As we know, when a wildfire ignites, life changes fast. Flames blaze through timber and brush, destroying everything in its path. People are forced out of their homes. Erosion and landslides add to already difficult environmental situations. Enter the helicopter.

Helicopters were first used in 1947 to assist during wildland fires in Southern California and they have been heavily relied upon since. Today, the U.S. Forest Service says they could not live without these aircraft.

“Helicopters are incredible machines,” said Ken Ross, Helicopter Operations Specialist for the Pacific Northwest Region of the U.S. Forest Service in Redmond, Oregon. “Just by virtue of the fact they can hover allows us to provide close support to firefighters on the ground.”

**FIRST STEP TO ENTERING THE FIREFIGHTING INDUSTRY**

A helicopter operator’s first step in getting involved with firefighting is bidding for a contract. ‘Exclusive Use (EU) Contracts’ make helicopters solely available to the U.S. Forest Service for the purpose of fighting fires. However, some operators get involved only on an imperative basis through the use of ‘Call When Needed’ (CWN) contracts.

“Both contracts usually run anywhere from 60-120 days, sometimes up to 150 days,” said Ross. “During this time we have EU helicopters fully staffed seven days a week. Normally we contract these helicopters during the highest possibility of fire danger in a particular area.”

The U.S. Forest Service also says they do not use any particular size helicopters for their contracts. However, they say some aircraft [known as Type 1 aircraft] such as Skycranes, S-61s, Vertol 107-IIs, and the Model 234 Chinook are generally used for the specific purpose of water or retardant delivery.

“For these helicopters we are looking for water/retardant dropping capabilities,” said Ross “These aircraft typically don’t have firefighting crews with them. Instead, they have an aircraft operator who provides everything to keep operations going for the length of the contract. We, at the U.S. Forest Service will provide a liaison to assist the helicopter operator. Our liaison will conduct safety briefings and help with the required paperwork.”

According to Ross, the U.S. Forest Service contracts with different size companies — from operators with one helicopter to larger companies, many of them Helicopter Association International (HAI) members.
**Firefighting Helicopters**

Erickson Air-Crane is one HAI member involved in the firefighting industry, using a S-64 Aircrane Helitanker for aerial firefighting. This helicopter has a 2,650-gallon tank with microprocessor controlled tank doors that allow eight different coverage levels. The tank can be refilled in 45 seconds or less from seawater and fresh water sources as low as 18 inches. This capability puts their aircraft in demand around the globe.

“We have had great success with our international marketing efforts,” said Dennis Hubbard, Media Services, Erickson Air-Crane. “We began, simply, by talking to fire suppression agencies around the world and giving them enough information to lead them to request our helicopter.”

Erickson’s Helitanker has worked with both the City of Los Angeles and Los Angeles County Fire Departments including this past fall to stop blazes across Southern California. They also have been called upon by the United States Federal Bureau of Land Management (BLM), Department of Natural Resources and Environment, National Parks Service Australia, Ministry of the Interior in Greece, Korea Forest Service, Mexican Forest Service and the Italian Forest Service.

“I remember hearing that a high ranking Hellenic Fire Brigade official from Greece once remarked that our helitanker ‘is to firefighting as Coke is to beverages,’” said Hubbard.

**Firefighting Around the Globe**

Heading to Italy, Erickson’s helitanker gained popularity with help from one of the high-ranking members of the Civil Protection Department.

“The 2003 Undersecretary of State and Director General for the Department of Civil Protection, Dr. Guido Bertolaso, had a goal,” said Hubbard. “He wanted to make the S-64 the ‘diamond head of the Italian aerial firefighting fleet.’ Working with past HAI President Gian Franco Blower and our Italian subsidiary, it is apparent that his goal has been reached. We started with one helicopter and are now operating up to six helicopters in Italy during any given fire season.”

On December 29, 2001 Erickson Air-Crane was called upon in another part of the world. After arson fire ripped through Sydney, Australia, Erickson’s S-64 flew from its location in Melbourne to assist, gaining significant media attention for helicopter firefighting operations.

