UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b. RESTRICTIVE MARKINGS
2a. SECURITY CLASSIFICATION AUTHORITY	3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION U.S. ARMY WAR COLLEGE 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code) ROOT HALL, BUILDING 122 CARLISLE, PA 17013-5050	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING / SPONSORING ORGANIZATION 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO.

11. TITLE (Include Security Classification)
THE ARMORED GUN SYSTEM - AN ACQUISITION STREAMLINING MODEL FOR THE ARMY? (U)

12. PERSONAL AUTHOR(S)
LTC JAMES A. WANK

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
STUDY PROJECT	FROM _____ TO _____	93/04/15	55

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

20 DISTRIBUTION / AVAILABILITY OF ABSTRACT	21 ABSTRACT SECURITY CLASSIFICATION
☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	UNCLASSIFIED
22a. NAME OF RESPONSIBLE INDIVIDUAL COL ROBERT A. AMES, PROJECT ADVISER	22b. TELEPHONE (Include Area Code) (717) 245-3473
22c. OFFICE SYMBOL AWCAA	

DD Form 1473, JUN 86 Previous editions are obsolete

SECURITY CLASSIFICATION OF THIS PAGE

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AUTHOR: James A. Wank, LTC, USA

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USAWC MILITARY STUDIES PROGRAM PAPER

THE ARMORED GUN SYSTEM - AN ACQUISITION STREAMLINING MODEL FOR THE ARMY?

AN INDIVIDUAL STUDY PROJECT

by

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Dramatic reductions in military budgets for procurement of new or improved weapon systems and equipment pose a challenge for service acquisition personnel. How can they continue to deliver technologically superior equipment, in shorter periods of time, and at the same time ensure the best value possible is obtained for the country's soldiers and citizens in the changing political and economic environment? The Armored Gun System (AGS) is currently one of the Army's top five priority programs. It is urgently needed to replace the M551A1, Sheridan, as the Army's only rapidly air transportable armored combat vehicle. To assist in accomplishing the task of expeditiously fielding this system, as acquisition strategy employing a non-development item (NDI) integration concept and other innovative program streamlining techniques was used during the program formulation stages. The unique nature of the AGS program, and the determination of the Army acquisition leadership, provided the catalyst that permitted the innovation and tailoring of many program milestones, plans, and other acquisition activities. This study reviews the background and status of the Armored Gun System program and examines if it could be used as a model for future Army research, development, and acquisition programs.

INTRODUCTION

> We have developed a goal to guide the Army's modernization efforts. That goal is to equip the soldier with world class equipment in sufficient quantity and in the shortest possible time, consistent with sound business practices and within affordability constraints.[1]

Recent changes of historical proportion in the World political and military situation have altered the balance upon which global power and influence was based. These changes have caused very dramatic reductions in the funding levels and force structure of the United States military. Consequently, the U.S. Army will become a much smaller organization and one that will be stationed primarily in this country. To maintain its demonstrated mission capability, this restructured Army will have to increasingly rely on weapons and other equipment that employ the newest and most advanced technology. Therefore, the challenge facing the Army research and development community is to produce technologically superior equipment capable of rapid deployment to world-wide contingencies, in shorter periods of time, with smaller defense budgets, while maintaining a vital national industrial base, and ensuring that the best value possible is obtained for our soldiers and citizens.

The Armored Gun System (AGS) is a program that shows promise in meeting these new acquisition objectives. The AGS is now one of the Army's top five priority programs. It has been touted by the Army leadership as an example of how

future service acquisitions should be streamlined to improve the acquisition process. This paper will review the background and current status of the Armored Gun System program and determine if it could be used as a model for future Army research and development programs.

ACQUISITION STREAMLINING

The Department of Defense (DOD) acquisition process for new equipment and weapon systems has a deserved reputation as being costly, lengthy, and overly complex. Current DOD policy strongly encourages the use of innovative and creative methods to mitigate and overcome these impediments to efficient operation. In January 1989, Defense Directive 5000.43, Acquisition Streamlining was issued. That directive defined streamlining as any action that results in more efficient and effective use of resources to develop, procure, and deploy quality defense systems and products.[2] The initiatives embodied in this directive strongly encouraged the streamlining of the acquisition process by shortening and simplifying the development chain-of-command/ authority and increasing the use of commercial-type competition, commercial practices, and commercial products. Unfortunately, this directive, like so many acquisition policy documents of this era, failed the test of implementation. Defense Directive 5000.43, along with many

of its policies and ideas, was superceded by the publication of DOD Directive 5000.1 on 23 February 1991. It was replaced by DOD Instruction 5000.2 also issued on 23 February 1991. Regardless which DOD level policy document is in effect, it remains very clear that streamlining all DOD acquisitions by tailoring each individual program is a must in the current budgetary and operational environment. This paper will consider acquisition streamlining to be any effort or procedure that reduces the time, cost and complexity of developing, producing or fielding quality equipment or weapon systems for the United States Army.

THE HISTORY OF THE ARMORED GUN SYSTEM PROGRAM

The Army has identified a need for an affordable, light weight, mobile and survivable armored weapon system for its light divisions and other rapid response forces. Available and projected airlift capability severely limit the rapid deployability of main battle tanks. The M551A1, Armored Reconnaissance/Airborne Assault Vehicle (Sheridan) currently is the only U.S. Army direct fire system possessing the needed deployability characteristics. However, it does not provide adequate kinetic energy ammunition capability; nor the firepower needed in terms of rounds fired per minute, accuracy, and range; and is increasingly becoming more difficult to support. Therefore, a new weapon system was

needed immediately to replace the M551A1 to provide a direct fire capability to complement other available weapons in contingency force units. The Army's interest in this program, now called the Armored Gun System (AGS), recently designated the XM8, seems to have coincided with the disenchantment with the M551 during the Vietnam War.[3] This feeling continues today within much of the armor and infantry communities. It seems as though the Sheridan was well suited for the motor pool in this country, but missed the mark when put to the test in Operation Just Cause and recently during Desert Shield/Desert Storm.[4]

The evolution of the AGS can be traced to the development of a High Survivability Test Vehicle in the late 1970s. This demonstration vehicle resulted in the approval for a Mission Needs Statement for the Mobile Protected Gun (MPGS) in 1981. Although the MPGS requirement was approved, the program was deferred due to DOD requirements to fund higher priority programs. The need for a system to replace the M551A1 in the light armor airborne role was addressed by the Armored Family of Vehicles Task Force in the late 1980s. In 1989, the Commander, XVIII Airborne Corps, reiterated the urgency of developing a replacement system for the Sheridan. As a result, a General Officer Steering Committee (GOSC) convened in 1989, reaffirmed the need for an AGS and outlined the resource requirments for a new acquisition

program. In August 1990, the Chief of Staff, Army (CSA) requested that the AGS be acquired as a Non-Development Item (NDI) program with a targeted fielding by 1994. The AGS Project Management Office was established in September 1990 for the purpose of acquiring a weapon system to satisfy the needs contained in the draft Required Operational Capability (ROC) which was a direct by-product of the 1989 GOSC. On 18 March 1991, the Vice Chief of Staff, Army directed that the AGS program would have the following characteristics:

1. An integration of NDI material as subsystems, modules, and components.
2. The ROC parameters would be relaxed to reduce program technical and schedule risk in the areas of C-130 and C-17 Low Velocity Airdrop (LVAD).
3. A draft Request For Proposal (RFP) would be staffed with industry prior to release of the final RFP.[5]

In May 1991, the Army Acquisition Executive (AAE) concurred with the NDI integration acquisition strategy that would lead to an initial fielding of the AGS in 1997. A more detailed discussion and analysis of this unique NDI integration acquisition strategy will occur later in this paper.

