The original HAE UAV ACTD program plan anticipated a transition of management responsibility from DARPA to the Air Force at the end of Phase II. Engineering development and associated flight testing were to have been completed by this time. It was believed that Air Force management of Phase III D&E activities would facilitate the eventual transition of the program to an MDAP and deployment. The program would still be an ACTD when management responsibility was transferred; authority to continue the innovative acquisition strategy used in the program would also transfer to the Air Force. This transition was unusual in that most ACTDs had a single institutional manager, with a transition to another organization for post-ACTD activities.

The transition from DARPA to the Air Force was completed on October 1, 1998, approximately one year later than planned. It would appear that this slip in schedule, which was driven by technical problems that caused delays in the initiation of Phase II flight testing, did not adversely affect the transition. However, engineering development and associated flight testing had not been completed and in fact had just begun.\(^1\)

\(^1\)Global Hawk air vehicle 1 had completed five flights at the time of transition. DarkStar air vehicle 2 had completed three flights.
The transition itself was relatively smooth. Many of the factors that facilitate a smooth interagency program transition were present.² A survey of DARPA transitions to the military services, industry, and other government organizations suggests that a clearly stated need, a good working relationship among project participants, persistence, joint support, user support, and early transition planning are among the factors contributing to a successful transition.³ The following can be said to characterize the HAE UAV ACTD program:

- The program addressed a validated need.
- The Air Force was designated the lead agency for Phase III and follow-on in the original memorandum of understanding (MoU) establishing the program.
- The transition point and associated criteria were identified in the earliest management plans.
- Air Force personnel had been integral to the program, and a supporting program office was established early in the program.
- The transition itself was well planned and documented in a series of issue papers, briefings, and interagency agreements.

The original HAE UAV ACTD program MoU, dated October 1994, laid the groundwork for a successful transition from DARPA to Air Force management. It assigned an Air Force colonel and a Navy captain as deputy program managers. The MoU itself was iterated among the staff of the relevant DoD and service organizations, and the rationale for the program was based on a validated Joint Requirements Oversight Council (JROC) mission need statement (MNS) for recon-


naissance, surveillance, and target acquisition (RSTA). The initial MoU also mentioned the principle of event-based timing and associated the transition to Air Force management with the completion of Phase II. The Air Force was identified as the lead agency for Phase III and beyond, and service deputy program managers were intended to transition with the program along with other service-specific billets supporting the program. Service roles and responsibilities were also laid out. The very structure of the plan—transitioning management to the lead agency during the ACTD program—was intended to facilitate successful transition to the formal acquisition process and to operational users.

Transition planning began early. A supporting office at the Aeronautical Systems Center (ASC) at Wright-Patterson Air Force Base (WPAFB) was established in November 1995, although logistics issues were being supported as early as August 1995. The ASC program office was intended to be a shadow organization to monitor and support HAE UAV progress. In fact, personnel from the ASC program office have been key in all HAE UAV ACTD program activities; the organization charts from the DARPA and ASC offices listed many of the same personnel. Many but not all of the key management personnel in the ASC program office did in fact remain in their positions at the time of the transition. Thus, some of the learning that had taken place under DARPA leadership regarding both the management (i.e., acquisition strategy) and technical aspects of the program was preserved.

The July 1996 transition plan—which was signed by the DARPA and Air Force principals—outlined the general transition approach, established a working group to update the transition plan and resolve issues, and directed the development of a lessons-learned database. Key decisions affecting the program transition required the approval of both the DARPA director and the ASC commander at WPAFB. Transition activities were defined in the following areas:

4 See *Long Endurance Reconnaissance, Surveillance, and Target Acquisition (RSTA)*, 1990.
• **Technical**: risk assessment and continuity of technical knowledge;
• **Financial**: funding;
• **Contracts**: contractual mechanisms;
• **Test and demonstration**: residual tasks and assets;
• **Supportability**: reliability and maintainability; and
• **Programmatic**: coordination with related programs.

The original management plan (dated December 15, 1994) identified the transition from DARPA to Air Force management as occurring in the third quarter of FY 1997, coinciding with the beginning of Phase III. The original program schedule chart indicates the planned transition occurring in April 1997—roughly halfway through the engineering flight test of the conventional UAV, six months before the beginning of the user demonstration, and two-thirds of the way through a limited demonstration activity for the LO UAV, which at that time was further along in development. At this time, a 12-month engineering flight test was planned and was to be followed by a 24-month user demonstration. Subsequent plans adjusted both the transition date and the lengths and start dates of the two flight test components. However, the transition was always associated with the completion of Phase II activities, which included the delivery and engineering flight test of two conventional UAVs and two LO UAVs. The actual management transition took place on October 1, 1998, well into development test but several months prior to its completion.

