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Alcoa trumpets tech advances for aircraft makers

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By Steve James NEW YORK | Thu Jun 9, 2011 12:19am EDT

(Reuters) - Aluminum producer Alcoa Inc (AA.N) has developed a new generation of alloys and technologies it says can lower the weight of airliners by up to 10 percent and improve fuel efficiency even more.

"The alloys are mostly new and revolutionary for the industry," said Eric Roegner, president of Alcoa's Forgings and Extrusions business.

the same strength and stiffness.

"Weight savings depend on where you put them on the plane, but can give you a 12 percent improvement in fuel efficiency." Roegner told Reuters in a recent interview.

Alcoa's Forgings and Extrusions business serves the structures market, including the company's aerospace sector, which has about \$3 billion in annual revenues.

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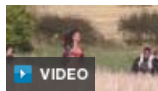
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High oil prices have prompted aircraft makers to look for lighter metals and composites while retaining strength and durability. Alcoa was in the forefront of developing a first generation of lighter materials, but the new ones, to be unveiled at the Paris Air Show this month, go way beyond that, the company says.

Alcoa's new aluminum- or aluminum-lithium based alloys and advanced structural technologies, use sheet, plate, forgings and hard alloy extrusion products across aircraft structures, including airplane wings and fuselage elements.

The company says aircraft made from these materials can weigh up to 10 percent less than composite-intensive ones and allow for a 12 percent increase in fuel efficiency, on top of the 15 percent already gained from more efficient jet engines.

The new alloys and technology can also lower the cost of manufacturing and repairs by up to 30 percent.

The aerospace business is rebounding from the recession and demand for aluminum and light alloys is growing as Asia and the Middle East build up fleets and airlines in North America and Europe to replace aging aircraft, Roegner said.

"Demand is very robust and should remain so for the decade to come," he added.

Boeing Co ([BA.N](#)) and Europe's Airbus ([EAD.PA](#)) have backlogs of five to six years on their single-aisle planes, the Boeing 737 and the A320, he said.

Boeing spokesman Larry Wilson said no decisions have been made on materials for future models.

"We regularly evaluate all material advancements -- aluminum alloys, composite systems and others, Wilson said. "But we are delighted to hear about the investments and advances Alcoa and other raw-material suppliers are making."

Some of the advanced aluminum alloys developed for aerospace can also be used in the energy industry, especially in gas drilling pipes, Roegner said. They weigh half as much as steel pipes and use less energy when drilling.

Along with new alloys, Alcoa is using advanced structural techniques.

"It's new ways to design structures that get the maximum properties out of the metal," Roegner said.

For example, he said huge units called "Very Large Monolithic Forgings" used to be made from aluminum plate, with extrusions and fasteners holding them together. Now, the units measuring about 20 feet by 3 feet (1 meter) and mounted where wings are attached to the fuselage, can be made in one piece.

Roegner said an added incentive for Boeing and Airbus was that the new alloys and technologies fit into existing infrastructures.

"There are huge cost savings and they don't have to shut down old facilities," he said.

The new alloys and technologies have been developed by Alcoa over the last 10 years and will be manufactured at Davenport, Iowa; Lafayette, Indiana; Cleveland; Hanover, [Germany](#) and Kitts Green, England.

(Reporting by Steve James; editing by [Andre Grenon](#))

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