

1. INTRODUCTION

NASA Kennedy Space Center Flight Operations operates and maintains 3 UH-1H-II aircraft and associated Aerospace Ground Equipment (AGE) in support of various NASA and government missions. Flight operations are conducted under NASA and FAA regulations, and are under the direction of the NASA KSC Chief of Flight Operations based at the NASA Kennedy Space Center Shuttle Landing Facility. The contractor shall provide support for flight, maintenance, and operations of the three UH-1H-II aircraft.

1.1. BASELINE WORK

1.1.1. General Requirements

- i. Operate and maintain NASA-KSC helicopters in accordance with GSA FMR 102-33, *Management of Government Aircraft*; NPD 7900.4 - *Aircraft Operations Management*; NPR 7900.3C (et.seq.) - *Aircraft Operations Management Manual*; KNPR 7900.3 - *Kennedy Space Center Aviation Safety Program*; KTI 7900_OPS - *Kennedy Space Center Aircraft Operations Manual*; KTI 7900_MX - *Kennedy Space Center Aircraft Maintenance Manual*, Bell airframe and Honeywell engine maintenance manuals and service bulletins; FAA Federal Aviation Regulation (FAR)/Airworthiness Directives (ADUH-1H II) to support 300 flight hours per year distributed between 3 aircraft:
 1. Perform maintenance, rebuilding, quality assurance insight, and alterations to aircraft listed in Attachment J-04 using experienced personnel with current FAA airframe and power plant licenses qualified in aircraft type.
 2. Provide personnel with an inspection authorization (IA) in type to support all maintenance activities.
 3. Provide logistical services (purchasing, inventory control, storage, tracking, etc.) for the identification, procurement, tracking, inventory, and storage of hardware, equipment, and supplies required to operate and maintain aircraft and AGE listed in Attachments J-03 and J-04.
 - a. Includes new purchases and existing spare part allocations previously purchased by NASA.
 4. Provide authorized personnel and process controls to ensure that approved aircraft components are utilized for maintenance, rebuild, and alteration activities.

5. Contact the NASA-KSC Chief of Flight Operations for direction and authorization when NASA aircraft are at an off-site location and repairs are required for the safe continuation of flight mission or return to home station. Upon return to KSC, prepare the necessary follow-up documentation.
 6. Perform overhaul, repair, and unscheduled maintenance above and beyond standard and scheduled maintenance on aircraft identified in Attachment J-03 and J-04 up to \$75,000 per fiscal year including parts and labor. Note: this is inclusive of all 3 aircraft listed in Attachment J-03 and J-04.
 7. Perform overhaul, repair, and unscheduled maintenance above and beyond standard and scheduled maintenance on Aerospace Ground Support Equipment identified in Attachment J-03 and J-04 up to \$25,000 per fiscal year, including parts and labor. Note this is inclusive of all GSE identified in Attachment J-03 and J-04
 8. Support servicing, troubleshooting, and minor repairs to other NASA aircraft not identified in Attachment J-03 and J-04, as directed by NASA-KSC Chief of Flight Operations not to exceed \$10,000 per fiscal year.
- ii. Ensure that KSC assigned aircraft are mission ready, and provide day-to-day scheduled and unscheduled flight operations, diagnostic checks, unscheduled and preventative maintenance to ensure airworthiness and availability of the aircraft.
- iii. Perform helicopter operations and crew in support of missions per NASA approved schedules or rapid response call-up at the direction of the NASA-KSC Chief of Flight Operations:
1. Missions may include, but are not limited to: training, security patrol, helicopter firefighting missions (e.g. Bambi Bucket operations), security response, environmental, search and rescue, photographic missions, and medical evacuation
 2. Provide/maintain one ready aircraft and crew to support a 30 minute alert response Monday thru Friday between the hours of 0800 – 1600L.
 3. Provide pilot(s) support to missions listed above of up to 200 flight hours per year. Note that Government personnel will pilot aircraft for approximately, but not limited to, 100 flight hours per fiscal year.

