overseas areas for logistics operations. (5, p.11) (3, p.13)
 - to reduce vulnerability of bases and lines of communication to attack. (3, 8b, p.13)
 - to harden and/or disperse logistics resources. (3, 5, p.7) (5, p. 10)
- To optimize the prepositioning of material, implementation of in-theatre depots, and logistics command and control communications system. (1, p.24) (1, p.19)
 - to support smaller deployment packages. (1, p.18)
 - to develop pre-planned deployable support kit. (5, p.62)
- To realistically consider vulnerability in designing and fashioning our logistics capabilities and organizations. (1, p.23) (3, p.6) (3, p.7) (5, p.10)
 - to consider survivability and effectiveness of logistics personnel when designing new protective clothing. (3, 5, p.7)
- To provide backup logistics capability. (1, p.24) (5, p.62)
 - to establish redundancy for critical logistics functions. (3, 5, p.7)
 - to improve the capability to reconstitute critical logistics functions after attack. (3, 5, p.7) (1, p.24)
 - to work toward less reliance/dependence on individual assets. (3, 5a, p.6) (1, p.19)
- To provide a mechanism for transferring skills and operations from one source to another. (1, p.26)
 - to quickly move logistics equipment and activities in the event of threat of attack by enemy forces. (1, p.24)
- To limit dependence on allies. (1, p.24)

Shortfall 10: AFLC will be unable to handle the increased complexity of its systems resulting from expanded technology.

- To manage the advanced weapon systems of the 1990's effectively. (5, p.35) (1, p. 15)
 - to reduce support manpower and maintenance costs resulting from "throw away" electronics. (5, p. 62)
 - to provide closer integration between depot and field operations for configuration control purposes. (5, p. 63)
 - to evolve two basic echelons (flightline and depot) of repair (5, p.50)
 - to increase emphasis on security while system is stored, repaired, or transported. (5, p.50)
 - to not accept contractor capability as an automatic compensation for lack of organic capability. (1, p.15)
- To advance information processing technology (5, p.35)
 - to improve infrastructure to take advantage of the coming era of computational plenty. (5, p.62)
 - to handle proliferation of embedded computers and data processors by assuring adequate supply of computer programmers and software technicians. (5, p.62)
 - to support digital microminiaturization and improved component characteristics/greater system complexity/reduced overall systems reliability/greater security sensitivity. (5, p.49)
- To increase complexity and sophistication at the depots.
 - to support use of composite materials. (5, p.44)
 - to use new tools and equipment. (5, p.44)
- To support Air Force role in space systems. (5, p.46)
 - to pursue new space logistical support concepts. (5, p.46)
 - to develop new methods to prepare, package, store, and distribute parts in space. (5, p.46)

- To operate higher technological and more sophisticated industrial and maintenance equipment. (5, p.26) (5, p.44)
 - to exploit training aids to keep the workforce abreast of technology. (1, p.15)
 - to develop new skills to maintain equipment and its associated software. (5, p.46)
 - to provide test equipment and technicians to support more sophisticated and expensive repair requirements at both base and depot. (5, p.50)
 - to support more capital intensive, less labor intensive industrial processes. (5, p.26)
 - to adapt to changes in recruiting and retention policies for both civil service and military personnel. (5, p.27)
- To become fully aware of what industry's capabilities are with respect to AFLC requirement. (1, p.15)
 - to aggressively use sophisticated automated industrial equipment. (1, p.15)
 - to increase use of contractor and commercial depot support. (5, p.66)
 - to consolidate repair facilities (organic or contractor) to fully capitalize the expensive support costs. (5, p.47)
- To increase automation in materials handling information systems. (5, p.66)
 - to support advances in automated marking and reading symbology. (5, p.66)
- To maintain a greater age spectrum of weapon systems in the 1990's. (5, p.36) (1, p.23)
 - to increase post development engineering changes and modifications. (5, p.36)
 - to increase developmental engineering capability. (5, p.36)
 - to accommodate the increase in modifications. (5, p.36)

Shortfall 11: There will be inadequate energy supplied.

