



 [Print](#) |  [Save](#) |  [Email](#)

Aerospace aluminum's skyrocketing: the aerospace industry is flying high and bringing its metals suppliers along for the ride.(AEROSPACE ALUMINUM)

Metal Center News Nov , 2005

WITH STRENGTH ON ALL AEROSPACE fronts--commercial and military aircraft alike--demand for lightweight aluminum and other specialty alloys should remain robust through 2007 and perhaps well beyond. The main concern for aircraft manufacturers is how hard they have to scramble to get enough material for their production lines, and how high a price they must pay.

Metals suppliers also are scrambling to meet the needs of their customers. In some cases, mills are even investing in new production capacity. Despite these efforts, supplies of aerospace metals, including aluminum, titanium and nickel-based superalloys, are expected to remain very tight for at least the next 12 to 18 months.

"These are the good times," says David Napier, manager of the economic data service at the Aerospace Industries Association of America in Arlington, Va., who asserts that the industry is at the beginning of a major upturn. "Once the aircraft cycle starts, it tends to go on for eight to 10 years, and I think this one will be prolonged," agrees industry analyst Lloyd O'Carroll, vice president and chief economist with BB&T Capital Markets in Richmond, Va.

It is very unusual that both commercial and military aerospace markets spike simultaneously, says Richard Aboulafia, president of the Teal Group in Fairfax, Va. Each is being propelled by a very different set of drivers--defense by world events such as the Iraq and Afghanistan wars, and commercial by strong passenger and freight traffic.

"Last year was the first year that passenger travel growth exceeded the previous record levels set in 2000," completing a recovery from the Sept. 11, 2001, terrorist attacks, says Peter Conte, spokesman for Boeing Commercial Airplane in Seattle.

The increase in passenger miles continues to be significant, adds John Walsh, president of Walsh Aviation, Annapolis, Md. Air travel increased 12 percent in 2004, another 7 percent this year, and is likely to maintain that trend.

Passenger demand and enthusiasm for new aircraft designs--such as the Boeing 787 Dreamliner and the Airbus A380 and A350--have kept commercial airplane orders and build rates at surprising levels, especially in light of the severe financial problems faced by many U.S. airlines. It is primarily air carriers outside of the United States that have responded to the increased passenger travels by adding to their fleets, opening new routes and increasing the frequency of flights, notes Boeing's Conte.

Airbus reported 417 orders for new aircraft in just the first nine months of this year, a 30 percent increase over the 320 orders it received in full-year 2004. Boeing reported an even more impressive increase, with 647 orders through mid-October, more than double its 277 total orders last year.

Foreign carriers have the means to purchase new aircraft, Aboulafia says. Worldwide, airlines are expected to lose \$8 billion this year. Those in the United States alone are projected to lose \$9 billion, which means airlines in the rest of the world will actually earn \$1 billion.

And it isn't as if U.S. airlines aren't buying any planes. While so-called legacy airlines are facing bankruptcy reorganizations, new low-cost carriers such as Southwest Airlines and its imitators are doing very well financially, and investing in the future. "We are seeing a whole new phenomenon," says Napier. "It used to be that you started a new airline with used planes, but what seems to

be happening is that the new airlines are buying new planes."

In addition, there has been a lot of growth among U.S. leasing companies. The largest fleet owner in North America is GE Capital, which makes \$1 million a day leasing planes to various airlines, notes Robert Mraz, vice president of sales and marketing for TW Metals Inc. in Exton, Pa.

Don't write off the legacy airlines yet, adds Keith Harvey, vice president of sales and marketing for aerospace and distribution at Kaiser Aluminum, Foothill Ranch, Calif. "At some point, the legacy carriers will come back into the market," he says, though perhaps not until some weaker players shake out of the competition. "They need to figure out a way to carry more people at a lower cost. When they reach that point, they will need to replace their fleet with newer, more efficient planes."

U.S. carriers may replace old fleets even if there is no shakeout, says Simon Pickup, business operations director for Airbus North America in Herndon, Va.

The North American fleet is the oldest in the world on average, so it may make sense to replace the oldest equipment with newer planes that are far more fuel-efficient. New planes could actually lower operational costs for commercial airlines, Napier agrees.

Meanwhile, demand for military aircraft is expected to remain strong at least through 2008. "We've seen pretty robust orders in the last several years, with military spending up," says Rod Hogan, procurement manager for metallic raw material at Lockheed Martin Aeronautics in Fort Worth, Texas.