The AGS will provide the Army's light forces an armored weapon system capable of being deployed and used in contingency force operations. Operation Desert Shield highlighted the Army's inability to move armored firepower rapidly to international hot spots; it took four weeks for the first Abrams Tanks to reach Saudi Arabia in September

1990.[6] The AGS will be assigned to airborne, light infantry divisions, light cavalry regiments, as well as, to other units with reconnaissance or rear area combat operational responsibility. The Army will deploy the AGS with contingency forces in areas where environmental agents (nuclear, biological, and/or chemical) may be employed. The AGS can be committed into areas where the timely deployment of main battle tanks may not be feasible or practical. The vehicle will provide direct fire kinetic energy and chemical energy capabilities to the light forces. The AGS will be deployed by LVAD from United States Air Force tactical transport aircraft and will provide a roll-on/roll-off (RO/RO) capability from the C-130, C-141, C-17, and C-5 aircraft.

The AGS will support the light and airborne contingency forces at the platoon through the corps level, as mission requirements dictate. The AGS is capable of immediate direct fire support to the infantry assault forces in securing airheads and during the initial defense of the lodgement. The planned targets for the AGS range from bunkers and other man-made structures to armored personnel carriers and light armored vehicles. The AGS has the potential to engage main battle tanks, but these more heavily armored vehicles are less likely to be the principal

AGS objective. The strength of the AGS is its combination of ease of deployability, lethality, and survivability.

The four main thrusts of the AGS Operation Requirements Document (ORD), which replaced the original ROC, state that the AGS must be air deployable, more lethal, more survivable, and be more supportable than the M551A1 that it is intended to replace. These factors form the basis for the extensive tests and evaluations planned throughout the development and production phases of the AGS program.

The AGS is a tracked armored combat vehicle equipped with a 105mm main gun (XM35) capable of firing U.S. standard, NATO and Ammunition Enhancement Initiative (AEI) ammunition. The XM35 105mm gun is a soft recoil, light weight cannon that will be provided by Watervliet Arsenal to the contractor as Government Furnished Equipment (GFE). The AGS will be operated by a three-man crew utilizing an autoloader. It will be tactically and strategically air transportable in a ready to fight configuration to any area of the world. Specifically, the AGS consists of a base vehicle with varying levels of protection which will allow it to be air shipped by a C-17 (at Level III protection) or to LVAD from a C-130 (at Level I protection), and to be RO/RO capable from a C-130/C-141 (with Level II protection). The AGS will incorporate these add-on armor packages to provide necessary protection levels while meeting

deployability and weight limitations. The AGS will be built by the FMC Corporation and is based on the demonstrated capabilities of that company's Close Combat Vehicle Light (CCVL) prototype.

DEFENSE ACQUISITION GUIDANCE AND POLICY

DOD Directive 5000.1 provides the foundation upon which all other DOD and service acquisition policy is built. This capstone document also provides broad policies governing the entire spectrum of defense acquisition activities. This directive very clearly articulates the department's current policy on the formulation of program acquisition strategies to meet urgent user requirements. "Acquisition strategies shall be tailored to accomplish program objectives and control risk."[7] This short statement sets the tone for future defense research, development, and acquisition (RD&A) programs. It recognizes the requirement to adapt established policy and guidance to meet the urgent needs of our military forces in an environment of reduced budgetary support and increased Congressional oversight and review. Service programs must produce the optimal results in the minimum time possible and for the least amount of dollars expended or face the real potential of program termination or lengthy and costly schedule extension. Mr. Stephen K. Conver, the Army Acquisition Executive, understood this new

imperative when he directed, "We must get the most capability for our limited dollars --- programs delivered on schedule, within budget, with quality assured."[8]

One of the six Army imperatives upon which the future force will be resourced and structured is "modern equipment." This is equipment that will provide American soldiers with the most lethal capability possible while employing the highest quality technology available. This is the Army's RD&A challenge and the guidance under which its acquisition community must operate. Accomplishment of this complex task will be the RD&A contribution to the attainment of the Army's vision for "a total force trained and ready to fight... serving the nation home and abroad... as a strategic force capable of decisive victory."

The Army Focus 1992 provides a simple direction for the Army RD&A program, "Improve our acquisition process."[9] The Army's acquisition system is intended to translate the operational needs of the soldiers in the field into state-of the-art military equipment and systems. This process must provide a framework for delivering superior and supportable equipment to our forces while minimizing the development and future operational support costs of these new systems. Our current acquisition environment is encumbered by excessive oversight, over-regulation, and a lack of an operational sense of urgency. Without change, it will not provide the

soldiers of the smaller Army of the future the equipment and supplies needed to deter potential enemies or win on the battlefield, when required.

The Army Staff and the Army Materiel Command have recently developed a set of acquisition improvement principles. Implementation of these principles, which are not all entirely new, should assist greatly in meeting the Army's goal for improving and shortening the acquisition cycle. It is felt that these ideas define what must be done to meet the acquisition challenges that lie ahead. The most important of these principles are listed below:

1. Reduce cycle times in all acquisition processes.
2. Facilitate rapid introduction of technology advancements.
3. Reduce functional requirements in every aspect of an acquisiton. Eliminate all requirements that add little or no value.
4. Develop acquisition strategies which set priorities, identify streamlined paths to early fielding, and involve the user.
5. Aggregate requirements into fewer and longer term contracts.
6. Base RFPs on product performance specifications. Remove barriers to dual-use technologies and simultaneous manufacturing.
7. Increase the use of best value contracting.
8. Integrate cost effective testing throughout the life-cycle by involving test and evaluation personnel early in the process.
9. Make full use of international markets and technology.
10. Reduce operating and support costs throughout the life cycle.
11. Promote quality through customer focus, process review and continuous improvement.[10]

If the guidance embodied in the above principles is implemented, it should create an acquisition process that is able to identify the critical requirements that must be met and provide the defense industry with the maximum latitude possible. It could also provide the best value solutions available in timely and cost effective ways. One of the keys to this new process is the incorporation of a best value, not necessarily lowest bidder, approach to selecting defense industry partners for Army programs. Best value is the procedure now in vogue that bases a contract source selection on factors other than just lowest cost/bidder.

As the defense industrial base shrinks in the face of contracted DOD budgets, the Army must husband its scarce resources in partnership with only those commercial firms that have and continue to demonstrate the proven ability to deliver quality products, on-time, at a fair cost, and that meet the actual recognized needs of the user. Increased emphasis during the contract award process on areas such as contractor program management, logistics support cost reduction, design growth potential, total quality management, and past performance will produce better equipment for our military. It will also create a more harmonious partnership between the Army user communities, the Army acquisition community, and the civilian defense industrial base.

The Army Materiel Command recently published its Acquisition Challenge Strategy White Papers. These documents provide seven methods to ensure the acquisition improvement strategy is implemented successfully. These seven methods are shown below:

1. Development of a quality program acquisition strategy that specifies a streamlined, priorities-oriented approach for conducting the entire RD&A program.
2. Increased dialogue with the user community during all phases of the system acquisition cycle.
3. Increased dialogue with the defense industry during the entire RD&A effort.
4. Limit the program requirements specified to industry to only those items that are priority value-added as determined by all program participants.
5. Prepare and submit to industry only value-added requirements that clearly specify best value criteria.
6. Only use best value criteria during the source selection process.
7. Maximize efficiency of cycle-time and reduce the number of contract actions during all acquisition processes between government agencies and industry.[11]

ARMORED GUN SYSTEM PROGRAM AND ACQUISITION STRATEGY

Every RD&A program has an overarching strategy that guides the program throughout its entire life cycle. This "grand" strategy is spelled out in a document appropriately called an acquisition strategy. The acquisition strategy encompasses all program objectives, direction, guidance, and control mechanisms through the integration of strategic, technical and resource concerns.[12] This acquisition strategy is developed by the program manager and his team at the onset of the program. Ideally, it states clearly and

concisely the objectives of the entire acquisition effort. It also should provide an organized approach to accomplishing the objectives within known and projected constraints and includes program priorities and approved resource levels. The acquisition strategy is a living document that is constantly up-dated by the program manager as new information is obtained throughout the program life cycle.