“There were news helicopters showing the firefighting efforts for 13 to 14 hours a day and at the time Erickson Air-Crane had the largest helicopter in the air,” said Hubbard. “Our Helitanker ‘Elvis’ assisted ground crews in saving about 1,500 homes around the Sydney area. In fact, recently Australia’s Prime Minister announced he was adding 60 million dollars to the firefighting budget and he specifically mentioned our S-64.”

Italy and Australia are not the only places Erickson has traveled to put out the blaze. Their services have been called upon in Greece, as well.

“Over 170 fires sprang up in Greece this summer,” said Hubbard. “Mostly attributed to arson, these fires spread from the northern border of Albania to the southern area of Peloponnese and were responsible for over 60 deaths and devastation over 7.5 million acres.”

Four Erickson Air-Crane Helitankers, already working for the Greek Ministry of Public Order, were called into duty. Those helicopters flew more than 300 hours the first week of the fires, dropping over four million gallons of water to assist in suppressing the blazes.

Another HAI Member, Columbia Helicopters, Inc., has been involved in firefighting operations since 1966. The company first fought fire using an S-58 and a modified cement bucket, but now relies upon their Vertol 107-IIs and Model 234
Allen says a typical day in aerial firefighting involves the helicopter crew heading out to a fire helibase. After getting preflighted and briefed the crew awaits their assignment.

“You receive your assignment, launch, and run for two-hour cycles,” said Allen. “Then you return, refuel, and go out again. It is also worth noting that different companies operate with different types of equipment. Here at Columbia, we operate with self-filling buckets suspended 200 feet below our ships. These buckets can fill from sources as shallow as 18 inches and can dip from sites surrounded by tall trees or down in steep canyons.”

The capacity of the water buckets depends on the size of the aircraft. For example, a Boeing 107 uses a 1,300-gallon bucket. A Boeing 234 Chinook can utilize a 3,000-gallon bucket, although a 2,600 gallon self-filling bucket is standard. Undeniably, water and retardant remain one of the firefighting helicopter’s biggest assets.

“When operating as initial attack, we try to find an anchor point — a spot that will cool down and not restart again and work from there,” said Allen. “The water cools the fire down until crews can get in there, cut some fire break lines, and begin dealing with the situation.”

Allen says after supporting one fire they prepare for the next — which has meant traveling to some of the biggest wildfires in the country.

“We have been involved in some of the largest wildfires; the Biscuit Fire [which took place in 2002 and burned nearly 500,000 acres of the Siskiyou National Forest in Oregon], the Hayman Fire in Colorado, the fires in Southern California, and many others.”

From the Northwest to the South, the firefighting business does not slow down. Chuck Brainerd, President and CEO of Brainerd Helicopters, Inc. located in Leesburg, Florida says his company has been involved in firefighting for 20 years. He says they average between 350 to 400-hours-aircraft fighting fires annually with their Sikorsky S-70 (UH-60) Black Hawk helicopters and a B-3 Astar by American Eurocopter.

“The helicopter is a great support tool for the firefighter,” said Brainerd. “Experience has shown that the helicopter adds a level of safety that only the helicopter can provide. The experienced pilot can see a bigger picture than the firefighters on the ground and advise them of unsafe situations. I believe that the firefighting industry has come to rely on the rotorcraft industry and we have come to rely on the firefighting industry.”

**FIRE TERMS**

**INITIAL ATTACK**
When a fire is first reported, relief is dispatched as quickly as possible — generally within 15 minutes of receiving the call — and relief personnel hit the fire fast and hard. The plan is to keep the fires small.

**HELICOPTER CREWS**
Helicopters and their crew play a crucial role in controlling fires from the beginning. A ‘Helitack crew’ is the nickname given to the people in a helicopter who respond to the fire first. These crews have an average of 7-10 people, but parts of the Northwest have set a minimum of 15 people to make up for operating fewer helicopters. However, when the blaze gets too big too fast, the U.S. Forest Service calls for more help.

