

Thermal imaging allows for accurate and time-saving inspections of electrical cabinets inside aircraft cockpits.

Aircraft cockpit inspections, both pre-flight and post-flight, consist of a wide range of control routines that need to ensure the safety of its passengers during a flight. Next to that, it is essential that inspections are carried out as efficiently as possible, because every idle hour that is keeping an aircraft waiting on the ground is time and money lost. In that respect, Dutch technical inspection specialist Thermografisch & Adviesbureau Uden BV found a way to significantly speed up electrical inspections inside the cockpit, while at the same time guaranteeing accuracy and reliability. The secret: thermal imaging technology from FLIR Systems.

Thermografisch & Adviesbureau Uden BV is an experienced agency which is specialized in independent inspections and supplies recommendations to the industrial and construction markets. The company's expertise ranges from building inspections, over climate and mechanical installation inspections, to process control and inspection of electronic components. For all of these applications, Thermografisch & Adviesbureau Uden BV heavily relies on thermography.

"We had a long history of performing inspections of electrical cabinets for industrial applications by means of thermal imaging cameras, but we had never applied

this technology for the inspection of cockpit electronics," comments Mr. Ralf Grispen, owner of Thermografisch & Adviesbureau Uden BV. In fact, that particular question came directly from Thermografisch & Adviesbureau Uden BV's long-term customer Star Air, a Danish cargo airline, part of the A.P.Moller-Maersk Group, specialized in providing highly reliable cargo lift capacity.

Thermal imaging for cockpit inspections

"Star Air knew that we could successfully perform inspections of water ingress in composite materials of airplanes by means of thermal imaging cameras," comments Mr. Grispen. "But technicians of the airline company wanted to know if we could use



The high-res P640 thermal and visual camera is a smart choice for thermal imaging surveys.

the same technology for the inspections of wiring and cabling inside the cockpit as well. We decided to give that a try."

Mr. Grispen and Mr. Rob Huting, co-owner of the company, traveled to Cologne Airport, where Star Air's aircraft fleet is located. Technicians of the airline company made the cockpit of a Boeing 767-200 ready for electrical inspections, and the Thermografisch & Adviesbureau Uden BV team started its routines. The inspection job was a success: the thermal imaging cameras showed the temperature differences of the cockpit's electrical cabinets in the greatest detail and the team was indeed able to detect an initial defect in a resistor.



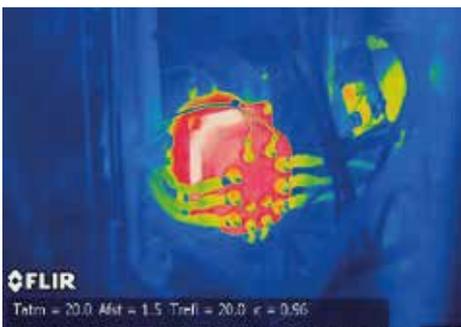
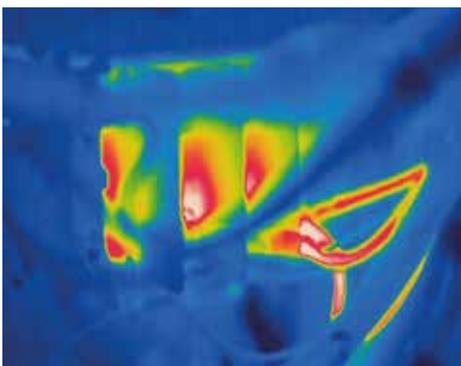


The FLIR P640 allows us to view the smallest electrical parts and the smallest temperature differences.

In addition, the test resulted in a contract award to Thermografisch & Adviesbureau Uden BV by Star Air for the maintenance inspection of 11 Boeing 767-200 freight aircraft.

Time-saving inspections

"Faulty resistors heat up, and that's exactly the reason why thermal imaging technology can easily detect such defects, even very small problems in an early phase," comments Mr. Grispen. "In the case of Star Air, this technology proved to be a perfect fit for preventive maintenance and electrical inspections inside the cockpit in general. Especially with older aircraft, which are subject to wear, it is critical to inspect connections and fittings on a regular basis. With thermal imaging cameras from FLIR, we can get this job done in a fast, accurate and cost-effective way."



The FLIR thermal imaging camera was able to detect a temperature increase in the electrical wiring and components.

Cockpit inspections with thermal imaging technology are very accurate and time-saving. The main advantage of thermal imaging is that you can locate electrical problems very quickly and accurately. With thermal imaging you are able to immediately see which component is causing the problem.

"We encourage the use of thermal imaging for cockpit inspections, because it gives us an accurate view of the condition our aircraft is in," comments Mr. Carsten Holm, Vice president technical at Star Air. "As a dedicated provider of quality air cargo services, Star Air does everything in its power to guarantee that all equipment is in perfect state and that cargo and crew can enjoy a safe flight. We are glad that thermal imaging technology from FLIR Systems helps us achieve that."

Seeing the smallest details

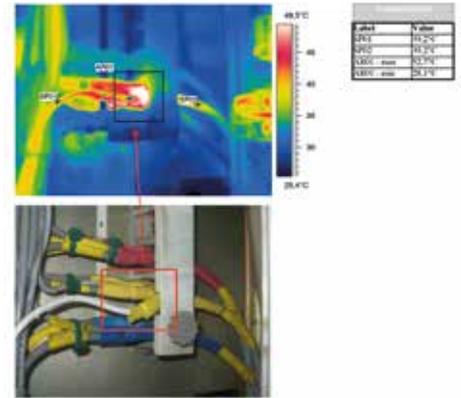
Thermografisch & Adviesbureau Uden BV is using the FLIR P640 thermal imaging camera, a high-resolution thermal and visual camera that has a host of advanced features, which makes it a smart choice for thermal imaging surveys.

"The camera provides us with a very high resolution, which enables us to view the smallest electrical parts as well as the smallest temperature differences," comments Mr. Grispen. "An additional benefit of the FLIR P640's large color LCD is that you can simultaneously share your images with your customer or your colleagues. For us, this is a feature that cannot be underestimated, because it allows us to reassure our customers and show them that we do a good job."

"Also the possibility to make short movies with the FLIR P640 makes this camera a very handy tool to have. And finally, I think the camera finds a very good balance between robustness and ergonomics," Mr. Grispen continues.

FLIR P640 thermal imaging camera

The FLIR P640 camera is easy to operate and delivers accurate temperature measurements at safe distances. The FLIR P640 provides professional users, including infrared consultants and professional thermographers, with a unique competitive advantage.



The FLIR reporting software delivers a perfectly documented and detailed report of our findings to the technical staff that will do the actual repairs.

The P640 presents more pixels, which means greater temperature measurement accuracy, particularly for small objects. To the professional thermographer, this means clear, practical benefits – and a strong competitive advantage. With the P640, you can now resolve smaller objects from further away and still get accurate temperature measurements.

Extensive reporting capabilities

"The reporting software that comes with the FLIR P640 is very easy to use and allows us to deliver a perfectly documented and detailed report of our findings to the technical staff that will do the actual repairs. We regularly receive the latest updates from the FLIR software so we can enjoy extra features."

FLIR certified

Thermografisch & Adviesbureau Uden BV also makes use of the services of the FLIR Infrared Training Center (ITC). "We have a team of three people that are fully FLIR ITC certified," comments Mr. Grispen. "We regularly attend trainings organized by FLIR Systems, so we are always up to date with the latest developments of the company's product portfolio. As with all FLIR after-sales services, we are very pleased with these trainings, because they help us apply thermal imaging technology in real life applications."

For more information about thermal imaging cameras or about this application, please contact:

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