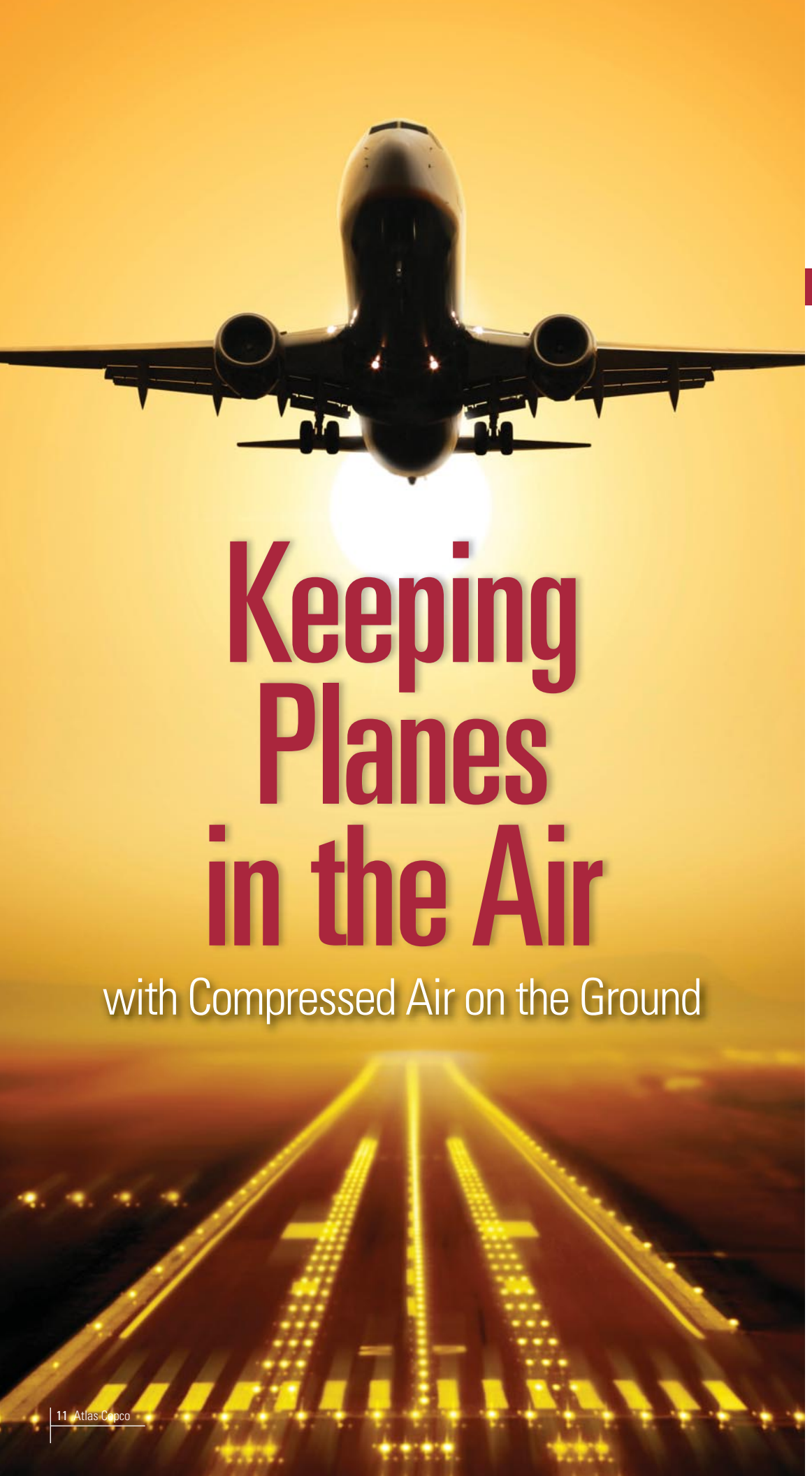


Keeping Planes in the Air

with Compressed Air on the Ground

Did You Know?

10 years ago...the top grossing film was *Finding Nemo* closely followed by *Return of the King*.

The manufacture, maintenance and repair of today's jet aircraft involves a global network of suppliers applying some of the world's most advanced technologies to keep commercial airliners, business jets and military aircraft flying. A recognized leader in the field is Aviation Technical Services, Inc., (ATS) of Everett, Washington.

