

ATTACHMENT J-3
SPECIALIZED PHYSICIAN SUPPORT
FOR HUMAN SPACECRAFT
LAUNCHES AND LANDINGS

FOR

MEDICAL AND ENVIRONMENTAL
SUPPORT CONTRACT (MESC)

SPECIALIZED PHYSICIAN SUPPORT FOR HUMAN SPACECRAFT LAUNCHES
AND LANDINGS - ATTACHMENT J-3**1.0 Background**

Human spacecraft, including the Space Shuttle, involves hazardous activities during launch and landing periods. Unique hazards may occur at NASA-Kennedy Space Center (KSC), Florida (FL) during the periods of launch and landing and medical teams must be available to provide definitive medical care to patients on-site and to those who may have to be transported from NASA-KSC to a hospital for treatment. Persons involved with or spectators to this activity are at risk of injury during emergency situations.

The best possible medical care at NASA-KSC must be assured in any emergency, including those which might result in severe injuries or mass casualties. This medical care may include on-site emergency treatment and transportation to an appropriate hospital. This care requires trained and experienced medical teams of specialized physicians, who must be available during periods of launch and landing, who have knowledge of the environment at NASA-KSC and its unique hazards.

2.0 Launch and Landing Medical Support

The MESC Contractor shall provide a group of four medical physicians that will make up a medical team that shall provide medical support onsite at NASA-KSC as required per this attachment, during scheduled Space Shuttle and other Human Spacecraft Operations (launches and landings, and attempts) and other contingencies or simulations. During launch operations, this group of Contractor's physicians may also be tasked to provide medical care to spectators and non-astronauts as required.

The MESC Contractor's medical support physicians shall be specialized, experienced, and current in either Emergency Medicine or General Surgery or Critical Care, or Anesthesiology. All the MESC Contractor's specialized physician medical support physicians are to be fully licensed and credentialed in the State of Florida to practice medicine.

The MESC Contractor's medical support physicians shall have current American Heart Association Advanced Cardiac Life Support (ACLS) certifications. At least two of the physicians in the group must be trained, experienced, and current in Emergency Medicine or General Surgery. The physicians that are Emergency Medicine Physicians must have American College of Surgeons Advanced Trauma Life Support (ATLS) certifications. The physicians that are General Surgeons must have ATLS certification or training equivalent to ATLS certification training. The MESC Contractor shall have a pool of at least 30 qualified physicians from which the Contractor can draw specialized physician medical support physician personnel for support of this attachment. Fifty percent of this pool shall consist of Emergency Medicine and/or Surgeons.

The MESC Contractor's medical support physicians shall provide medical support at NASA-KSC using accepted regional practices for field emergency medicine and trauma care, which meet the ACLS and the ATLS protocols in a field hospital setting (Triage Site) that does not

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have definitive surgery and noninvasive imaging, other than portable sonography, to medically treat at least seven Astronauts who may have an illness or injury condition(s) resulting from an emergency of the Space Shuttle or other human spacecraft.

The illness or injury conditions mentioned above may be related to exposure to fire, blast/explosion, deceleration/impact, toxic chemicals such as coolants, hydrazine fuels, nitrogen oxides, hydraulic fluids, atmospheric decompression, radiation, and hyper- or hypothermia. Conditions may also be physiologic changes related to a normal space flight which may include hypovolemia, neurovestibular alterations, cardiovascular deconditioning, muscular atrophy, bone demineralization, anemia, decreased immunity, and psychological stress.

The MESC Contractor shall provide all medications, supplies, and equipment in support of the requirements described in this attachment, J-3. It is the Government's expectation to have the contractor provide, at a minimum, the medications, supplies, and equipment, as listed in reference document titled, *List of Government's Expected Minimum Requirements for Contractor Specialized Physician Medical Support Medications, Supplies, and Equipment*, (Reference Section L.18 MESC Reference Documents), in order to provide medical support at NASA-KSC for the following cases: four ACLS Code patients, four Rapid Sequence Induction patients, four Seizure patients, four Head Injury patients, four Spinal Shock patients and four Toxic Exposure patients. The Contractor's specialized physician medical support physicians shall be trained and certified in the use of all medications, supplies, and equipment that they propose to use.

Duration of Medical Support

During launch operations at NASA-KSC, the MESC Contractor's specialized physician medical support physicians shall be present on duty at least 4.5 hours prior to a launch until successful orbit is achieved approximately eight minutes after launch. However, if NASA/KSC is designated an AOA (Abort Once Around) Site, then the MESC Contractor's physicians shall be present for approximately one hour after launch. If a launch is canceled, the MESC Contractor's physicians shall be required to be present until released by the KSC Emergency Medical Services (EMS) Coordinator which is generally when the spacecraft crew has exited the spacecraft and returned to the Crew Quarters in the Operations and Checkout (O&C) Building on-site at NASA/KSC, approximately 2.5 hours from scrub announcement.

During landing operations at NASA/KSC, the MESC Contractor's specialized physician medical support physicians shall be present on duty at least 1.5 hours prior to scheduled landings until released by the EMS Coordinator which is generally when the spacecraft crew arrives at the O&C Building (approximately 1.5 hours after landing) or until the landing has been re-scheduled. The MESC Contractor shall also be able to provide specialized physician medical support on a best effort basis for unscheduled Shuttle or human spacecraft landings.

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Under either circumstance of a launch or landing, if a substantial viewing crowd is present, the MESC Contractor's medical support physicians shall remain at NASA/KSC until the crowd has dispersed and the physicians are released by the EMS. Also, under either circumstance, if there is a human spacecraft emergency, the MESC Contractor's physicians shall remain at NASA/KSC until their support is no longer needed and they are released by the EMS Coordinator, approximately 2.5 hours.

When circumstances allow after a landing, a Post-Landing Training Exercise (PLaTE) may be held. A PLaTE may be scheduled to occur at NASA/KSC after every human spacecraft landing but is typically performed approximately three times a year. The Contractor's specialized physician medical support physicians shall support every PLaTE that is held. A PLaTE usually does not last more than one hour.

The actual duration of total coverage will vary, but normally should not exceed eight hours.

Transportation for Patient Care to a Hospital

The Government will provide all transportation for patient care at NASA/KSC. The MESC Contractor's specialized physician medical support physicians may be required to provide medical care to a patient who is in-transit to a hospital. When it is determined that a patient must be transferred from NASA/KSC to a hospital, the EMS Coordinator will arrange for patient transportation either by helicopter, ambulance or other vehicle.

Medical Consultation

The MESC Contractor's medical support physicians shall provide consultation services in Emergency Medicine and Trauma Medicine with regard to the use of the latest and most appropriate medications, supplies and equipment for use in support of human spacecraft launches, landings, contingencies, and mass casualty support.

3.0 On-Site Simulations & Annual Orientation and Training Course**On-Site Simulations**

NASA/KSC will conduct On-Site Simulations of Shuttle or other human spacecraft contingencies/emergencies at NASA/KSC. The MESC Contractor shall provide a four physician specialized physician medical team to support any required simulation. The Government will determine which simulations are required to be supported which are approximately two times a year. The On-Site Simulations generally last between 3 to 5 hours. These On-Site Simulations are not associated with any spacecraft launches or landings and are for testing and training purposes only.

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Annual Orientation and Training Course

Specialized physician medical support physicians shall have completed an annual Spaceflight Medical Support Training Course within the last four years. The Course is described in Section J, Attachment J-1, paragraph 2.6 (h).