DOD Directive 5000.1 specifies that defense services and agencies must consider the entire range of alternatives before initiating a new acquisition program. The first potential alternative that must be examined includes the use or modification of an existing U.S. military system. The second alternative is the use or modification of an existing commercial or allied system. A new acquisition program may be pursued only when both of the above alternatives have been proven to be unacceptable and eliminated as options. DOD Instruction 5000.2, Defense Acquisition Management Policies and Procedures, discusses policies and procedures for the use of Non-Development Items (NDI), one of the alternatives that must be explored before a new-start acquisition program is begun. A NDI is an existing product or piece of equipment that can meet the DOD requirement/need with no more than minor modification.[13]

There are four NDI categories that programs can pursue to take advantage of this form of program acquisition. These NDI categories consist of:

1. An item currently being sold in the commercial marketplace.
2. An item that although not sold in the commercial marketplace is nevertheless already developed.
3. An item or group of items from the above categories that require only minor modification to fit into the operational environment anticipated by the military user.
4. Currently available commercial parts, components, and subsystems incorporated into a larger system undergoing DOD development.[14]

Congress has made the use of NDI a priority by legislatively directing its use when applicable. However, there are other reasons that make employing a NDI based acquisition strategy attractive. NDIs are normally less expensive and available in a more timely manner. Futhermore, NDIs, when bought to meet DOD requirements in an appropriate manner, tend to provide as good or better quality as do items specifically developed and fielded to meet DOD needs.[15]

The Project Manager, Armored Gun System adopted a streamlined acquisition strategy termed NDI integration. This unique strategy, and its associated acquisition plan, were approved for implementation by the AAE on 3 May 1991. The AGS acquisition strategy and initial program RFP were tailored with the objective of reducing the impact that performance and schedule goals could have on one another.

The requirement to field this system as quickly as possible drove the concept to seriously pursue a NDI solution. As will be discussed later in more detail, no NDI systems were available that completely met all of the recognized user requirements. Therefore, a pure NDI acquisition was not possible, and some modification to the existing potential candidate vehicles was required. Consequently, as discussed in DODD 5000.1, the AGS acquisition strategy was innovatively tailored to incorporate modifications to NDI combat vehicle systems and components. This variation of the NDI approach became known as NDI integration. Under this strategy, existing components, systems, and/or sub-systems are used as much as possible and integrated into the final vehicle configuration. This acquisition approach complies with NDI guidance provided in DODI 5000.2, as discussed previously.

This NDI integration acquisition strategy was adopted to minimize program risk and shorten the schedule in order to satisfy the user's identified need in the most timely manner possible. It made maximum use of previous government efforts on similar programs, such as the MPGS and the Light Armored Vehicle (LAV). This permited the use of prior contractor and government test results, previous government computer simulations, engineering analysis, and program lessons learned. Use of data generated by earlier efforts

on similar programs, coupled with the use of a NDI strategy, maximized the utilization of already developed systems or components and reduced the necessity for a costly and lengthy development effort. Hardware demonstrations under previous contractor sponsored programs verified component performance and the concept of basic system integration. With this concept in mind, the program developmental phases were compressed and in some instances major events and/or milestones were combined.

The AGS acquisition strategy is a three phased one that employs innovative approaches to satisfy the user's needs. Phase I is an R&D funded cost reimbursement contract competitively awarded emphasizing best value criteria during the source selection process. The Phase I contract includes production of six prototype vehicles and one ballistic hull and turret for use in testing the AGS configuration against system requirements. Scheduled testing includes: technical tests, early user tests. ballistic sample testing, live fire testing, and integrated logistics support evaluations. The Phase II contract will be restricted to only participation by the Phase I contractor. It will be a negotiated fixed price type contract for Low Rate Initial Production (LRIP). The base Phase II contract will be for the delivery of 21 vehicles and calls for two contract options of 24 vehicles each, for a total of 69 vehicles. (See AGS Milestone

Schedule, Appendix I). The Phase III contract will also be a cost type contract limited to participation by the Phase I contractor only. This will a production contract for 231 vehicles that will complete the currently projected fleet of AGS systems at 300 vehicles.

ARMORED GUN SYSTEM PROGRAM STREAMLINING

The Armored Gun System program has been streamined in numberous obvious and subtle ways. A real priority was given to shortening the acquisition cycle for this high visibility system.(See AGS Program Development Chart, Appendix C) The strategy had to take a non-standard approach in order to meet the user's urgent and recognized need before the M551A1, Sheridan becomes economically unsupportable. To accomplish this task, the Office of the Project Manager, Armored Gun System, (PM, AGS) was established in September 1990 under the auspices of the Program Executive Officer, Armored Systems Modernization (PEO, ASM). The most important streamlining techniques and strategies incorporated in this unique Army Program will be discussed below. What makes this effort so noteworthy is not the inclusion or exclusion of any single initiative, but the total amount of effort expended by all involved parties

to structure this program in a truly different manner from other "new-start" RD&A programs.

Subsequent to the creation of the PM, AGS, two major tasks were undertaken simultaneously. A program schedule and an acquisition strategy to accomplish it were developed. These documents required tremendous interaction between the combat development community, the materiel development community, and the Department of Army staff. From the inception of this program, this early involvement of all government participants provided the mechanism to ensure program requirements were understood and accomplished.

The acquisition strategy and plan approved by the AAE in May 1991 were developed during this early period of the program. The schedule and strategy were affected by decisions made in areas, such as program structure, requirements formulation, test and evaluation, and budget constraints. One major initiative adopted at this time was the realization that the NDI strategy that was directed by the CSA in August 1990 would permit a non-standard milestone schedule. This program schedule would not necessarily have to emulate the traditional program schedule outlined in DODI 5000.2 (See Milestone Schedule, Appendix II). No formal Milestone 0 review was held and a decision to conduct a combined Milestone I and II review prior to the award of the initial Phase I contract was made. Use of both government

and contractor testing results were incorporated into the schedule and strategy. A recognition was made that testing and evaluation (T&E) can be a lengthy and costly element in an acquisition program. Wherever possible, a decision was made to use contractor testing to augment or replace duplicative government evaluations. The key to the projected success of this plan is the constant involvement of government T&E personnel during the formulation of the contractor test plans, their presence during key portions of this testing, and their having access to relevant portions of the contractor's data.

The program was deliberately not streamlined extensively in the cost, budget, and financial management areas in ways that might outwardly save time or funds. The problems that were uncovered at about this time involving the U.S. Navy's A-12 program were sufficient to demonstrate that such streamlining efforts could potentially be inappropriate. However, preparation of many of the initial program budget plans and submissions were accomplished simultaneously and not sequentially as often occurs and this did save some time in this critically important area.

In December 1990, the results of an extensive market survey of currently existing armored vehicle systems were received from industry and analyzed. A detailed purchase description for the AGS, a draft milestone program schedule,

and an executive summary of the program had been sent to free-world armored combat vehicle manufacturers. This market survey inquiry not only requested input on the potential availability of a vehicle to meet the specified requirements, but encouraged the defense industrial companies to provide suggestions on how to improve the structure and strategy of the program. This market survey was itself a product of a thorough review of the requirements conducted by the user and development communities. A great deal of effort was expended preparing this survey by PEO, ASM and Tank-Automotive Command (TACOM) functional experts to ensure a product was released to industry that properly reflected the needs of the user, but did not unduly restrict the potential contractors from suggesting innovative and practical solutions to this acquisition challenge. A serious attempt was also made to limit the functional administrative requirements normally found in complex government procurements to only those absolutely vital to assuring a successful program management effort. As a result of this market survey, many key factors were uncovered by the ten defense contractors that responded that affected the actual program structure. Most importantly of all, it was determined by the PM, AGS after an extensive review of the survey responses, that no vehicle systems, either foreign or domestic, existed in a production status that totally met all recognized user requirements as

specified in the Requirements Operational Capabilities (ROC) document for the AGS.