ATS is one of the largest third-party aircraft maintenance and repair stations in North America. ATS provides maintenance, repair and overhaul (MRO) services on transport category aircraft, as well as aircraft components for commercial customers and tooling used to repair commercial aircraft. The company began operations in 1970 and today employs more than 500 technicians, 66% of whom are licensed and have an average 13 years of experience.

"We do much more than just aircraft repairs," says Mark Saretsky, Productivity Engineer for ATS. "At one of our sites we do repairs on commercial airliner interiors, and at another we repair hydraulic, mechanical, electrical and structural aircraft components through various machining, milling, sandblasting and painting operations. Altogether we do work on about 3,600 different part numbers for OEMs and airlines in North America, Europe and Asia."

ATS has opened new facilities in Everett encompassing nearly one million square feet across six facilities where more than 450 wide and narrow body aircraft are serviced each year. The Component facility comprises 56,000 square feet of custom-built interior space.

"Previous to moving into our new facility we worked out of a 600,000 square foot facility with about 90,000 square feet devoted to component repairs," according to Saretsky. "That facility has been fully dedicated to Boeing. Our new facility has a smaller production space but it was built to our exact needs so now we have all the space we require and less space to maintain. We are big on efficiency."

Saretsky explains that energy efficiency is important in all phases of the operation, with many energy saving features built into the new facilities. "We work to be as efficient as possible. For example, every light in the facility is on a motion sensor. That cuts energy consumption that's not required as well as the need to send someone over to turn off a light switch."

The plant compressed air system is another example of efficient production. "We incorporated Variable Speed Drive compressors into our system for the energy efficiency, especially because of the way that our shifts work," Saretsky explains. "There

Commitment asked Laura Mork, Facilities Manager with ATS, to share her insights into the benefits of sustainability efforts at ATS.

Commitment: Describe the influence of environmental stewardship on decision making at ATS. How does "green thinking" impact your bottom line?

Laura Mork: Corporate responsibility and involvement in the community are elements in any good company. Many energy conservation measures are not only good for the community, but also provide a good return on investment. ATS consistently looks for opportunities to reduce energy, recycle, reduce hazardous waste generation, etc. In our annual Earth Day events, we use the opportunity to educate our employees about what we have done to reduce energy usage, a conversation which includes efficient air compressors. We also use this opportunity to discuss the wasted energy and costs associated with compressed air leaks, encouraging our staff to replace leaking air hoses, and report other air leaks.

Commitment: Given that compressed air is used in 90% of your production operations, describe the importance to ATS of compressed air quality, compressor energy efficiency and system reliability Have Atlas Copco compressors met your expectation?

Laura Mork: We first purchased Atlas Copco compressors utilizing rebate monies provided by the local utility to reduce energy consumption in 2002. At that time, there were significant concerns throughout the entire ATS organization regarding all of these issues. Many people were concerned that our compressed air quality, quantity, and system reliability would be compromised by the change out of the compressed air plants to much more energy efficient models. It took me months of internal wheedling to obtain permission to upgrade the compressed air plants within the three separate aircraft hangars. A third party consultant was instrumental in providing further supporting evidence of the change. I even kept one of the old compressors alive in one of the plants, due to the perceived risks involved. I would not have been successful without the utility incentive funding.

Approximately three months after the conversion, I was asked why it took me so long to get the upgrade! Not only were the power bills lower, but the compressed air quality and reliability were also improved. Prior to 2002, I used to have to give regular reports regarding the compressed air systems. After that, if fell off the agenda; management no longer needed to be concerned that schedules would be impacted by compressed air.

With this historical background, it made it easy for ATS to decide what to do when we moved into a new building.

Commitment: Now that you have an AIRnet piping system in place, what do you think are its most significant benefits for ATS? Would you recommend AIRnet to others?

Laura Mork: The AIRnet piping installed very quickly. My staff has been able to easily make the minor modifications that are necessary when you move into a new building and find out that you need to make minor adjustments. I would definitely recommend AIRnet piping to others.