- To adapt to industrial plant modernization. (5, p.32)
 - to reduce energy consumed by logistics facilities. (5, p.71)
 - to maintain energy efficient equipment and facilities, even if some productivity must be sacrificed. (5, p.71) (5, p.12, 23)
 - to acquire more skilled civilian and military labor force. (5, p.33)
 - to consider energy sources and cost-effectiveness in organic and contract workload assignments of critical, strategic workload. (5, p.32)
- To become energy independent by the year 2000. (1, p.36)
 - to consider both decreasing manpower and decreasing energy in selecting alternatives. (5, p.73)
 - to insure the availability of necessary energy to support AFLC's critical operations in wartime, even if it means increased peacetime expenses. (5, p.73)
 - to reassess logistics policies developed during a period of cheap energy in accordance with forecasted energy scarcity. (1, p.14)
- To use alternative fuels. (5, p.23)
 - to better handle the availability and high cost of fuel. (5, p.23) (5, p.70,73)
 - to encourage development of commercial domestic synthetic fuel to replace limited energy sources. (3, p.12)
 - to reduce impact of regional differences in availability of energy. (1, p.42)
 - to improve support of unique renewable sources of electrical power in the M-X. (5, p.38)
- To support Air Force productivity improvement. (5, p.32)

- to support fuel-efficient weapon systems. (5, p.23,24)
- to reduce peacetime flying hours without losing combat readiness. (3, 7b., p.10) (5, p.6)
- to reduce peacetime flying hours through use of simulators. (5, p.24)

Shortfall 12: There will be inadequate raw materials.

- To encourage coordinated policies on critical raw materials with countries receiving U S logistics support. (4, p.8)
 - to encourage mutual interchange of energy support technology with other nations. (4, p.8)
- To insure that the process should be particularly responsive during wartime. (6, p. D-15)
- To establish a comprehensive management program for critical and strategic raw materials. (4, p.8)
 - to improve material deficiency analysis programs (6, p.D-15)
 - to include reliability and maintainability consideration. (6, p. D-15)
 - to be responsive to natural resource changes. (3, p.12)
 - to develop a method of computing the requirement for critical materials. (1, p.16)
- To improve availability of vital natural resources. (5, p.15)
 - to increase reclamation and recycling programs for critical raw materials. (3, p.12)
 - to develop resource recovery processes for reuse of materials critical to AF operations. (5, p.75)
 - to respond to unsatisfactory level of natural resources increasing the cost of fuel. (5, p.14)
 - to resupply from remote areas or CONUS. (5, p.18)
- To reduce dependence on foreign or individual sources. (3, 7c, p.10-11)
 - to reduce dependence on unstable nations for natural resources. (5, p.23)
 - to resupply from remote areas or CONUS. (5, p.18)
 - to develop a limited organic manufacturing capability. (5, p.75)
 - to implement necessary policy and procedures. (6, p.D-2)
 - to insure maximum use of logistic resources under the control of other sources/agencies.

- to avoid success dependence on other countries. (1, p.36)
 - to not become success dependent on foreign logistics support (1, p.31)
 - to develop information showing weapon and force sensitivity to interruptions including alternative supplies. (1, p.32)
 - to establish contingency plans to counter increasing source dependencies for such things as materials, and finished products. To assess the impact of source dependencies.
- To maintain an adequate strategic reserve. (5, p.75)
 - to encourage national stockpiling of critical resources (5, p.15) (1, p.15)
- To attain self-sufficiency in energy production for industrial processes by the year 2000. (4, p.8)
- To develop more efficient processes to reduce use of non-renewable resources. (5, p.15)
 - to research and develop more efficient manufacturing and repair processes for non-renewable resources. (3, p.12)
 - to initiate programs that will improve the energy efficiency of Air Force systems and facilities and that will aid in the development of domestic alternative energy sources. (4, p.8)
 - to encourage U.S. industrial efficiency in using strategic raw materials to meet military requirements. (4, p.8)
 - to maintain adequate strategic reserve to compensate for increased manufacturing lead times involving the use of limited raw materials.
- To develop alternative sources and substitute materials. (5, p.15) (6,p. D-11) (1, p.15)
 - to develop a substitution acquisition policy for local purchase items in forward areas. (6, p. D-11)
 - to encourage development of substitute materials to replace non-fuel mineral sources. (3, p.12)
 - to develop a management system to collect, identify and code substitute items and materials. (6, p. D-11)
 - to encourage development of commercial domestic synthetic fuel to replace limited energy sources. (3, p.12)

Shortfall 13: There will be an inadequate supply of labor to perform needed tasks.