This market survey was a major contributor to the program streamlining that has occurred throughout the program. It not only required the active participation by all involved government organizations, but it helped open the channels of communication with the defense industry. This dialogue continued during the early formulation stages of the program and continued until the release of the RFP when source selection constraints were properly imposed.

While the AGS program was being established, Congress and the Office of the Secretary of Defense (OSD) staff played influental and very active roles. Important direction was given by Congress that the EX35, Soft Recoil 105mm Gun be provided as Government Furnished Equipment (GFE) to the selected vehicle contractor. This gun was under development for the U.S. Marine Corps LAV 105 program. Additional guidance provided by Congress required the Army to coordinate light armor vehicle programs with the Marines. However, the operational requirements for the Army and the Marine vehicles are not compatible and no single existing vehicle can meet all of the divergent needs of both services. Therefore, both services have maintained their separate programs, but continued to coordinate efforts, as directed. Extensive Congressional interest and involvement

early in the AGS program resulted in it being designated a Major Defense Acquisition Program (ACAT IC) by the Defense Acquisition Executive in July 1991. This is the highest category that can by assigned to RD&A programs and was given to the AGS program in spite of the fact that it did not meet the minimum budgetary threshholds specified in DOD 5000.1. Congressional and OSD interest in the AGS program was the sole reason why the program was placed in this category of acquisition programs. This designation and the mandatory requirements placed by statute and regulation on an ACAT IC program definitely affected the degree to which the program could be streamlined by the PM and the Army acquisition chain of command.

The AAE was briefed on the results of the market survey in January 1991. At that time, the acquisition strategy implementing a modified NDI approach to integrate existing components, subsystems or modules into a vehicle that could meet the ROC specifications was verbally approved. A General Officer Review held in March 1991 supported the streamlined acquisition strategy that was later adopted by the Vice Chief of Staff, Army on 19 March 1991.

While the AGS Program Office (PMO) was being established, the documentation for the Phase I contract for the "development" and hardware to meet the AGS acquisition plans and schedule was begun simultaneously. The direction

to the PM to release a draft RFP only intensified those efforts. The draft RFP was completed in May 1991, but prior to release a scrub of the document was conducted by personnel from AMC, TACOM, and the PEO/PM Offices. The RFP scrub is a tool that can be used to reduce or tailor functional requirements contained in the document. It can also detect and correct shortcomings or inconsistencies in the package prior to release to industry. Numerous requirements were clarified, reduced in scope, and unnecessary ones were eliminated by this review of the AGS draft RFP.

Throughout this entire process, user participation was a critical element in ensuring the purchase description in the RFP accurately reflected the performance requirements and system characterics as stated in the ROC. This continuous and open flow of communication and involvement between the combat developement community, the materiel development community, and in some instances even the prospective gaining military troop units, was unique, invaluable, and greatly facilitated the approval of all benefical streamlining initiatives proposed during the early stages of program formulation.

After the changes suggested by the group that examined this document were incorporated, the actual draft RFP was released to industry on 29 May 1991. Twenty-nine defense

industry contractors from around the world responded to the government with over 500 comments on the document and its content. Two major changes to the purchase description were made relating to the performance requirements of the power train and the primary optical sight recognition as a result of contractor questions and suggestions. Numerous other clarifications and minor changes in areas such as logistics, test and evaluation, program management, and engineering were also made at this time. The effort expended by all interested parties produced as an end result a better document and a more streamlined procurement.[16]

The PM, AGS had planned to release the formal Phase I RFP to industry in late July 1991. However, Congress again became involved by presenting the Army a series of questions about the program that had to be expediously addressed and at the same time temporarily withheld the funds needed to support the contract award. It was during this period of time that the final direction was received from Congress to GFE the EX35 Gun for use as the main armament for the AGS. Once these Congressional issues were resolved, the PM released the RFP on 26 August 1991. This RFP, and the program management philosophy it embodied, was revolutionary and innovative. It had been developed using a team approach that included many government agencies and early interaction with the defense industry. The RFP, and the acquisition

strategy upon which it was based, allowed the contractor to submit many specified reports and required data/documentation in their own or generally accepted commerical formats. It simplified the quality assurance system, and reduced the reliability and maintainability tasks to only the essential ones required to manage the conformance of the program with the specifications. Reliance on contractor produced information in commercially accepted standard or non-standard formats was a major monetary and time/schedule savings initiative. Many potential contractors requested additional information or provided comments to the TACOM procurement activity after reviewing the RFP. In spite of having conducted a market survey, performing cross-walks between the ROC and the RFP, and having released and reviewed a draft RFP, the final RFP still was not a totally clear or error free document. However, the inquiries were minimal when compared to other major defense system RFPs. All questions and requests were expeditiously and adequately addressed by the government procuring command.

One important streamlining technique that is often overlooked that can significantly affect a program schedule is the source selection plan and criteria. The AGS program provided a very clear and concise source selection plan and applicable criteria to the prospective industry competitors

in the RFP documentation. Involvement of the government functional area experts, the user, and even the some of the actual members of the source selection board, when available, is vital during the preparation of this plan. This helps ensure the decision criteria are properly portrayed in a fair and impartal manner in the RFP.

Mr. Stephen K. Conver, the AAE, made acquisition streamlining a priority initiative for the Army acquisition community in the early 1990s. The Army RD&A hierarchy repeatedly emphasized to all acquisition agencies that it was their responsibility and duty to challenge the functional requirements imposed on all levels of acquisition.[17] This messsage was clear, but the reality was something else again. The Army had to change the way in which it conducted its acquisition business in order to implement meaningful improvement in the RD&A process. Functional requirements that deserved closer study included elements in the areas of acquisition management, reports, tests, data items, military specifications, and military standards. These types of items are normally imposed on the system acquisition program and contractors by functional and executive layers of the government. Many of these requirements are not based on legislative statute or service/DOD regulation. The AAE properly felt that the Army was its own worst enemy in this area. Reducing the amount

and complexity of the functional requirements to only those that added value to the procurement would save money and expedite the delivery of the product to the soldier in the field.

The AAE and his staff after the release of the formal AGS RFP determined that the solicitation still might contain unnecessary and potentially costly requirements that could be eliminated. Therefore, in October 1991, The AAE directed a second scrub be conducted of the AGS RFP. The same team of acquisition experts that reviewed the document previously was again utilized. The focus of this second review was to ensure that all no-value-added requirements being imposed on the potential contractors would cost the PM excessive money or time. Mr Conver stated, "My own view is that we have burdened the (AGS) acquisition strategy with excessive requirements that are not necessary, that increase the cost of the program, that lengthen the time to field it to our contingency forces, and that simply don't make sense for an [off-the-shelf] acquisition of only 300 vehicles."[18] Therefore, the PM, AGS delayed the receipt of proposals from industry for thirty days, until 13 December 1991. During this period the RFP scrub was held and time was alloted for amending the RFP, if required. The approach taken by the review team was simple and straight forward. The burden of proof as to the merit of any functional requirement should

reside with the person or agency that would impose it on the acquisition system or strategy, and not with the PM or other persons committed to streamlining the process and the solicitation itself.

The results of this top-to-bottom examination of the RFP were rather impressive. Over 270 contractual statements of work (SOW) were reviewed. Of these, 65 were changed or deleted entirely. Initial government estimates placed the potential savings from these actions at over $400,000. However, the overall program acquisistion strategy and schedule were not altered beyond the thirty day delay imposed to allow addition proposal preparation time. The fact that this major RFP review could occurr and only affect the program baseline parameters in a minor way is a credit to the extensive work done earlier by the PM and his entire team during the development of the acquisition strategy, the market surveys, and the orginal preparation of the draft and final RFPs.