"We incorporated Variable Speed Drive compressors into our system for the energy efficiency, especially because of the way that our shifts work," Saretsky explains. "There is typically much more demand for air during the day shift than the evening shift."

is typically much more demand for air during the day shift than the evening shift. VSD compressors let us make more air during peak time and much less air during the night shift, and produce air efficiently in either case. In the evening we do much the same kind work as during the day, but we do less of it. Our compressors are configured to make the amount of air we need as we need it."

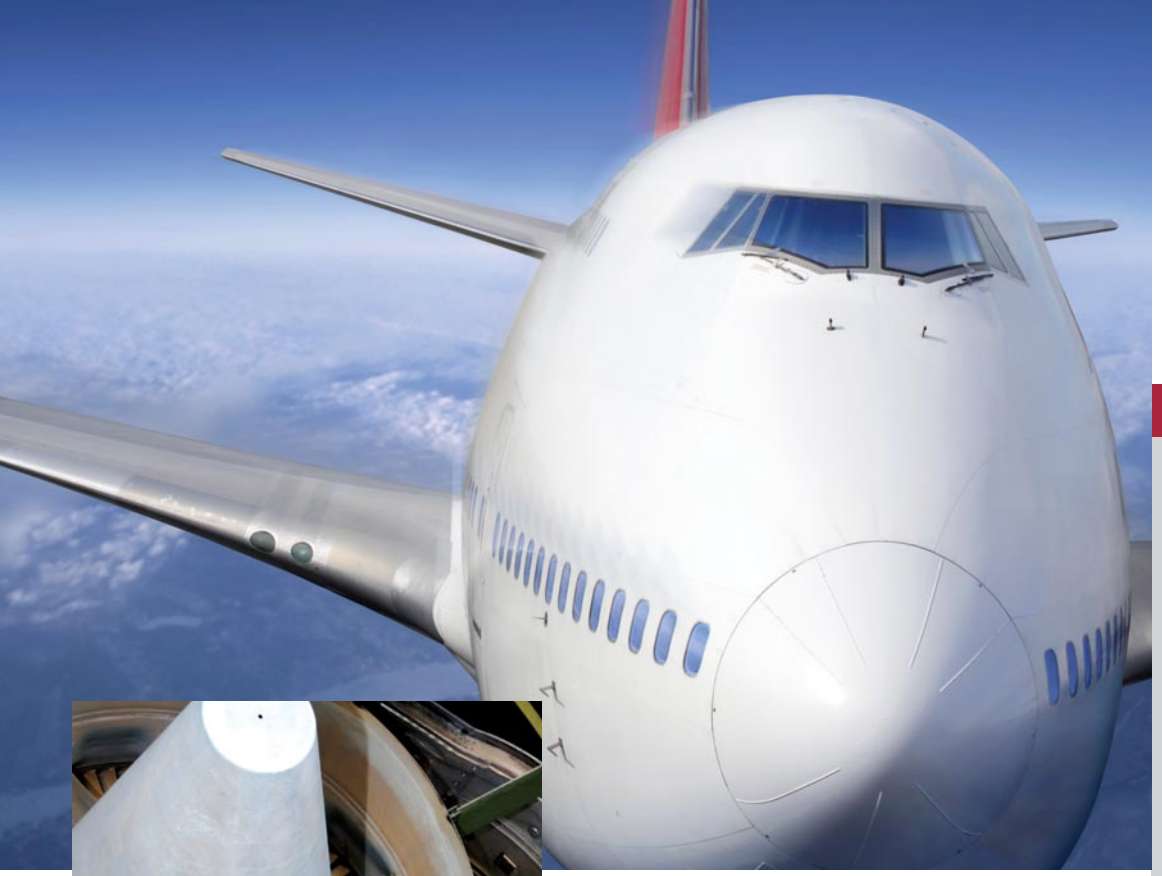
Compressed air is used in applications throughout ATS. "We're using compressed air in about 90% of our operations," according to Rich Torgeson, Maintenance Supervisor for ATS. "Our paint booths, sand blasting, mills, drills, rivet guns and grinders all use compressed air directly. Our structure shop uses air for vacuum bagging of parts for composite repairs. We also have machinery in which air is not the primary power source but is used to do things like open and close mechanisms."

Torgenson explains one of his company's most innovative uses for compressed air. "We use pneumatic sources for hot bond equipment that assists in performing composite repairs. Specifically, we use the air source to create a vacuum. A machine monitors the vacuum and temperature of the repair area during the repair process, which can take five or six hours. If you lose vacuum while the repair is in process, quality control requires that you tear down the whole repair and start over. That wastes time and money. Basically, the system can't go down at all so the air compressor has to be absolutely reliable."