- To maintain a human resources procurement and development program which will insure that a workforce of appropriate skills, military/civilian mix, and numbers is available in wartime. (4, p.8) (3, p.8)
 - to define and document the types and numbers of AFLC military logisticians necessary to support world-wide, all service manning requirements in wartime. (4, p.8)
 - to improve personnel pool to maintain more complex weapon systems. (3, 9a., p.13) (4, p.8)
 - to provide highly skilled labor force at operating bases. (5, p.40)
- To increase the emphasis on supportability and reliability in weapon system design and modification (OPR: AFSC - OCR: AFLC, AF/RD, AF/LEY). (3, p.14) (3, p.13)
 - to modify existing weapon systems rather than design entirely new ones. (3, 9c, p.14)
 - to design future weapon systems to accommodate growth and modifications (OPR: AFSC - OCR: AFLC). (3, p.14)
- To accommodate future demographic changes (OPR: AF/LEX - OCR: AF/LET, AF/LEY). (3, p.13)
 - to respond to inadequate supply of 18-25 year olds. (3, 6a, p.7)
 - to rely on more women, civilians, reservists, and older workers. (3, 6a, p.7) (3, p.9)
- To substitute, where appropriate, civil service or contractors for military personnel (OPR: AF/LEY - OCR: MAJCOM/LGs). (3, 6, p.9)
 - to require contractors in probable war zones to keep equipment in place and operating should war occur. (3, 6a, p.7-8)
 - to assign more repair to the manufacturer under contract. (5, p.56)

- To adequately explore logistics options when developing operational plans and to increase emphasis on early identification and acquisition of sufficient logistics resources to support wartime tasking. (3, 9b., p.14)
- To organize and man AFLC in peacetime for effective wartime support and for responding to emergency/contingency demands without major revisions or disruptions. (4, p.7).
 - to increase depot level manpower authorizations to accommodate growth in workload, maintain technical competency, and ensure capability for surge in wartime (OPR: AF/MP - OCR: AFLC, AF/LEY). (3, 6, p.9)
 - to support automated industrial processes by making depots more specialized, causing parts to be sent to depots for automated repair. (5, p.55)
 - to develop more highly skilled but smaller depot level labor force. (5, p.55)
- To develop and implement policies to support AF quality of life programs. (4, p.8)
- To examine the feasibility of increasing grade authorization levels in sortie producing AFSCs (OPR: AF/MP - OCR: AF/LEY). (3, 6, p.9)

Shortfall 14: The domestic industrial base will be unable to convert to war and cannot fulfill logistics requirements.

- To support automated industrial process. (5, p.55)
 - to provide for more highly skilled but smaller depot level labor force. (5, p.55)
 - to route more parts to the depot for automated repair. (5, p.55)
- To increase support for U.S. industrial base. (4, p.9)
 - to enhance the ability of the domestic & foreign industrial base to support Air Force readiness requirements. (4, p.9)
 - to provide surveillance over production surge capability, both organic and contractor, to meet wartime needs. (6, p.D-22)
 - to conduct analysis of industry production lead times and factors that influence those lead times. (6, p. D-8)
 - to assess stability of industrial repair/supply sources and the surge capability. (6, p. D-8)
 - to permit effective mobilization of industry. (6, p. D-3)
 - to develop the means to assess the national and international industrial capacity to support US Air Force wartime requirements. (3, p. 18) (6, p. D-8)
 - to ensure performance standards are set to include supportability and reliability under combat conditions. (3, p.18)
 - to improve U.S. industry's mobility to convert to war. (1, p.18)
- To enhance the cooperation between Air Force logistics and industry to reduce production leadtime. (3, p.18)
 - to pre-plan with AFLC and industry. (6, p. D-3)
 - to create common cost sharing of facilities, stockpiling, and training of manpower. (6, p. D-3)
 - to stress commonality of future weapon systems components and support equipment with commercial systems and equipment, whenever possible. (3, p.18)
 - to allow more repair to the manufacturer under contract. (5, p.55)

- To encourage legislation that will motivate companies to do business with DOD agencies. (3, p.18)
 - to make case for enough funds to maintain "warm" pipeline. To strive to insure maximum use of logistics resources under the control of other U.S. military or civilian government agencies. (1, p.31)
- To expand the Avionics Integrated Support Facilities to include total avionics support and related weapon systems interface resulting in a System Integration Support Facilities which would act as the focal point for system technical knowledge. (2, 12.3.4. a, p. 49)
- To assure ALC has the capability to interact with the prime weapon system contractor on a cradle-to-grave basis during development of avionics systems and by giving follow-on support. (2, 12.3.4.a, p.49)
- To develop compensations because of the internationalization of U.S. business and political/economic sensitivities business faces in peacetime. (1, p.32)

Shortfall 15: There will be inadequate AFLC leadership and an inefficient organizational structure.