This RFP review/scrub took place in late October 1991. Some of the more significant changes to the document are listed below.

1. Eliminated the requirement for level III technical drawings in lieu of contractor performance specifications.

2. Reduced the number of contractor deliverables in the NBC area.

3. Removed MIL-Q-9858 and replaced it with commonly accepted commercial practices.

4. Resulted in 90 contract changes that were incorporated into RFP Amendments #3 and #4.

5. Eliminated other no-value added contractor and government reports and management procedures in many functional areas. Increased the requirement to use face-to-face meetings to resolve program challenges in a more timely manner.

Other important areas of the program were also reviewed, such as software deliverables, logistics support methodology, and testing plans/schedule. As a result of the AAE's direction to further streamline the AGS program, a detailed study was undertaken to determine whether or not contractor logistics support (CLS) should be adopted as the method used to provide logistics to the Army for the AGS system throughout its life cycle. This study was undertaken by two separate teams which reported their findings to the PM, AGS. The conduct of these studies did not impact the performance of Phase I of the program. A further study of this complex issue of supporting a ground close combat vehicle system with CLS supplied logistics services and materiel will be conducted during the first phase of the

program in time for the proposed recommendations to be included in the Phase II AGS contract.

The PM, AGS had long recommended the replacement of the M551A1 live fire test requirement by a lower cost demonstration as a waiver of Public Law, 10 USC 2362. The group that conducted the RFP review supported this initiative and action was taken to formalize this position to DOD and Congress. This one action alone could potentially save the program over three million dollars and some valuable time on the program's test and evaulation schedule.

After this final RFP scrub was completed and Amendments #3 and #4 were released, the responses from industry were very favorable. Some industry sources stated, "We are pleased with the Army's responsiveness and are impressed with the speed with which the scrub took place.... This is the fairest competition I have ever seen."[19]

During the summer of 1991, another very important event took place that held tremendous potential to modify and further streamline the AGS acquisition strategy and overall program. The AGS was selected by the AAE to be the Army's acquisition program participant in the Commercial Practices Pilot Program (CP3). This program has since been renamed the Defense Acquisition Pilot Program, but the purpose and

concepts remain unchanged. This program was established by Congress, with the encouragement of the OSD staff, under the provisions of Public Law 101-510 (National Defense Authorization Act for Fiscal Year 1991). This law allowed the Secretary of Defense to select a small number of major acquisition programs to participate in a new streamlining initiative with significant Congressional statutory and regulatory support. One of the goals of the program was to reduce the amount and level of oversight and documentation required as participating programs transition through successive acquisition phases. This CP3 concept would allow a designated program to request waivers or exemption from statutes or regulations that the service believed were impediments to program accomplishment.

The number of formal program milestones required for CP3 participating programs were reduced to two and the amount of required documentation for these reviews was significantly streamlined. Formal acquisition reports were eliminated except for the annual program baseline parameter analysis. The AGS Program Office believed this initiative offered tremendous potential to reduce the administrative burden on the entire program team, save money, and potentially shorten the acquisition schedule. However, the AGS program was moving much faster than the CP3 approval cycle was at Army level, at DOD, or in Congress. Ideally, a

participating CP3 program should be so designated prior to entering the Demonstration and Validation Phase. The requests for waivers from regulations and/or statutes should be incorporated into the preparation of the program's acquisition strategy and baseline. The AGS program was already past these major milestone events and could not easily reap the potential benefits offered by participation in this radical and innovative acquisition approach. However, the PM attempted to use this process to the benefit of the Army community during the preparation phases for the program's Milestone I and II Army Systems Acquisition Review Council (ASARC) in early 1992.

The unique NDI integration acquisition strategy of the AGS program was designed to allow it to streamline the baseline schedule by combining the Milestones I and II reviews at the time of awarding the Engineering and Manufacturing Development (EMD) contract. By skipping the Concept Exploration and Definition (Phase 0) and the Demonstration and Validation (Phase I) portions of the DOD acquisitions milestone process, the AGS program was able to save significant time and cost in fielding this important combat system. Therefore, the PM, AGS attempted to further leverage the program streamlining initiative by trying to obtain some of the benefits from the CP3 designation during the preparation of the ASARC documentation. A proposal was

sent to the Army staff requesting the AGS undergo a "tailored" Milestone I and II review instead of the complete process as specified in DODD 5000.1. This proposal, if adopted, would have limited the number of pre-ASARC reviews the PM had to present, provide a flexible schedule for the development of Milestone II test and manpower documentation during the EMD phase, and allow long lead time (LLT) decisions to be made prior to the next major milestone review by the Program Executive Officer, Armored Systems Modernization. The AAE recognized the uniqueness of the AGS program and directed the Army staff and acquisition community to streamline the ASARC documentaion process to meet the aggressive schedule of the program. However, no formal approval action was taken on the PM's request to implement some of the potential provisions offered by the CP3 option. Therefore, the program proceded with the ASARC without the benefits afforded by CP3 membership.

The Milestone I and II ASARC for the AGS program was held on 6 May 1991. Based on this high level review and subsequent discussions, the AAE approved the program's entry into EMD, reaffirmed its acquisition strategy, and authorized the award of the Phase I contract. These actions virtually made AGS designation as a CP3 program meaningless because the program had proceded to a point beyond which the benefits could not substantially help the

program over the short term. Subsequently, AGS was removed at the request of the Army by OSD from the Defense Acquisition Pilot Program. To provide additional program streamlining assistance the AGS was reclassified as an ACAT II program. This designation helped the program streamlining effort by reducing the statutorily and regulatorily required reports and events it must undergo based in its classification as a non-major defense system. Flexibility in such areas as side-by-side live fire testing with the M551A1 are now open to negotiation and are not required by law. This designation as an ACAT II program will potentially offer the AGS program as much streamlining latitude as would membership in the Defense Acquisition Pilot Program.

CURRENT AGS PROGRAM STATUS

Contractor proposals were received from industry on 13 December 1991. PM, AGS had cooperated with the entire acquisition community to establish an efficient source selection board (SSEB) procedure prior to that date. Therefore, the SSEB process was completed in April 1992 prior to the 6 May 1992 ASARC. Once approval for EMD contract award was given by the AAE, the contract was awarded on 4 June 1992 to the FMC Corporation. The system had been previously designated by TRADOC and AMC as the XM8,

Armored Gun System. The vehicle selected is based on an improved version of an FMC vehicle first developed in the mid-80s and later demonstrated for the user community at Fort Bragg in 1987. The XM8 has the deployability, survivability, lethality, and sustainability characteristics to meet or exceed all user requirements as specified in the ORD. FMC immediately began work to ensure the December 1997 First Unit Equipped (FUE) date would be met.
Therefore, after many previous false starts, numerous program name changes, and more than a decade after the original concept for a light air-deployable armored vehicle was first conceived, the Army had taken a positive step to remedy this critical combat equipment need. The XM8 will provide the Army an operationally and tactically mobile direct-fire infantry support vehicle that can rapidly be moved by tactical air transport.

CONCLUSIONS AND RECOMMENDATIONS

The Armored Gun System program was developed and approved using a non-development item (NDI) approach. This set it on a course which departs from the classical "New-Start" development pattern. Many of the acquisition streamlining techniques and initiatives mentioned previously are particular to a NDI-type system. Since NDI is one of the preferred alternative methods of obtaining new or

improved equipment for the military, it can be used to advantage when tailoring and streamlining an acquisition strategy. However, many other methods employed by the AGS program can be adopted or adapted for all types of Army/military acquisition programs. Of particular potential benefit are the initiatives listed below.

1. Use of NDI as a preferred acquisition approach.

2. Skepticism of all functional requirements throughout the entire acquisition process.

3. Rigorous comparison of the user's operational requirements as specified in the ORD and all materiel development documentation.

