

Flight oversight, risk management slash copter LTIs

AIR LOGISTICS, WHICH provides helicopter service in support of oil and gas operations worldwide, saw its US Gulf of Mexico accident rate soar in 2001.

Despite having all of the conventional aviation safety initiatives in place, the company experienced its worst year ever in 2001 in the Gulf of Mexico when it accounted for seven of the eight accidents involving helicopters.



Air Logistics pilots are required to complete a risk matrix checklist to identify and quantify possible risk factors or "links" in an accident chain before a flight from base to offshore and vice versa.

This was followed by three accidents in 2002 and two more in early 2003.

Examining the research available on aviation accidents in the Gulf, the company discovered one aspect of a **Shell Aviation** safety study that concluded the biggest safety improvement would be to put two pilots in the cockpit of every helicopter.

Air Logistics concluded that using two pilots on each flight, although safer, would be impractical but began looking for other options.

The question to be answered was, how could the company ensure that a pilot was considering all of the options before each flight and was not relying solely on their judgment but rather getting real-time help to identify and evaluate potential links in an accident chain.

In answer to its question, the company implemented a new approach to put a "second person" in each cockpit, providing the pilot with another resource to call upon.

As a result, the company's accident rate dropped to zero soon after implementation of the initiative in early 2003.

SECOND PILOT

Air Logistics' approach to put a second person in each cockpit and provide another resource for the pilot was to utilize a combination of increased operational oversight and a risk matrix.

Some aspects of each program have been used in the industry but the two were never combined nor received the commit-

ment to allow their full synergistic effect, according to the company.

Increased operational control (IOC) involves the company's management in the decision making processes of the pilot when conditions are less than optimal. It is like having a co-pilot with whom to discuss possible options before a flight.

The second component is the Risk Matrix card. This wallet-size card is carried by all pilots and incorporated into the aircraft checklists.

There are two levels of IOC. When one or more of the Level One conditions exist, a manager must be at the base and monitoring the flights. Level One conditions include:

- Ceiling less than 900 ft;
- Visibility less than 5 miles;
- Frontal passage;
- Unforecast severe weather;
- Flight following or communications problems;
- Extreme thunderstorm conditions and associated severe weather;

- Temp/dew point spread below 3°C;
- Wind greater than 25 knots;
- Gust Spread greater than 10 knots;
- Forecast icing;
- Hurricane threat.

When one or more of Level Two conditions exist, a manager must personally approve each flight or group of flights. Level Two conditions include:

- Ceiling less than <600 ft (VFR A/C);
- Winds greater than 30 knots;
- Wave height greater than 10 ft (single engine);
- Tailwind greater than 15 knots for start;
- Water temperature less than 20°C (single engine);
- Series of extreme squall lines During a hurricane;
- Visibility less than 3 miles (VFR A/C);
- Gust spread greater than 5 knots.

"All of the Level One conditions are flyable, they are within FAA limitations and they are within our operations manual," said **Mike Suldo**, Air Logistics' General Manager. "They are conditions that need to be monitored.

"Level Two is the same thing," he added. "The conditions are worse, they are still flyable but they need to be monitored more carefully."

The second component, the Risk Matrix card, accomplishes several objectives:

- It serves to identify and quantify, for the pilot, the possible risk factors or "links" in an accident chain before a flight;
- It quantifies, to the customer, why a flight may not be advisable;
- The formulation and revising of the card serves as a tool for hazard identification and discussion.

"When the pilot performs his aircraft checklist, he also completes the risk matrix information," Mr Suldo said.

"Each pilot also has a wallet size checklist so if he is not near his aircraft he can pull out the card and complete it," he added.

SAFETY INITIATIVES

The program was implemented in February 2003. The last accident prior to that date was in January 2003, and the company has recorded zero accidents since the program became effective.

It is difficult to prove cause and effect due to the fact that Air Logistics implemented other safety initiatives, but Mr Suldo credits most of the increased safety results to the operational oversight and risk matrix.



Air Logistics' LTI rate fell to zero shortly after implementing its operational oversight and risk management program in early 2003.

"Although other safety initiatives were implemented, the major share of improvement is due to better managerial awareness and pilot situational awareness brought about by the operational oversight and risk matrix program," Mr Suldo explained.

He also noted that a current Presidential appointee to the National Transportation Safety Board (NTSB), in a recent speech, singled out the company's program by name and recommended it as a model to follow for other industries.

The program has also been singled out

by several aviation safety auditors as an innovative and effective initiative.

"We have a list of things we've done in the last three years," Mr Suldo noted. "Some were cultural, some were on the aircraft and some included flight training devices.

"We talked with every pilot and mechanic and told them how important this program was to us and them," Mr Suldo continued.

The training devices include state-of-the-art parabolic screens forward and a digital data base.

The company's director of training worked with the software engineers to duplicate a flying experience as real as possible without actually being in one of the company's helicopters.

When the pilot "flies" offshore after putting in the GPS, the offshore platforms are in the same places.

The trainer can duplicate emergency situations that could never be done during actual flights.

In addition to buying two flight training devices, the company also installed a second VHF radio in each helicopter, collision avoidance systems, moving map GPS, better floats, and improved fuel systems offshore.

"But behind it all was better operational control," Mr Suldo maintains.

"People paying more attention, more situational awareness and more attention to what they are doing."

GOING INTERNATIONAL

Air Logistics will also be implementing the program in its international fleets in Nigeria, Mexico, Brazil and Trinidad as



Although presently only utilized in its US Gulf of Mexico operations area, Air Logistics is implementing its operational oversight and risk management program in its international operations as well as with its international partners.

well as with its international partners such as **Bristow Helicopters** in Scotland.

"We have conducted workshops to develop specific risk cards for them," Mr Suldo said, "which contain political risks and unique weather risks for the geographic regions that we don't have in the Gulf of Mexico."

The company is also helping to develop risk matrix cards for its operations in Alaska, although the managers and pilots will compile their own risk matrix cards for that region. ■