- To develop improved performance information systems for Item Managers, System Managers, System Control Officers, and Program Control Officers. (2, 12.2.4.c, p.47)
 - to improve weapon system information system. (6, p.D-21)
 - to develop linkage between central Requirements Data Bank and peace/wartime programming data. (2, 2.2.4., p.11)
 - to support a mechanized FYRP coupled with a logistics support priorities scheme. (2, 2.4.4., p.12)
- To promote integration of readiness assessment across all logistics functions. (2, 2.2.4., p.11)
 - to support modernizing stockpiles (3, p.15)
 - to improve ability to convert to war which may be inhibited due to economic constraints. (1, p.20)
 - to not allow DOD drive for centralization of logistics to cause actions which fail to acknowledge the role of logistics in war. (1, p.18)
- To implement a logistics priority system. (6, p.D-3)
 - to perform logistics actions in accord with the JCS priority designation system (6, p.D-3)
 - to establish priorities for the allocation of resources as a result of DOD centralization. (1, p.37)
- To improve integration of logistics and operating objectives. (2, 12.2.4.b, p.47)
 - to relate AFLC capabilities with those of HQ USAF and operating command. (2, 12.2.4.b, p.47)
 - to improve AF leadership in JCS and DOD arena where policy and guidance to the services is determined. (3, 10d, p.15)
 - to increase autonomy and visibility of AFLC. (1, p.20)
- To apply full principles of the Logistics Management by Weapon System philosophy. (2, 12.2.4.a., p.47)

- to maintain close interface with applicable Item Manager.
(6, p.D-21)
- to pursue leadership role in single manager matters. (3, p.15)
- To integrate munitions requirements in force sizing. (3, p.15)
 - to establish munitions as a major element of logistics.
(3, p.15)
- To optimize resource allocation within and among weapon and support systems. (2, 2.4.4., p.12)
 - to increase amount of time managers can devote to managing weapons and support systems. (2, 12.2.4.c, p.47)
 - to make affordability decision early (3,p.15)
 - to reduce impact of regional differences in availability of energy.
(1, p.42)
- To convert logistics operations to a more formalized system.
(1, p.19)
 - to continue development of the logistics capability network.
(2, 2.2.4., p.11)
 - to stabilize acquisition program (3, p.15)
- To exploit logistics opportunities by executing multi-year contracts.
(3. p.15)

Shortfall 16: There will be inadequate software design, system access, and interaction. Data management systems will be inadequate.

- To improve system for decentralized access to systems and information processing. (5, p.62)
 - to use communications networks such as National Software Works to link users with programming tools which reside on geographically and administratively dispersed computers. (2, 12.3.4.b, p.49)
- To develop integrated logistics management information systems that will allow accurate and timely decisions and enable the Air Force to have effective visibility and control of its resources. (4, p.9)
 - to encourage overall integration of the International Logistics management systems into a coordinated, manageable USAF international logistics management information system. (2, 12.7.4, p.51)
 - to avoid duplication and inconsistent reporting, inaccuracies, lack of responsiveness and reliability of management information within international logistics. (2, 12.7.4, p.51)
 - to develop a single data management base serving both the Deputy Program Manager for Logistics/Integrated Logistics Support Manager and the System Manager/End Article Item Manager. (2, 4.7.4., p.20)
 - to make more efficient use of existing AFLC computer facilities to offset higher manpower and software costs. (2, 12.3.4.b, p.49)
- To promote the progressive construction of a more complete data base. (part number to stock number) (2, 5.5., p.24)
 - to improve requisition processing which suffers delays associated with part number requisitions. (2, 5.5., p.24)
 - to develop enhanced methods of controlling the configuration of new software for accuracy, quality and security. (3, p.13)

Shortfall 17: There will be inadequate methods of determining tradeoffs between logistics budgetary expenditures and the benefits produced.

