CY 2004 FEDERAL AVIATION OPERATIONS/SUPPORT PROFESSIONAL AWARD NOMINATION NARRATIVE

NOMINEE: JAMES S. (JIM) WILLIAMS
CHIEF OF MAINTENANCE
WSI-SRS AVIATION OPERATIONS DEPARTMENT

Hallmarks for the WSI-SRS Aviation Operations Department (AOD) in 2004 have been teamwork, talent and motivation for continued success. AOD personnel consisting of ten highly proficient pilots, three aviation maintenance technicians operating and maintaining two BK 117 helicopters supported by an administrative staff of two have all contributed significantly to a superior record of safety and aircraft availability. The process of calling upon the aviation experience and knowledge of AOD personnel has resulted in continuous improvements in safety, maintenance, flight operations and procedures. One individual who has been innovative, and dedicated and demonstrated persistence that has sustained the department's success in the areas of aircraft record maintenance, avionic panel improvements, aviation safety and overall high mission availability is **Jim Williams**, Chief of Maintenance.

With Jim's leadership and support, AOD pursued several projects to evaluate and/or enhance operations, training, maintenance, and records keeping.

- Installed an intensive retrofit of instrument panels, replacement of avionics, and conversion of instrument panel lighting for night vision goggle compatibility.
- Developed an automated spreadsheet application to track component times more accurately.
- Adhered to a recurrent training program implemented in 2003 that consists of attending at least one FAA approved airframe, power plant or aircraft systems course during the fiscal year. This applies to all personnel performing maintenance on Department of Energy (DOE) aircraft.

Through the use of effective business practices, Jim's area of responsibility completed the FAA Part 135 annual audit and the DOE Office of Aviation Management (DOE-OAM) annual field audit with no findings.

Jim has excelled in his management and leadership. Maintenance personnel have acquired and maintained the certification and training, as well as the on-site support facilities to provide aircraft maintenance services at a significant savings to DOE while minimizing aircraft downtime. Under his direct supervision, the Aircraft Maintenance Section continued to exceed performance measures by delivering a 98.6% aircraft mission availability and averaging an availability rate of 99% over the past eight (8) years. This was especially significant in 2004 due to the fact that only one aircraft was available for maintaining mission readiness, pilot training, and other operational requirements while the other aircraft was undergoing an extensive instrument panel/avionics upgrade at the factory from June until October. All of this was accomplished while successfully completing the annual FAA Part 135 audit conducted by the FAA Columbia SC Flight Standards District Office (FSDO) and the annual field review conducted by DOE OAM.

Aircraft Maintenance Section continues to provide excellent service reliability by performing all inspections in-house in lieu of having this work done with outside resources. In 2004 these services were primarily airframe work and included 50-, 100-, 150-, 200-, 250-, 300-, 600-hour inspections, along with 1-year and 2-y

The Aircraft Maintenance Section remains in compliance with a Quality Assurance Procedure of checks and balances for internal oversight of all major component and aircraft systems work. As a result, AOD has been able to continually maintain a high level of mission readiness due to the quality maintenance performed during aircraft inspections. The two helicopters have minimal unscheduled maintenance resulting in no disruptions to the WSI flight schedule. This could not have been accomplished without the leadership and expertise displayed by Jim Williams.

In June 2004 one of the two DOE helicopters was flown to Grand Prairie Texas to undergo an extensive retrofit of instrument panels, replacement of avionics, and conversion of instrument panel lighting for night vision goggle compatibility. Over a four-month timeframe, Jim made four trips to the factory to insure that work was being performed to specifications and good progress was being made toward completion. After test flights by AEC crews, a WSI flight crew returned the helicopter to SRS in October. Jim and the Chief Pilot performed extensive follow-up flights to insure the aircraft was properly configured and functioning correctly. Jim compiled a list of avionics engineering issues that were reviewed in detail with AEC management and engineering staff. During the months of November and December, Jim called in AEC technicians to evaluate and made corrections. Jim, along with his two fellow mechanics, also corrected several problems themselves during this period. Before the second aircraft was scheduled for the instrument panel retrofit at the factory, Jim and his maintenance staff thoroughly analyzed all installed systems in order to eliminate excessive aircraft downtime. At no time while the first aircraft was in retrofit, or during this evaluation period, was the security mission capability compromised. When only one-helicopter was available, Jim and the Chief Pilot agreed and adhered to a training schedule of one specific day during the week in order to fulfill Part 135 training requirements.