4. Provide maintenance support to missions listed above of up to 300 flight hours per fiscal year
 5. Obtain NASA approval prior to executing a mission.
- iv. Develop an aircraft mission schedule for NASA-KSC assigned aircraft on a weekly basis using the NASA Aircraft Management Information System (NAMIS), for approval by the NASA-KSC Chief of Flight Operations.
1. Mission schedules may include, but are not limited to: off-shift, weekends, night (with and without night vision equipment), holidays, multiple missions over a 24-hour period, or exceed the crew duty-day for a single crew, and mission durations of up to ten hours.
 2. Accommodate changes in the flight schedule up to 24 hours prior to the mission
- v. Procure/provide all personal protective equipment (PPE) for pilots and crew (Government and Contractor) for both flight and non-flight work activities, including but not limited to: flight suits, LPUs, helmets, eye protection, NVG mounts, hearing protection, and all OSHA/NASA regulated safety equipment. NASA-KSC Chief of Flight Operations to ensure compatibility of PPE with aircraft configuration.
1. Develop and implement a calibration, certification, maintenance, and inspection program for PPE utilizing closed loop tracking and verification excluding LPUs
 2. Track and maintain PPE calibration records in NAMIS
 3. LPUs are maintained and repaired under the KPLSS contract and is a government provided service. LPU calibration shall be tracked by the contractor in NAMIS
- vi. Procure/provide all tools and equipment, above and beyond that which is listed in Attachment J-03 and J-04, for maintenance and inspection personnel required to operate and maintain NASA-KSC assigned aircraft
1. Develop and implement a calibration/certification program for tools and equipment utilized for maintenance operations that perform critical operations or final measurements
 2. Track and maintain tool calibration records in NAMIS
 3. Utilize existing NASA tools and equipment as applicable and directed by the NASA-KSC Chief of Flight Operations
- vii. Support NASA quality assurance and safety personnel in the development of inspections, safety analyses, and resolution of issues.

- viii. Develop reports and field questions in support of the Intercenter Aircraft Operation Panel review process.
- ix. Provide a flight mechanic aboard helicopter missions for up to 300 flight hours per fiscal year when operation of ancillary on-board aircraft systems is required to satisfy mission requirements, or deemed necessary by the NASA-KSC Chief of Flight Operations. Note that flight mechanics will fly missions piloted by Contractor and/or Government personnel.
- x. Perform setup, provide training on, and operation of helicopter mounted night vision equipment for missions requiring its use.
- xi. Operate and maintain Aerospace Ground Equipment (AGE) identified in Attachment J-03 and J-04.
 - 1. Develop procedures for the operation and maintenance of AGE identified in Attachment J-03 and J-04, and obtain NASA-KSC Chief of Flight Operations approval for procedures.
 - 2. Perform calibration/certification of AGE listed in Attachment J-03 and J-04, and maintain records of calibration/certification of AGE.
- xii. Support other governmental agency, commercial aircraft, and other NASA-sponsored commercial projects on a non-interference basis.
- xiii. Provide ground handling services for government aircraft operations at the Shuttle Landing Facility, or other areas at KSC, to include but not be limited to: aircraft fueling, loading/unloading of liquid oxygen, commodities handling/loading, passenger handling, and aircraft marshalling.
- xiv. Operate 2 government furnished refueling trucks for helicopter and aircraft refueling. Notify the NASA-KSC Chief of Flight Operations of any discrepancies or issues with fueling equipment. Note fuel trucks to be maintained by other government contractor. Fuel to be provided by other government contractor as a government provided service.
- xv. Operate government furnished liquid oxygen loading cart in support of government aircraft requiring LOX servicing. Liquid oxygen loading cart to be maintained by other government contractor. LOX to be provided by the other government contractor as a government provided service.
- xvi. Operate government furnished GN2 cart in support of government aircraft requiring GN2 servicing. GN2 cart to be maintained by other government contractor. GN2 to be provided by other government contractor as a government provided service.
- xvii. Comply with a Foreign Object Debris (FOD) prevention program for areas utilized by NASA-KSC Flight Operations as defined by the NASA-KSC Chief of Flight Operations.