4. Detailed scrub of the program RFPs and use of draft RFPs with industry participation, if possible.

5. Use of commercially accepted standard, documentation and practices in lieu of government specifications and formats.

6. Participation in streamlining initiatives, such as the Defense Acquisition Pilot Program for all high visibility/priority programs.

7. Designation of the program at the lowest ACAT status possible based of guidance provided in DODI 5000.2.

8. A program management office team of "visionary" professionals not tied to the old ways of doing business. This is especially critical during the formative

stages of the acquisition strategy and the program baselines.

The AGS program was intentionally structured by the PM in a streamlined manner. The program benefited from substantial high level Army leadership attention and priority. This provided the program the clout needed to overcome some of the entrenched functional bias, but also at times restricted the PM from executing his own program agenda. However,no steamlining effort can be successful without the complete support of the Army acquisition community leadership.

The AGS program is an excellent example of what types of acquisition streamlining concepts can be developed and implemented if the entire RD&A community cooperates to accomplish a priority task. The recently published AMC list of Acquisition Improvement Priciples mirrors many of the techniques used by the AGS team. From that stand-point alone, the AGS program provides a baseline model for future Army acquisition efforts. But more importantly than this, the AGS program broke the mold. Its early program success clearly demonstrates that all of the bureaucratic verbage contained in the acquisition regulations which places priority on innovative procedures and tailored techniques really means something. However, these principles can only be implemented when the PM and his team get commitment and

support from all program participants to include the user, the Army and OSD staffs, and the Congress.

The Army's procurement funds have declined by over 50% to just over $7 billion in the early years of the 1990s. The FY 1994 military budget will be even smaller. Consequently, the procurement funding will be further reduced. It is increasingly more important to our soldiers that the acquisition community field the quality products and services required, in a timely manner and at a reasonable price.

Mr. Joel W. Marsh, a senior United Technology Corporation official, stated the following on 4 February 1993 about DOD acquisition procedures. "Existing DOD acquisiton policy does not need to be streamlined. It must be rewritten to correspond more closely to or exactly with the policies controlling commercial business practices." These ideas are shared by most defense industrial executives.

This has been a DOD goal for years. However, the bureaucratic weight of the existing system has prevented most meaningful acquisition streamlining initiatives from proceeding further than the study phase or proposal formulation. This simply cannot continue in the future of reduced personnel and budgetary resources and escalating

requirements for new and ever more sophisticated military hardware.

The AGS program as restructured beginning in 1989 is unique. It is special because of its strong user support, early industry participation, adopted NDI integration strategy, and its employment of talented personnel not constrained by traditional program methodology. All of these factors contributed to the successful start of this important program. Its beginning fosters an expectation, based on a streamlined acquisition strategy, of a totally successful effort that meets all program objectives and delivers a new combat vehicle to the field on schedule in 1997.

If the Army acquisition community is to meet the users' identified requirements for new or technically improved equipment, satisfy the demands of Congress and the American people for less wasteful procurements, and still maintain a productive and active commercial industrial base, radical acquisiton system reform is needed. Many of the techniques and procedures used by the PM, AGS accomplished these goals. The Army acquisition community must rigorously resist the use of unnecessary/non-value added functional requirements and place the user's priority requirements ahead of bureaucratic "rice bowls." The AGS program is a first small, but important step in the right direction. It is

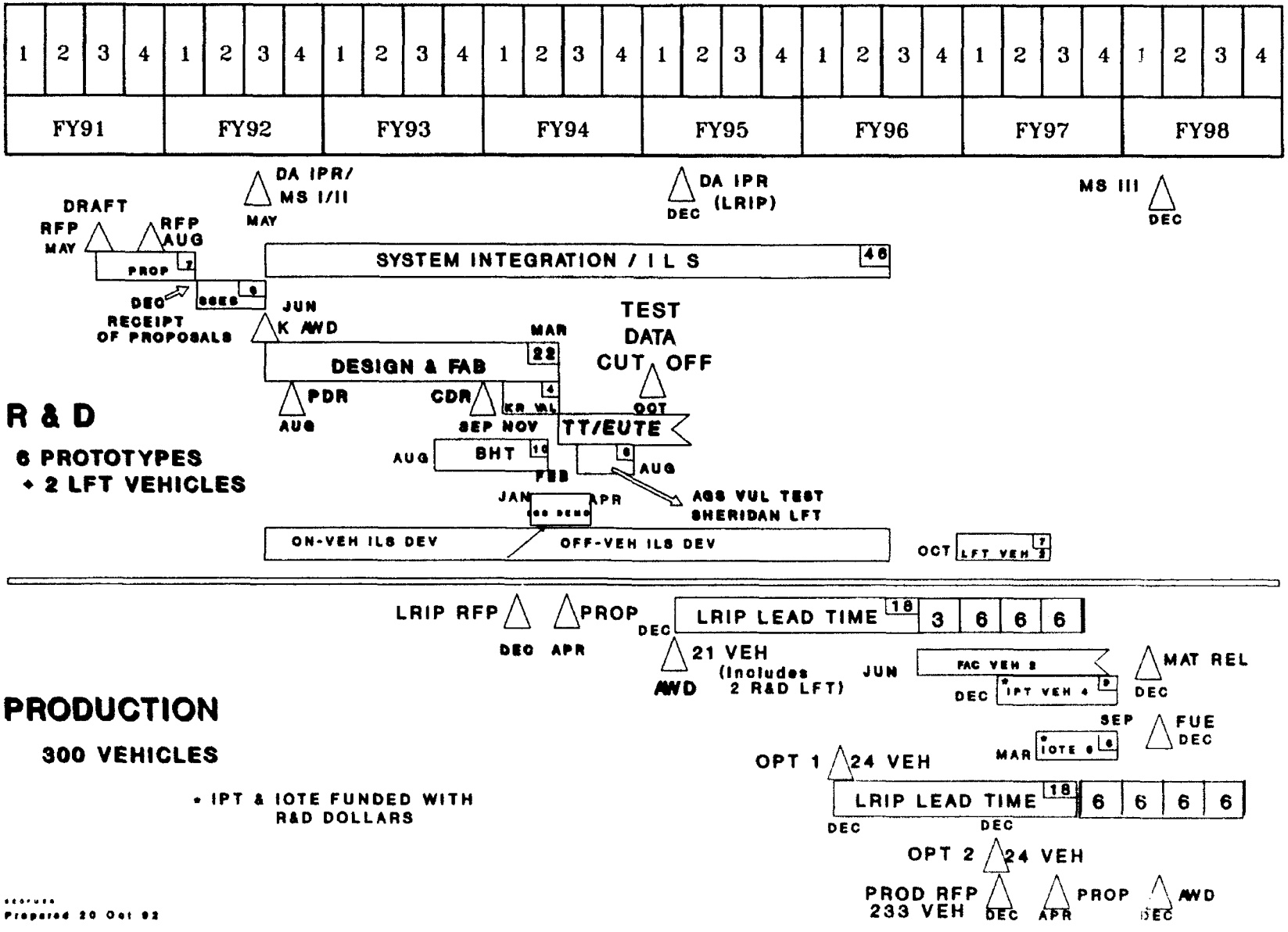
incumbent on the system to ensure it is not the only step towards that objective.

If the AGS program is allowed to execute its streamlined and innovative acquisition strategy, the RD&A community should learn from the its successes as well as its disappointments. And above all, the Army acquisition community must adopt those productive techniques that improve the way that the it procures systems to meet urgent user requirements.