Linda Zimmerman, Lockheed Martin director of procurement for airframe commodities, reports that the company is producing about six F-16s a month, and should be seeing further international demand for that aircraft soon. Also in high demand are its F/A-22, C-130J and its F-35 Joint Strike Fighter. "It has been pretty steady, and we are looking for it to remain steady for the foreseeable future," she added, with new programs ramping up as others wind down.

Military aerospace may eventually feel the pinch of defense budget cuts as the federal government seeks ways to continue funding military actions in Iraq and Afghanistan, as well as hurricane relief here at home. Jeff Luckasavage, vice president of sales and marketing for TMX Aerospace, Southfield, Mich., says demands on the federal budget are likely to prompt debate over whether the U.S. really needs, for example, a new Joint Strike Fighter aircraft.

With the ongoing concern about terrorism, however, defense activity remains a priority. All defense programs are being funded so far, notes Bill Sales, senior vice president for nonferrous operations at Reliance Steel & Aluminum Co. in Los Angeles.

Business jets recovering

Certain smaller aerospace sectors, including business jets and an emerging market for "very light jets" or VLJs, are gaining strength. While business jet demand dipped after the last market peak, Aboulafia says, it has recovered nicely in the last year due to general economic growth, more fractional ownership and a desire among flyers to avoid large air traffic hubs.

Eclipse Aviation Corp., Albuquerque, N.M., sees a nascent market for "air taxis" and plans to produce in excess of 6,000 six- to eight-passenger VLJs in the next 10 years to meet that need. Aboulafia is skeptical that Eclipse, which is supposed to deliver its first plane next year, can achieve its claims. "There is a market for some light jets, but not at the sales level they are talking about" he says. Other participants in the VLJ market include Cessna and Embraer.

Prospects for regional jets are mixed. Demand has nose-dived for regional jets that carry fewer than 50 passengers, Aboulafia says, but is still strong for the 70- to 100-seater market.

Can metals meet demand?

All of this demand for aircraft production, as well as pull from some non-aerospace markets, is putting a severe strain on the supply of certain grades of aluminum, as well as titanium and nickel-based superalloys. In particular, heat-treated aluminum plate is in extreme short supply, exacerbated by its use in certain non-aerospace military applications such as the armoring of troop carriers

in Iraq.

New aircraft has been designed to use more plate and less sheet to better handle the stresses of takeoffs and landings, says Jerry Bashir, president of Falcon Aerospace in Davie, Fla. Planes used to be composed of about half sheet and half plate, but today the ratio is 80:20 in favor of plate.

In light of all of these factors, heat-treated aluminum plate is on allocation in most cases, with mill lead times of about 24 weeks--30 to 40 percent longer than normal deliveries, suppliers report.

"It is a day-to-day struggle to make sure we have ample supply to meet our customer needs," says Sales at Reliance. "Everyone is wrestling to make sure they have enough plate. I don't think it is affecting build rates, at least not yet."

While aluminum producers have been working to crank out as much plate as they can, their "de-bottlenecking" efforts haven't really solved the problem, says O'Carroll. "We should see some light at the end of the tunnel when Alcoa brings its Russia plate capacity onstream," notes Bashir.

Alcoa is not only looking to ramp up in Russia, but to increase its overall aerospace heat-treated sheet and plate production by 50 percent. "It won't be done quickly," admits Kevin Lowery, a spokesman for the company. "But part of the upgrades, which we originally announced in June, are already in place. The rest will be up and running within the next 15 months."

Also expected to relieve the pressure on plate is a reported move by Austria-based Amag Rolling, an aluminum sheet mill, to start producing plate up to three inches thick in mid-2006 or early 2007.

Supply has been extremely tight for titanium and nickel-based superalloys mainly used in aircraft engines. Titanium is also being used for structural applications in some aircraft today. Mill lead times for titanium are a year or longer, says John Odle, executive vice president of RMI Titanium Co., Niles, Ohio, although certain distributors offer shorter availability.

Substitution threatens aluminum

Titanium supplies are likely to get even tighter as aircraft designers choose titanium over aluminum for its higher strength-to-weight ratio and its compatibility with new high-tech composites, says Dan Greenfield, spokesman for Allegheny Technologies Inc. in Pittsburgh. "Starting with the Boeing 777, planes have been using a significant amount of titanium in their body," he says, and titanium should continue to cut into aluminum's material share as long as airframe producers continue to increase their use of composites.

Boeing is making a "quantum leap" into composites with its 787 model aircraft, says Dean Blakeney, general manager of Corns Aluminum Rolled Products USA, Schaumburg, Ill., using composite material for major portions of the aircraft's fuselage and wing. Boeing reports that the 787 will be 50 percent composite, 20 percent aluminum, 15 percent titanium, 10 percent steel and 5 percent other materials. By comparison, its 777 was 12 percent composites and 50 percent aluminum.