Jim's good planning allowed the replacement of spacer tubes in the aircraft rotor head on one aircraft during its instrument panel upgrade. Factory technicians replaced the spacer tube on the second aircraft on-Site. Impact to the security mission was minimized and only material costs were incurred.

Jim was proactive in anticipation of an Airworthiness Directive to be issued in 2005 that would apply to amount of blade lag in BK117 rotor blades. Initially a factory service bulletin addressed the issue with the C-models of the BK 117. AOD maintains three sets of blades for its two BK 117 A-3 models, and there were no service bulletins pertaining to these models. Jim contacted factory support personnel and determined that by changing the amount of lag prescribed by the factory, premature cracking in the blade root could be prevented in these earlier model blades and the modification would satisfy the pending airworthiness directive. By year-end, one set of blades had been completed with the two remaining set to be done in 2005. Overall, Jim's initiative will result in significant time saving and minimize down time that would impact aircraft availability.

Jim used his extensive AutoCAD skills to layout the engine power turbine rotor system and plot the inherent blade shift over time. The design allows the recording of readings taken during inspections so that a "history" can be developed on the blade shift tendencies without having to do extensive inspection records research. This results in a large saving of time during inspections and helps to establish a timeframe when the blades may become imbalanced which, in turn, impacts the lifecycle of the engine. This was accomplished without any additional cost to DOE.

In anticipation on one aircraft being out of service for an extended period for instrument panel upgrade, Jim and his mechanics accomplished an engine change on the other aircraft. The amount of time left on the old engine would have expired while the other helicopter was being upgraded. This was accomplished in a one-day timeframe in order to minimize the impact to the security mission and aircraft availability.

Through Jim's efforts, all AOD aviation parts inventories are arranged by ATA code standards while all precision tools are calibrated annually with the requirements set forth in ISO / IEC Guide 25 1990E, MIL-STD-45662A and ANCI / NCSL Z 540-1-1994. In addition, Jim spearheaded the acquisition of off-the-shelf inventory control software developed by CompuTrac. This software was received late in the year and will greatly enhance inventory control and cost measures. Full implementation will be completed in 2005.

Throughout most of 2004, Jim and one other mechanic accomplished all maintenance tasks, both major and minor, without undue delay. Fortunately, in November AOD filled a 12-month job vacancy by hiring an aviation mechanic with over 14 years of turbine helicopter experience with specialty training in the BK-series aircraft. With the addition of this mechanic, Jim and his maintenance staff have close to 50 years of helicopter maintenance experience.

The Helicopter Association International (HAI) recognizes the safe operation of helicopters by awarding annually the "Operator Safety Award" to those whose safety statistics support safe, reliable, accident-free operations for the year. In 2004 WSI AOD was again recognized by HAI as having an outstanding safety record and was awarded this designation. AOD has received this award continuously since 1986. Jim and his staff have contributed extensively to this effort by maintaining an outstanding safety record while operating in a very challenging, high-risk environment.

Best safely practices are utilized throughout AOD's formal safety program. At each quarterly safety meeting, Jim, pilots, and the mechanics review accidents and incidents from the NTSB data bank for same–model aircraft as well as others of importance. Also included are safety topics relevant to work and home. Culture, attitudes, experience and decision-making of both the pilots and the mechanics, along with strong management support, contribute to excellent safety record and mission readiness.

AOD safety performance measures involve aircraft maintenance and are addressed through the following:

- Safety Standards addressed in the General Operations Manual for FAR 135 Operators

- WSI annual Safety Performance and Analysis Report prepared on measurement, trending, and analysis of safety and health required by the Integrated Safety Management System.
- Quarterly Safety Appraisals performed on the AOD facilities (Standard Procedure 2-5100)
- Operational Hazard Reports filed by any employee at any time a hazard is found or perceived (Standard Procedure 3-5117)
- Internal and external safety audits performed by DOE, WSI and Site fire safety engineers