“If the fire gets too large we typically rely heavily on helicopters to give follow-up support,” said Ken Ross of the Forest Service. “For anyone working on a large fire we can supply an external load of food, extra pumps, and hose out to the remote site. All supplies are flown in by helicopter — we basically end up with a small city provided by helicopters. This means anywhere from 20 to 300 people are involved in the operation.”

‘Helirappel crew’ is another term used when firefighters rappel out of the aircraft using ropes to get closer to the flames. This is done only after a secure landing spot is determined.

“These [helirappel] crews rappel anywhere from 20 feet in the air to 250 feet,” said Ross. “Most crew members are second or third-year firefighters and have had rigorous physical training.”
Some of the things we helicopter pilots see are spectacular,” said Columbia’s Kerry Allen. “I have seen a 200-foot tall wall of fire about one-fourth mile across. It is an amazing sight. If the fire is really hot, though, there is not much you can do but try to steer it away from structures. Helicopter firefighting is not like the movies where you see this huge wall of red, orange, yellow, and black and you go charging in and drop water on it and everything is O.K.”

HAI Affiliate Member, The American Helicopter Services & Aerial Firefighting Association (AHSAFA), is another organization dedicated to advancing forest and wildland aerial firefighting.

“I don’t believe the public realizes what a large role helicopters play in aerial firefighting,” said Tom Eversole, AHSAFA Executive Director. “They see fixed-wing airtankers on the news and I sense the public thinks these ‘big guys’ are out there doing everything. AHSAFA is made up of both airtankers and helicopters and there is a distinct role for each of them in aerial firefighting. They are both important assets in the Forest Service arsenal.”

As many know, devastation struck southern California when 16 wildfires came roaring through. According to the Los Angeles Times, at the height of [fire] evacuations in San Diego County, officials said nearly 350,000 households had received automated emergency phone calls warning them to evacuate. Using 2000 census data, emergency response officials estimated that they had ordered 513,000 of the county’s 3.1 million people out of their homes and advised 12,000 more to leave. As mentioned above, many HAI members were on the front lines battling these blazes. This list also includes the Los Angeles County Fire Department who had their entire fleet, nine helicopters (including three Sikorsky S-70 Firehawk helicopters), in use. Several S-64 Skycranes — Sikorsky’s 80-foot helicopter weighing 22,000 pounds empty and carrying tanks of up to 2,400 gallons of water — were also on scene.

The Helicopter Association International (HAI) remains well informed about its members and their firefighting capabilities. During the 2007 summer fire season, HAI President Matt Zuccaro visited several field sites across Idaho to meet with HAI firefighting members working on active fires in Garden Valley, Haley, Elk City, Cascade, Grangeville, Ketchum, McCall, Challis, and Sun Valley. These members included Firehawk (Brainerd), HTS, Inc., Rogers Helicopters, Inc., Croman Corporation, Aris Helicopters, Southern Helicopters, Armstrong Helicopters, Classic Helicopters, Hillcrest Aircraft Corporation, Northwest Helicopters, Carson Helicopters, Inc., Erickson Air-Crane, and Columbia Helicopters. Zuccaro had a unique opportunity to speak with mechanics and pilots in the field to obtain a better perspective of the field duties HAI members perform.

“I was extremely impressed with the professionalism, expertise, and ease with which these individuals, both helicopter industry and government staff, carry out their tasks,” said Zuccaro. “The dedication to the mission and unified purpose were evident among those we observed and spoke with.”

The role of helicopters for firefighting missions across the nation will take center stage at HELI-EXPO 2008. The HAI Government Contracting Committee (GCC) meeting is open to all interested HAI members, and is a widely attended event scheduled for Monday February 25 at 10:00 a.m. The Department of Interior and the U.S. Forest Service will also conduct a Q&A vendor seminar, immediately following this meeting. As we go to press, HAI is finalizing plans for an HAI Firefighting Forum in Boise, Idaho. Safety in the field, maintenance issues, and developing strong lines of communication between industry and government will be the number one focus.

Amanda N. Gustafson is Public Relations Assistant for HAI.