- xviii. Provide 24-hour on-call pilot and flight mechanic capability in support of aircraft crash recovery and contingency operations with a response time no more than one hour after notification. The on-call personnel shall be the Contractor's POC responsible for responding via telephone in a NASA declared contingency or aircraft accident; the on-call personnel shall be capable of answering emergency related questions and contacting other flight operations personnel to mobilize if required.
- xix. Maintain, and keep current, flight planning documents for all pilots (Contractor and Government) by providing applicable aeronautical publications (FAA sectionals, FLIPs, etc.), access to current weather information, and Notices to Airmen (NOTAM) to assist aircrews in their flight planning duties at the SLF.
- xx. Support related flight operations meetings to include but not be limited to: staff meetings, scheduling meetings, and systems familiarization meetings.
- xxi. Perform a semi-annual safety and operations inspection of the 11 helipads located at KSC. Helipads shall be inspected for windsock condition, markings (paint), grass height (mowing), lighting (if applicable), obstructions, and any other conditions deemed necessary. Any discrepancies shall be noted and reported for resolution. Notify the NASA-KSC Chief of Flight Operations of any discrepancies or issues affecting operations and safety of aircraft. Note the resolution of helipad issues will be the responsibility of the NASA-KSC base operations contractor.
- xxii. Maintain a clean and safe environment in the government provided aircraft hangar.
- xxiii. Support all NASA inspections to ensure compliance with government regulations

1.2. DOCUMENTATION

- i. Develop a quality assurance plan, approved by the NASA-KSC Chief of Flight Operations, to ensure maintenance, repair, and operations are conducted per applicable requirements. Maintain quality assurance records for inspection and review by NASA.
- ii. Maintain and retain aircraft maintenance, operational, and related records and data in accordance with KNPR 1440.6 – *KSC Records Management*
- iii. Develop a Safety Plan, approved by the NASA-KSC Aviation Safety Officer, to ensure compliance with KNPR 8715.3, Volume 1, *Safety Procedural Requirements for Civil Servants/NASA Contractors*.
- iv. Develop and implement a tool control and calibration plan, approved by the NASA-KSC Chief of Flight Operations, for tools and hardware used on or around flight hardware. Tool control plan shall include lost tool procedures
- v. Develop and implement a data impoundment plan for implementation in the event of an aircraft accident or at the direction of the NASA-KSC Chief of Flight Operations.
- vi. Develop and implement a confined space program in compliance with NPR 8715.3
- vii. Develop and implement a fuel surveillance program for aircraft fuels to ensure proper fuel quality prior to use consistent with AC 150/5230-4B, *Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports*
- viii. Provide a monthly Aircraft Operations Report compatible with Microsoft Office software. The report shall provide comprehensive insight to the operations and maintenance of all NASA-KSC assigned aircraft to include the cumulative run-time, details of maintenance performed (type, findings, parts replaced), schedule of planned maintenance, and impacts to known operational requirements. The report shall provide in-depth insight to the budget, tracking plan versus actuals with an explanation of variances, corrective action if appropriate, and End-of-Year (EOY) estimate. The report shall also document personnel training and certification status and identify upcoming events that may potentially impact operational schedules.
- ix. Provide a monthly Aircraft Fuel Usage Report. The report shall describe monthly aircraft fuel usage by date, tail number, quantity, EOM storage inventory level, and shall include cumulative year-to-date usage data
- x. Utilize the NASA Aircraft Management Information System (NAMIS) to capture and report on all aircraft spares requisitions, receipts, issues, turn-ins and due in from maintenance (DIFM) transactions; track all aircraft maintenance actions for scheduled and unscheduled aircraft maintenance, including calibration items, tool and equipment usage, fuel usage, inspections, overhauls, and configuration changes;

- schedule all flights by all aircraft and all aircrew; and capture all flight times, cycles, and aircrew currency events and for all aircraft operations, maintenance, and logistics support services. Utilize NAMIS to produce reports as requested by NASA and provide full access to the Government.
- xi. Maintain and update procedures to support NASA-KSC Flight Operations. Develop new procedures as required. All operational and maintenance procedures shall be approved by the NASA-KSC Chief of Flight Operations