Airbus is also increasing its use of advanced materials, including composites, with its newly launched A350 aircraft. It will be 39 percent composite (including a composite wing), up from 22 percent in the A380. The new aircraft will also be 21 percent aluminum lithium, including in the fuselage. The company did not state the titanium content.

Harvey admits that airframe manufacturers are moving toward more composites for higher fuel efficiency and better range. "There lies the challenge for aluminum," he says. "We need to promote new, stronger, lighter alloys and increase the applications for existing alloys." Aluminum lithium, for example, offers Airbus some of the advantages they seek. "We need to convince airframe manufacturers that aluminum still has a lot of valuable characteristics."

If Boeing's 787 is as well received as it appears, it will only fuel the trend toward greater use of composites and titanium. In light of that, metals producers are looking to increase their titanium output. In July, Allegheny announced it was planning to expand its titanium production capabilities within the next 18 months by upgrading and restarting its idled titanium sponge facility, constructing

a third plasma arc melt cold hearth furnace, expanding its high-value plate products capacity by 25 percent and upgrading its cold-rolling assets.

While not as tight as titanium, nickel-based superalloys are also in short supply with lead times extending, says Sunil Widge, president of the forged bar and billet business unit of Carpenter Technology Corp., Wyomissing, Pa. Producers are gearing up to make sure all capacity is being fully utilized. Carpenter upped its superalloy capacity about five years ago, he adds.

Likewise, Allegheny announced early in September that it would be increasing its capacity to produce premium-melt nickel-based alloys, superalloys and specialty alloys by about 20 percent over the next 15 months.

With production increasing on all fronts, Napier says, "2006 is going to be a boom year, and that could extend to 2007."

Aluminum 2006: High Costs Temper Strong Demand

WHILE ANY INCREASE IN U.S. DEMAND FOR ALUMINUM IN 2005 HAS BEEN SLIGHT--other than in the red-hot aerospace market--next year is expected to be better, since so much of the excess inventory has been worked out of the system and a surge in demand is imminent as the hurricane-ravaged Gulf Coast begins to rebuild.

Burgeoning energy costs, especially for natural gas and electricity, however, could cripple profit margins and even constrain aluminum production levels. Coupled with tight alumina supplies, high energy costs could cause further cutbacks of smelter capacity in both the United States and Europe.

Last year, U.S. aluminum shipments were quite strong, up 8.6 percent over 2003. A big part of that gain was due to a buildup of inventories, both on the distributor and end-user level, says Lloyd O'Carroll, vice president and chief economist with BB&T Capital Markets, Richmond, Va. In 2005, as companies worked down those inventories, shipments grew at a much slower 2.5 percent rate.

At this point, inventories are back in balance, says Robert Mraz, vice president of sales and marketing for TW Metals Inc., Exton, Pa. "We are now in a stable supply-demand dynamic."

Though service center inventories are fairly lean right now, it may be awhile before they begin stocking up again. "Service centers are a little jumpy about what is going on with the U.S. economy. It doesn't feel as if we are experiencing a 3 to 3.5 percent growth in GDP," says Keith Harvey, vice president of sales and marketing for aerospace and distribution at Kaiser Aluminum, Foothill Ranch, Calif.

While worrying about being stuck with high-cost inventory is a fact of life for service centers, Mraz thinks many are overly pessimistic about 2006. "A lot of people think every silver lining has a cloud. We think the market dynamics are strong. While we are being cautious, the first thing is to be sure our customers have metal. We would rather err on the side of having enough inventories to meet their needs."

Bill Sales, senior vice president for nonferrous operations for Reliance Steel & Aluminum Co., Los Angeles, sees strong market demand for aluminum. Aerospace is leading the way, but non-aerospace business has also stabilized, he says.

Demand for aerospace-related aluminum--particularly heat-treated plate--is absolutely booming in every aerospace sector, he adds, including commercial, military, regional jet and business jet sectors.

"Heat-treated plate is extremely tight, and I am looking for it to continue to be tight [into 2007]," Sales says. Some non-aerospace defense applications, including the armoring of military Humvees, are consuming a lot of plate, leaving less for aerospace applications. "Plate has been and will continue to be on allocation," he adds.

Aluminum mills are working to increase their plate capacity, though experts say supplies are likely to remain tight for the next year or two as producers ramp up their new lines. In June, Pittsburgh-based Alcoa Inc., for example, announced expansions at its

facilities in Davenport, Iowa; Kitts Green, UK; Fusina, Italy; and Belaya Kalitva, Russia. The expansions will increase Alcoa's heat-treated plate production by 50 percent over the next 15 months.

