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U.S. AFCENT Combat Camera Team

7/7/2009 - CAMP BASTION, Afghanistan -- If the actions of a combat search and rescue crew were viewed as a symphony, flight engineers would be the conductors. They are experts on the aircraft's weapons systems, know how to operate the hoist, serve as radio operators and operate the .50-caliber machine gun. In many ways, it's man in harmony with machine.

As members of rescue operations in the Helmand province, flight engineers are required to stay familiar with the assigned Pave-Hawks in use there. They need to know the helicopter's strengths and weaknesses, its capabilities and the small differences that separate one helicopter from the next.

"Many times when a mission pops up on our radar, a pilot will go to a flight engineer and ask if it's feasible," said Tech. Sgt. Brock Woodward, 129th Expeditionary Rescue Squadron flight engineer deployed from Moffett Federal Airfield, Calif.

"They allow the pilot the freedom to not worry about the aircraft itself and focus on the mission at hand," said Maj. John Mangan, 129th ERQS Pave-Hawk pilot. "I rely on the flight engineer to know what our capabilities are in any given helicopter."

The 129th ERQS covers the dual role of providing casualty evacuation and personnel recovery/combat search and rescue in the Helmand province. Many of the missions require landing in hostile areas to extract the injured individual. During these missions, several factors are considered.

"I determine how much power the engines are capable of producing when going into an LZ (landing zone) and how much power is required when we take off with the extra personnel," Sergeant Woodward said. "Sometimes, that may mean dropping fuel or making some other modification to the flight regime and/or helicopter."

Other factors the rescue flights need to consider are the terrain, altitude and the weather at any given landing zone. Identifying variations in temperature, slopes and obstacles are a primary responsibility of the flight engineer and can determine mission success, especially in situations where they're rounding a tactical turn at 80 knots and coming to a rapid complete stop on the ground to avoid enemy fire.

"I factor in the elevation and temperature of a site and the weight of the aircraft," Sergeant Woodward said. "When I factor all this together with whatever maintenance deficiencies the bird has, I know how much power in percentage the engine can put out. That information tells the pilots what we need to make the mission happen."

Sergeant Woodward speaks of his responsibilities in the helicopter in such a nonchalant fashion one may think he is sitting in a classroom doing math calculations on the blackboard. In the heat of the mission though, he must accomplish this while hurtling through the air in a 20,000 lb. machine, with five radios blaring in his ears, while an injured Soldier is on the ground in need of critical care.

When the call "scramble" comes over the radio, the crews rush out to the helicopters and run through a checklist and make sure all the systems are up and running.

"When we get that call, all thought stops and our training and instincts take over," said Tech. Sgt. Ryder Kenney, 129th ERQS flight engineer. "We have to move quickly, but we also cannot afford to miss something crucial - that's why being familiar with the helicopter and running checklists are so important."

The rescue crews operate under a constant state of urgency. If they can extract the wounded and get them medical care within an hour, the chances of survival are the greatest. Many times, the rescue crews are flying into the points of origin - areas where the injured was wounded - which leaves the crews vulnerable to enemy attack.

"When (everything) is hitting the fan, you need to control the chaos in the helicopter," Sergeant Kenney said. "You are the voice of reason in the helicopter, sometimes you need to reign it all in and get the crew focused on the factors that are most important to prosecuting the mission."

This chaos of setting down on a hostile landing zone frequently tests a flight engineer's mettle more than getting accurate calculations of the helicopter's capabilities.

"Flight engineers are the voice of reason," Sergeant Woodward said. "If things get chaotic, I need to bring a sense of calm to the situation. For obvious reasons, this can present the most challenge."

Photos

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U.S. Air Force Master Sgt. James Patterson, flight engineer with the 129th Expeditionary Rescue Squadron, performs a preflight inspection of a HH-60G Pave Hawk, June 23, 2009, Camp Bastion, Afghanistan. (U.S. Air Force Staff Sgt. Shawn Weismiller)

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In essence, flight engineers are looked at as the peripheral eyes and ears of the pilots, the liaison between the pilots and the maintenance crews as well as systems experts who man a .50 caliber machine gun.

"The crew basically works around the flight engineer," said Tech. Sgt. Scott Matthews, 129th ERQS Aerial Gunner. "They know everything about the bird and they have comprehensive control when it comes to what needs to be done and what the helicopter can handle. Without question, every member of the crew consistently looks to the flight engineer for answers in the air and on the ground. It's a hell of a lot of responsibility."

Editor's note: These stories are part of a series detailing the different aspects of the combat search and rescue efforts in Afghanistan to aid U.S. and coalition servicemembers, Afghan National Security Forces and civilians.

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