1.3. TRAINING

- i. Ensure pilots meet the qualifications of a NASA pilot as defined in NPR 7900.3C (et. seq.), KTI 7900_OPS, and the following qualifications:
 1. Pilot:
 - a. Possess a Federal Aviation Administration (FAA) Class One Medical Certificate issued within the past 12 months by a National Aeronautics and Space Administration (NASA) or FAA-approved medical examiner. Six months for pilots over 55 years of age.
 - b. FAA Commercial Rotorcraft Pilot License instrument rating, and the following minimum flight experience:
 - i. 1500 pilot hours (helicopter hours)
 - ii. 250 hours night vision equipment time, or current and qualified NASA NVG pilot. NVG time must be documented
 - ii. Obtain NASA-KSC Chief of Flight Operations approval for new pilot hires and crew position selections.
 - iii. Participate in NASA provided currency and maintenance certification training
 - iv. Ensure personnel performing maintenance, rebuilding, quality assurance insight, and alterations to aircraft are experienced personnel with current FAA Airframe and Power Plant licenses and are qualified in aircraft type
 - v. Ensure personnel performing quality assurance insight are experienced and possess a FAA Inspection Authorization certificate in aircraft type to support all maintenance activities
 - vi. Establish and maintain a training program compliant with applicable FAA certification requirements, NASA NPR 7900.3C (et. seq.), KTI 7900_OPS, and KTI 7900_MX to ensure all pilot, maintenance, flight mechanic, and other crew position personnel are trained, qualified, and certified for their position. Maintain training records including: certified record of ratings held; certified record of all formal training; record indicating that the maintenance and inspection procedures have been read and understood; other pertinent records relating to maintenance enrichment training; and a copy of FAA Medical Certificate.
 - vii. Ensure that all personnel maintain training and clearances required for access to the Kennedy Space Center as NASA contractors.
 - viii. Maintain NASA mandated pilot currency and maintenance certification training per NPR 7900.3C (et.seq.), KTI 7900_OPS, and KTI 7900_MX.

- ix. Ensure pilots obtain and maintain currency and proficiency in night vision equipment for flight missions requiring their use.
- x. Ensure servicers are trained in refueling/de-fueling procedures, uploading of liquid oxygen, and other commodities as may be necessary for aircraft support, in addition to aircraft handling and marshalling procedures. Servicers shall have a minimum of 1 year experience working with aircraft ground operations.
- xi. Maintain personnel certification for all required NASA-KSC and Shuttle Landing Facility training requirements, and all required NASA-KSC safety training. Provide training records to NASA as requested.

1.4. PERFORMANCE STANDARDS

Work Requirement Number	Title	Performance Standard
1.0	Mission Readiness	Ensure one helicopter is mission ready at all times
2.0	Mission Readiness	Ensure that a single helicopter is in a non-mission ready status for no more than 96 consecutive hours. Ensure that no more than two helicopters are in a non-mission ready status for no more than 48 consecutive hours, excluding those planned maintenance activities pre-approved by NASA
3.0	Support Readiness	Ensure AGE equipment listed in Attachment J-03 and J-04 is mission ready at all times

2. NON REOCCURRING WORK

1. Perform unscheduled maintenance and repair of equipment listed in Attachment J-03 and J-04 when value of repair exceeds \$10,000 for equipment, or \$20,000 for aircraft. Submit to the NASA-KSC Chief of Flight Operations timely and detailed written proposals including recommended course of action, analyses, cost estimate, schedule, options, and list of vendor sources.
 - a. Contractor to procure, install, and verify parts and items required for unscheduled maintenance
2. Provide Flight Operations IDIQ services to NASA-KSC Flight Operations in support of NASA programs, projects, and studies as requested by the NASA-KSC Chief of Flight Operations.
3. Provide IDIQ support for flight operations that exceed the flight hours listed in paragraph 1.1.1..iii.
4. Provide IDIQ support for the operation and maintenance of other flight and ground equipment as acquired for future operations and missions.