All of the air compressors at ATS are from Atlas Copco. In fact ATS now owns five different operational sites at two facilities with 11 Atlas Copco compressors in all. For the new facility in Everett, ATS acquired all new Atlas Copco compressed air equipment, including GA30VSD, GA37VSD, GA22, GA7 and two GA11VSD.

"We located our compressors behind the facility, outside in a covered area," says Torgeson. "Outside works in Seattle where it rarely goes below freezing or over 90. Locating them outside was primarily a space saving decision to conserve interior floor space for other systems. It helps with sound levels, too, although these are quiet compressors."

To route the air from the compressor to workstations around the facility, ATS used more than 2,000 feet of AIRnet piping. "We are using AIRnet because of the efficiency gains we get compared to black iron or copper pipe," says Saretsky. "Another driver in our choice of AIRnet is the new style of quick disconnects, which are very efficient and not offered on competing products. We have a facilities team that can easily do



maintenance on the system, and adding a new air drop involves a hole and a fitting instead of cutting and welding copper or iron pipe. That saves us time and money."

Boeing operates numerous facilities in greater Seattle, including the facility previously occupied by ATS. There are five Atlas Copco compressors at that location which ATS decided to leave because they are a good match for Boeing's needs. "It was smarter to just leave them there and buy new compressors for our new facility," says Saretsky. "The main driver in our decision to buy Atlas Copco again is the reliability of their equipment. We had Atlas Copco equipment for six years and we've been very satisfied. We are also standardizing our facilities, and having all Atlas Copco compressors make things easier for maintenance. We were fully moved into our new facility in November 2011 and so far everything is working great, as we have come to expect."

The high quality work ATS performs on jet aircraft and related parts requires the high quality air that Atlas Copco compressors produce," according to John Kuipers, Service Sales Manager with Atlas Copco Compressors LLC in Kent, Washington. "The reliability we are known for is ideal for acompany whose customers rely on them no matter what. One way ATS has ensured that reliability is by contracting with Atlas Copco for Total Responsibility Service on all of their compressors. We take care of everything related to maintenance and service of the compressed air system. It's one less thing to deal with, one more way to get peace of mind."

Saretsky says that making investments in efficiency pays dividends for ATS by reducing costs, improving reliability and increasing customer satisfaction. "When you do things efficiently it's good for customers, it's better for environment and it doesn't cost as much. That's good all around."

"We're using compressed air in about 90% of our operations," according to Rich Torgeson, Maintenance Supervisor for ATS. "Our paint booths, sand blasting, mills, drills, rivet guns and grinders all use compressed air directly."

ATS Goes With AIRnet Piping

"ATS has the biggest AIRnet installation we have ever done in the Pacific Northwest," says John Kuipers, Service Sales Manager for Atlas Copco Compressors LLC in Kent, WA. "There is close to 2000 feet of AIRnet pipe throughout the facility. AIRnet components were installed in multiple rooms for paint booths and work stations and for connecting to end user equipment. The blue AIRnet pipe looks really nice aesthetically, too."

Kuipers says that ATS installed more connections – and a wider range of them – than if they'd have used black pipe. "The modular design of AIRnet is easy to adapt to any application," he explains, "and you absolutely can install it yourself. It doesn't take a mechanical contractor and no hot work permits are needed to install or adapt the piping system. That saves time, personnel and money. AIRnet has every fitting you'll need for your installation, and the high quality, corrosion-free components are backed by a 10-year warranty."

In addition to being easy to install, AIRnet is easy to take down and reuse somewhere else. "Given the variable nature of the aviation business, ATS has to be flexible to take advantage of new opportunities," says Kuipers. "They installed an AIRnet system in their Interiors facility, and when that facility was no longer needed they were able to recover the pipe and reuse it in another facility to preserve their investment in AIRnet. Being able to take it out and use it elsewhere is the ultimate in modularity."

ATS Services:

- Airframe Maintenance & Overhaul
- Component Repair
- Paint Programs
- Defense Programs
- Business Jet Services
- Comprehensive Engineering Support

To learn more, please visit:

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