

Northwest Airlines Installs A-C Fire Pumps for New Hangar

With expensive aircraft parked in a new repair hangar at Wayne County Airport in Detroit, Michigan, there was a need for a reliable and powerful fire protection system. ITT Industries' A-C Custom Pump unit provided a turnkey fire protection system to protect this high-value installation.

When Wayne County and Northwest Airlines agreed on a new 74-gate, \$1.2 billion mid-field terminal at Wayne County's Detroit Metropolitan Airport (DTW), the airline was given the green light for additional improvements to its existing facilities at the airport complex.

One of these infrastructure improvements for Northwest Airlines included the construction of a new hangar to house repair and maintenance operations for some of its aircraft. This extremely large building can park two DC-10's and one DC-9 jets together under the same roof. The fire hazards in an aircraft hangar such as this stem primarily from the highly flammable jet fuel. Considering the cost of the hangar building as well as modern jet aircraft, a fire in this structure would result in a huge property loss. Therefore, the fire protection system was a critical consideration in the construction of this facility.

Because of the a number of construction issues, it was not determined until late in construction cycle that Northwest Airlines would not be able to tap into the municipal water available to supply the fire protection needs of the hangar.



Pictured here are the water storage tanks used in the fire protection system for the new aircraft repair hangar at Wayne County Airport.



Each of the skid-mounted pumps from A-C Custom Pump are designed to deliver fire-quenching water at 5,000 gallons per minute.

Additionally, there were extreme time pressures to open the hangar and begin operations there. According to Hans Stewart of A-C Fire Pump Systems, "Northwest Airlines was really under the gun. They were planning on bringing in water from the city main, which would have precluded the need for fire pumps. However, they found out late in the project that they could not get city water."

To provide fire protection to this hangar, Northwest Airlines turned to Underwood Fire Equipment of Novi, Michigan. A representative for A-C Fire Pump Systems, Underwood Fire Equipment provides fire pump systems to about 80% of the market in the State of Michigan.

Underwood subsequently contacted ITT Industries' A-C Fire Pump Systems unit to deliver very large, turnkey fire pump system that would supply the required water - in a very short time schedule. To complicate matters, the pump house would need to be located approximately one-quarter mile from the hangar, connected by an underground pipe. According to Darryl Underwood, president of Underwood Fire Equipment, "It is very unusual to go that far." To provide

the required water supply, the pump house is connected to two holding tanks containing one million gallons of water. The suction header on building was 43" in diameter for the supply. The discharge was 30".

According to Stewart, "The normal manufacturing delivery cycle for this type of fire pump (pump only), is about 14 weeks." Underwood notes that, "To give you an idea of the tight time crunch on this job, the order for these pumps were delivered to the factory in mid-February. The pumps were delivered by the end of April - approximately 10 weeks - in skid form complete with engines and piping, ready to run."

Each of the six skid-mounted pumps is designed to deliver 5,000 GPM at 140 PSI each at the design point and run out to a maximum capacity of 7,500 GPM each. The motors driving the pumps are Caterpillar Diesel motors, rated at 800 hp at 1,800 rpm. All of the skid-mounted systems went into a single pump house. In addition to the skid-mounted pumping systems, A-C Fire Pump Systems also supplied valves and a heating package for the holding tanks through ITT Industries' Bell & Gossett unit.

After the fire pumps were installed the fire protection system underwent a full-blown test on June 10. According to Underwood, "It looked like a rainstorm." Looking back on the extremely tight time schedule, Underwood notes that, "All of the people we worked with at A-C really went to the mat for us".