The apparent smoothness of the transition from DARPA to Air Force management belies some important problems. First, while most of the ASC shadow program office did transition, many core person-

---

5These dates are not inconsistent: The beginning of the third quarter of FY 1997 is April 1997.
nel—both government and Systems Engineering and Technical Assistance (SETA) contractor—did not. Because these new personnel were unfamiliar with the management approach being used, some time and effort were required to bring them up to speed. Second, although the general management approach remained similar, the Air Force style was very different from that of DARPA, as reflected in communication between the system program office (SPO) and contractors as well as in required program documentation. Financial management practices differed significantly as well; the Air Force tended to be somewhat more meticulous in tracking obligations and expenditures and required more accountability. Additionally, while the Air Force program office was initially smaller than the DARPA joint program office (JPO), the former grew considerably as the program progressed; thus, there were variations in interpreting and executing the management approach that did not exist in the small DARPA program office. For instance, whereas there were two Agreements officers in the Air Force SPO, under DARPA there was only one Agreements officer for all three segments. Finally, the Air Force personnel associated with the program in its early stages were predominantly from the acquisition community. By contrast, Air Combat Command (ACC) personnel were not deeply involved until flight test began, and then only a small contingent (the 31st Test and Evaluation Squadron [TES]) at Edwards Air Force Base were actively involved. Thus, the operational user was not involved in transition planning. This would later cause significant tension as the program approached its second transition from ACTD to MDAP status.

As Phase II engineering flight testing proceeded under DARPA, senior Air Force managers who were to assume responsibility for the program in FY 1999 began to express some uneasiness with elements of the acquisition strategy used in the HAE UAV ACTD program. One reason for this unease was that many of the senior Air Force officials who had originally been involved with the program had moved on. This illustrates both the difficulty and the importance of maintaining a consistent management approach during and after a transition. This issue was only partially resolved through briefings by the DARPA program director to key Air Force officials prior to the actual transition. These briefings came somewhat late in the process and did not fully succeed in obtaining buy-in from Air Force decisionmakers.
Nevertheless, the Air Force did retain the key elements of the acquisition strategy. This may be due in part to senior leaders’ recognition that the program was important both in terms of the system’s capability and as a demonstration of acquisition reform.

Air Force Program Management Directive (PMD) 2404, issued May 25, 1999 (eight months after formal management transition), delineated the roles and responsibilities of the various organizations involved with the HAE UAV. The PMD states that both Global Hawk (RQ-4A) and CGS (AN-MSQ-131) were managed out of the same program office in ASC. Program participants included the following:

- **The Secretary of the Air Force/Directorate for Information Dominance (SAF/AQIJ)** serves as the secretariat (civilian) focal point for the HAE UAV ACTD program in the Pentagon and coordinates all acquisition management, policy, and investment budget matters.

- **The Air Force Director of Operational Requirements (AF/XORR)** serves as the Headquarters U.S. Air Force (military) focal point, coordinates all operational matters (including support and operations budgets), and coordinates preparation for post-ACTD integration of the HAE UAV into the force structure.

- **The Aeronautical Systems Center/Reconnaissance Air Vehicle Directorate (ASC/RAV)** provides overall execution and management for the development, fabrication, test, and evaluation of the HAE UAV ACTD system; coordinates with test organizations; assists in operational requirements document (ORD) development; continues technology development for future application to the HAE UAV; and supports post-ACTD planning.

- **The Aerospace Command and Control and Intelligence, Surveillance, and Reconnaissance Center/Command and Control Directorate (AC2ISRC/C2)** supports the HAE UAV ACTD program through participation in planning activities, review meetings, and the like; establishes a prioritized list of system improvements; develops a CONOPS and an ORD; conducts an analysis of alternatives (AoA); and serves as the focal point for basing, force structure, personnel, and military construction (MILCON).
• **Detachment 1, Air Force Operational Test and Evaluation Center (AFOTEC)** plans and executes the MUA with the United States Atlantic Command (USACOM) and participates in planning and review activities.

• **The Air Force Flight Test Center (AFFTC)** provides the infrastructure to support flight testing and participates in planning and review activities.

• **The Air Education and Training Command (AETC)** participates in the training of IPTs and plans and conducts training for the life-cycle support of the system.

• **Headquarters, Air Intelligence Agency (HQ AIA)** develops an intelligence support plan (ISP) and a system threat assessment (STA)/system threat assessment report (STAR).

Clearly, the major Air Force players were ASC/RAV, AC2ISRC, and AFOTEC; these organizations are responsible for program execution and post-ACTD planning.

Some issues that arose in the course of planning for the transition were not completely addressed or determined by the time of the actual transition. These included the operational maintenance concept; post-ACTD activities, funding, and management/contractual issues; the relationship and roles of the ACTD and MDAP users (USACOM/JFCOM and ACC); and the status of residual program assets. These would become significant issues as attention focused on the transition from ACTD to MDAP. However, the majority of the work required to successfully execute Phase III user demonstrations had been resolved: completing engineering tests, user demonstration schedule and planned assets, and data collection and assessment leading to the MUA. The authority to use the innovative acquisition strategy transitioned to the Air Force along with program management responsibility.

With the exception of the time needed for new personnel to learn to manage under the program’s different approach, the innovative acquisition strategy used in the HAE UAV ACTD program appears not to have greatly affected the transition from DARPA to Air Force management. The flexibility inherent in the strategy may have allowed for easier adjustment as the program progressed through Phase I and
Phase II, but the factors chiefly responsible for the smooth transition (early planning, inclusion of the lead service as a critical partner from the beginning, and sustained top-level support from participating agencies) could be present in any program’s acquisition strategy.

In contrast, the program’s innovative acquisition approach had a profound effect on the transition from an ACTD to an MDAP.