- To insure that military strengths and benefits can be compared in a manner acceptable to the hierarchy of the decision process.
 - to improve response to the demands of the DOD PPBS. (6, p.D-7)
 - to determine support resource requirements in PPBS. (6, p.D-21)
 - to assert the critical role of logistics throughout the PPBS. (3, 2b, p.3)
- To develop the means to assess and relate logistics needs and budgetary decisions to operational capability. (3, 2b, p.3)
 - to identify logistics requirements in specific force capability terms to show the effects of planning and programming decisions. (4, p. 9)
 - to depict weapon system effectiveness at varying levels of resource availability. (6, p.D-7)
 - to improve reporting of logistics needs as they affect unit readiness and sustainability. (3, 2b, p.3)
 - to improve weapon system information system (6, p.D-7)
- To timely and accurately identify requirements necessary to provide wartime surge capability. (6, p.D-7)
 - to know the requirement, condition, availability, and location of these scarce assets at all times. (3, 3a, p.3)
 - to have means of early identification of support deterioration. (6, p.D-7)
 - to improve assessment of the long-range effects of near-term budgetary decisions. (3, 2b, p.3)
- To ensure that logistics planning is included as an integral part in the initial phases of all wartime tasking. (3, 2b, p.3)
 - to build significantly better methods of assessing resource allocation alternatives balancing between the self interests of Air Force mission and those of the greater DOD mission and between operational readiness and logistics readiness. (1, p.37)

- to compute and justify use of an increasingly significant portion of our budget for logistics readiness rather than operational readiness. (1, p.36)
- to improve the logistics measurement system to depict weapon system effectiveness at varying levels of resource availability. (6, p. D-7)
- To pursue programs for increased productivity which are directed to both wartime surge and peacetime efficiency. (4, p.9)
 - to recognize trends in effectiveness. (6, p.D-7)
- To adapt to a significant reduction in "discretionary income". (1, p.37)

SOURCE LIST

1. AFLC Command Level Guidance for Logistics Management Systems (LMS) Planning.
2. Air Force Logistics Command
Logistics Management Systems Capabilities Plan, 1 July 1980.
3. Logistics Long Range Planning Guide, 21 January 1981
4. AFLC Long Range Planning Guide, 6 February 1981
5. Destination 1995 - AF Logistics Command, April 1980
6. San Antonio Seminar Results, 10 July 1980

NOTE: The references are presented in the form

(1, p.23)

meaning page 23 of source number 1. Some references are presented in the form

(3, 8b, p.13)

meaning Section 8b on page 13 of source number 3. The section number is provided when it will help identify the source statement.

ACRONYM LIST

ADP - Automatic Data Processing
AFLC - Air Force Logistics Command
AF/MP - Air Force Deputy Chief of Staff, Manpower and Personnel
AF/RD - Air Force Deputy Chief of Staff, Research, Development,
and Acquisition
AFSC - Air Force Specialty Code
AFSC - Air Force Systems Command
ASIMIS - Aircraft Structural Integrity Management Information System
CONUS - Continental United States
CRAF - Commercial Reserve Air Fleet
FMS - Foreign Military Sales
FYRP - Five Year Resources Program
IM - Item Manager
JCS - Joint Chiefs of Staff
LCA - Logistics Capability Assessment
LCAN - Logistics Capability Assessment Network
LET - Air Force Directorate for Transportation
LEX - Air Force Directorate for Logistics Plans and Programs
LEY - Air Force Directorate for Maintenance and Supply
LOGAIR - Logistics Airlift
LSA - Logistics Support Analysis
LSAR - Logistics Support Analysis Requirements
MAC - Military Airlift Command
MAJCOM/LG - Major Command/Logistics Directorates
MSC - Military Sealift Command
MTBF - Mean Time Between Failures
MTMC - Military Traffic Management Center
NATO - North Atlantic Treaty Organization
OCR - Office of Coordinating Responsibility
OPR - Office of Primary Responsibility
PACAF - Pacific Air Force

PPBS - Planning, Programming, Budgeting System
 RAILS - Reliability Analysis of Integrated Logistics System
 RSI - Rationalization, Standardization, Interoperability
 SISF - System Integration Support Facilities
 TCC - Transportation Control Center
 USAFE - Europe Air Force
 XOX - Air Force Directorate for Plans

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