Besides aerospace, the signs look positive for other aluminum applications, such as marine, chemical, petrochemical and construction--especially in the hurricane damaged markets in the South. "When the rebuilding of the Gulf Coast starts, it will be a major boom that will last awhile," says O'Carroll. Called the largest public works project ever in the United States, the hurricane reconstruction could take several years to complete and boost demand for everything from gutters to curtain walls. "It is very difficult to quantify, but it has a very large potential," he adds.

O'Carroll was expecting a strong building and construction market in 2006 even before the hurricanes, with the lackluster office and commercial sector picking up steam. "Nonresidential (construction) was poised for a big year (in 2006) even before Hurricane Katrina, as vacancy rates have been falling for more than a year now," he reported in his third-quarter Quarterly Aluminum Bulletin. "Vacancy rates are down to their lowest levels since 2002. With expected rebuilding after the hurricanes, aluminum shipments to the nonresidential construction market should be up sharply, more than 9 percent, in 2006."

Hurricane cleanup could also boost the supply of aluminum scrap, thus lowering prices, as was the case following storms in Florida last year, he says. Much of the scrap in and around New Orleans could be contaminated by floodwaters, however, and commingled with ferrous material due to all the damaged automobiles. Scrap of this type is more likely to be exported to China, where the labor cost to separate the alloys is lower, and they are more tolerant of contaminated material, O'Carroll notes.

U.S. demand for aluminum common alloy is a bit softer than a year ago, notes Reliance's Sales. One culprit is the automotive market, he says, where build rates, mainly among the Big Three, have declined.

O'Carroll predicts U.S. auto sales will end this year up about 1 percent, while North American vehicle production will be down 3 percent. "In 2006, we expect U.S. sales to be off slightly, as some of the would-be demand was pulled forward into 2005 by the aggressive [discount] incentives. We expect 2006 production of 15.3 million units, down about 1 percent."

Aluminum shipments to the auto sector will decline 0.4 percent this year, but increase by 5.2 percent in 2006 due to substitutions for steel. "We estimate aluminum content per vehicle should rise from 295 pounds [per vehicle] in 2004 to 320 pounds in 2006," he says. High gasoline prices give added incentive to replacement of steel parts with lighter weight aluminum versions.

Aluminum consumption by makers of heavy-duty trucks and truck trailers continues to be positive, at least through 2006, as carriers buy ahead of new EPA engine air-quality regulations set to take effect Jan. 1, 2007.

General engineering plate remains in tight supply, Sales says, though demand for this product has softened a bit, possibly due to the downturn in the semiconductor industry. Aluminum plate is used in the machinery used to make chips. "The market has weakened a little, partly because of some movement of [semiconductor] production capabilities to China and elsewhere in Asia. That has had some impact on the business we do in the United States."

Overall, however, the outlook for aluminum demand in 2006 is positive, experts report, though the outlook for profitability is not as rosy. "Energy costs are raping profits. They have really ballooned," says Kaiser's Harvey.

"The impact of the price of natural gas is huge," O'Carroll says. "The largest users are alumina refineries. It could be spring before all the drill rigs in the gulf are back in production. But even once that happens, I don't think natural gas will ever be back to \$5 or \$6, where it was a year ago (it is now trading at \$12 to \$13 per MMBTU). That leads to margin pressure and upward pressure on prices."

One industry source has stated that if natural gas prices remain at \$8 or higher, and if aluminum and alumina prices drop, 6 million to 8 million metric tons of alumina capacity could be shut down.

Increases in electricity prices could result in further shuttering of smelter capacity, O'Carroll adds. He reported in his recent quarterly bulletin that 1 million metric tons--almost 3 percent of global capacity--in Germany and the Netherlands alone is at risk. U.

S. smelters face the same power crunch. Alcoa recently told analysts that if it cannot obtain an economic power source for its Eastalco smelter in Maryland, it will have to curtail production.

Harvey says that 2005 will turn out to be a good year for the aluminum industry and that 2006 could be just as strong, "but there is a need to address costs, especially energy costs. We need to find a way to either pass them on or take part in conservation efforts to minimize their effect. We can only absorb these costs for so long."

COPYRIGHT 2005 Sackett Business Media

Copyright ©2007 Goliath. All rights reserved.

[Terms of Use](#)

[Privacy Statement](#)

[Help](#)

Best viewed with Microsoft Internet Explorer version 5.0 or higher.