APPENDIX I:

AGS PROGRAM SCHEDULE

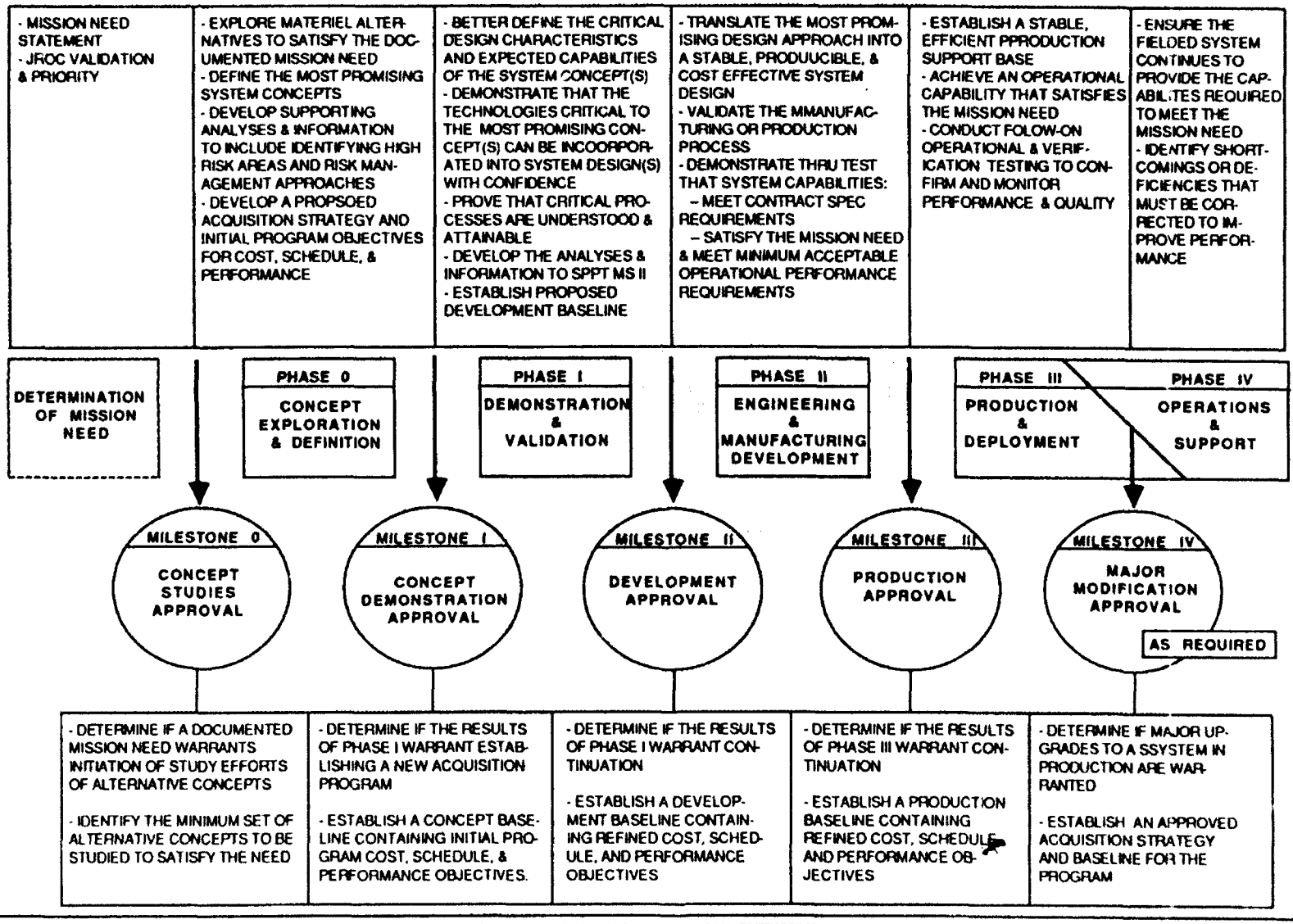
AGS PROGRAM (FUE DEC 97)



APPENDIX II:

ACQUISITION MILESTONES AND PHASES

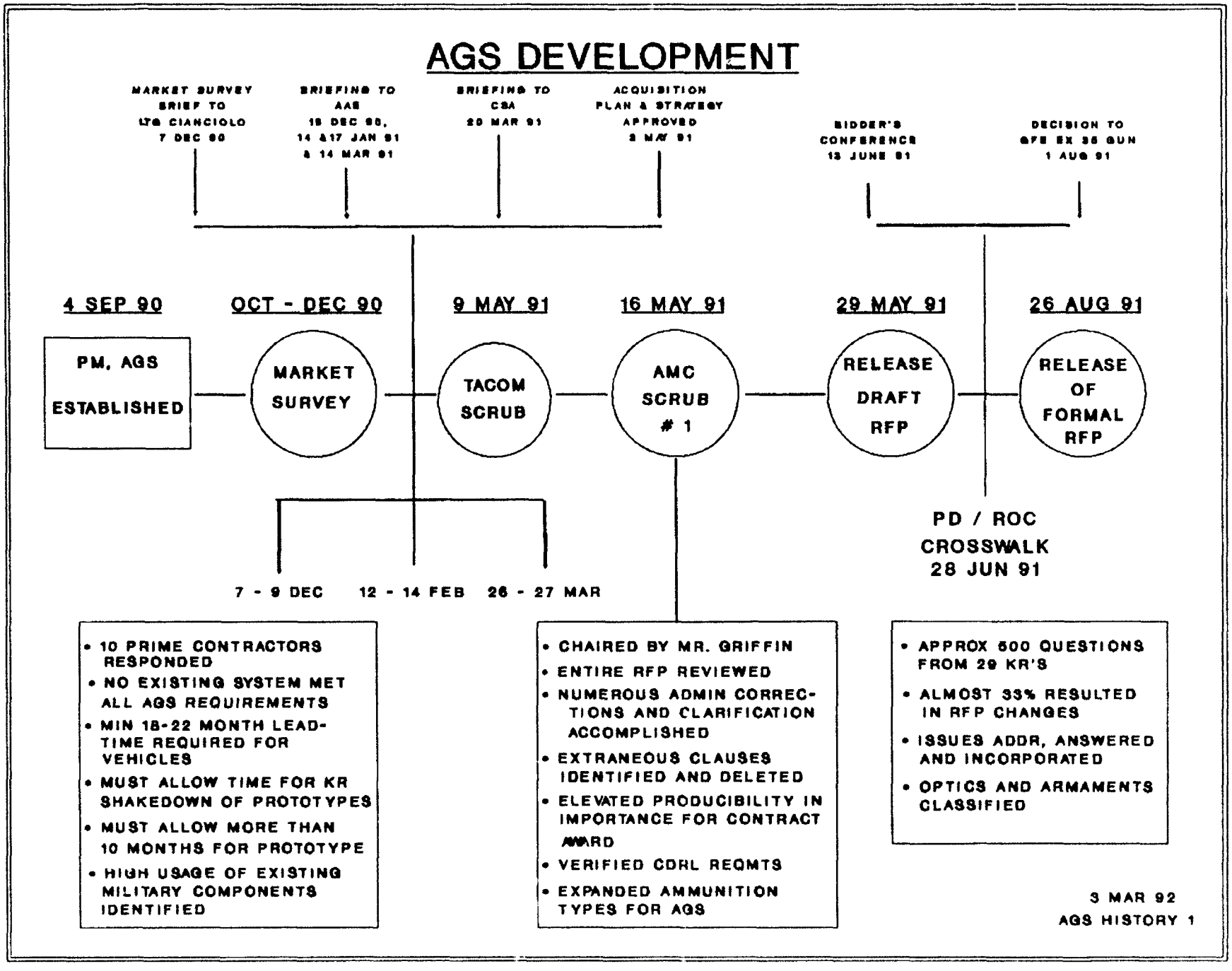
ACQUISITION MILESTONES AND PHASES



APPENDIX III:

AGS PROGRAM DEVELOPMENT

AGS DEVELOPMENT



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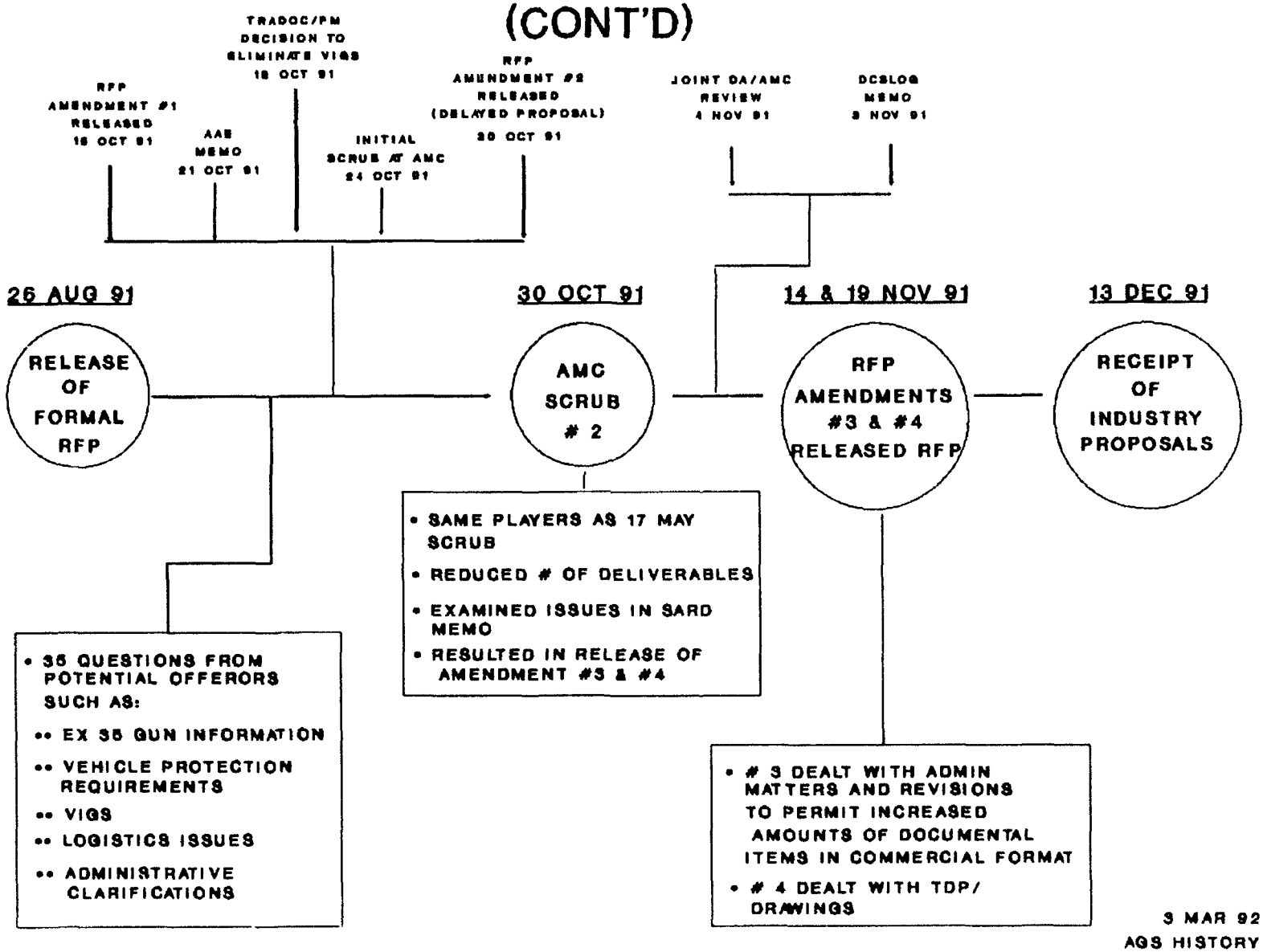

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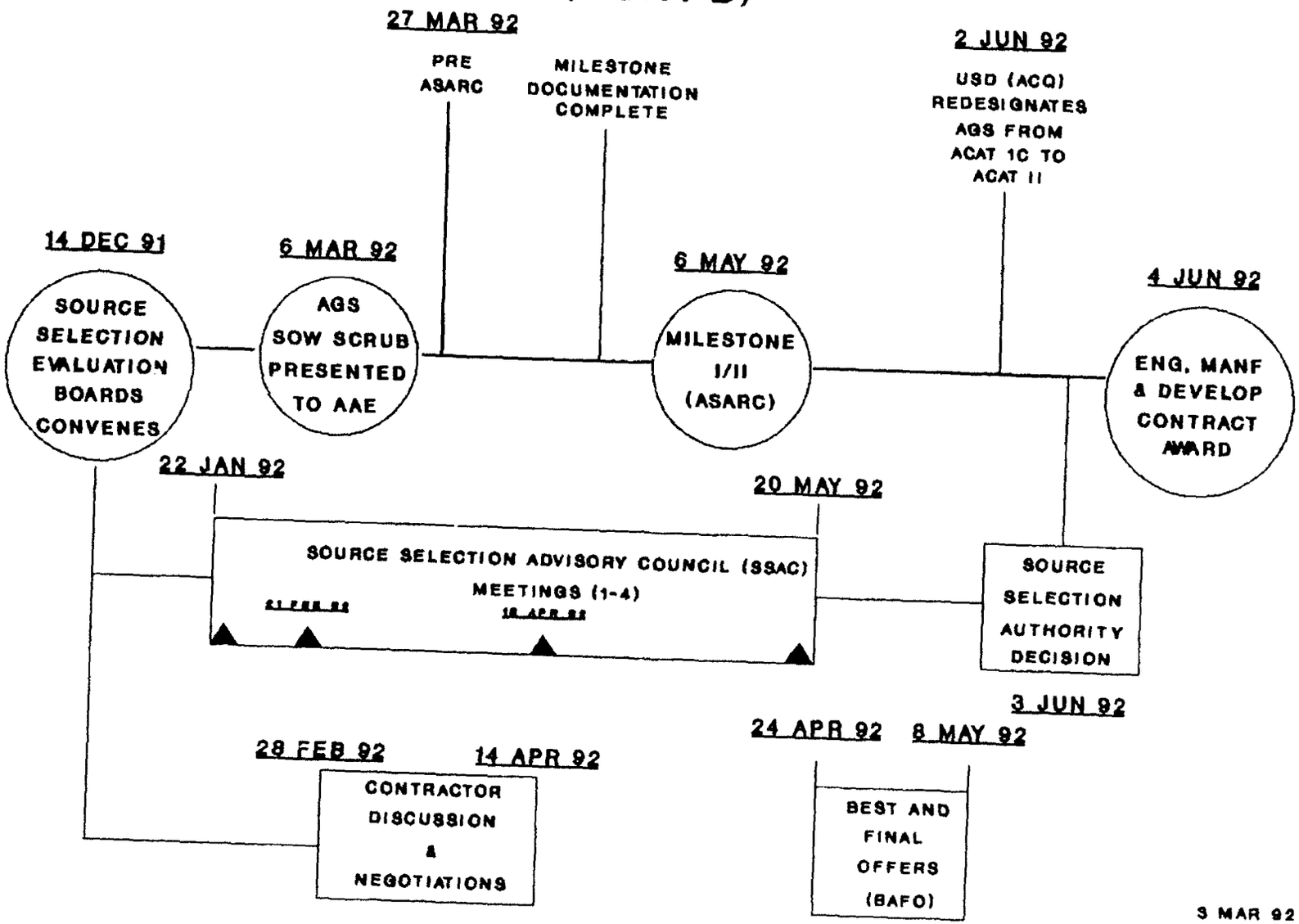

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[2]Alton R. Brown and Judith J. Gordon, "Acquisition Streamlining: Increasing Management Control," Program Manager (May-June 1988): 35.

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[18]Defense News, November 4, 1991 ed., "U.S. Army to Revamp Solicitation For AGS." 3.

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