

# MANUFACTURING & TECHNOLOGY NEWS

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## DOD To The U.S. Specialty Metals Industry: We Don't Need You

The health and well being of the U.S. specialty metals industry is not important to the Department of Defense, according to DOD's Strategic Materials Protection Board. Specialty metals are no different to DOD than materials such as plastic, rubber and glass, says the board in a report that is raising the ire of U.S. specialty metals industries. If the U.S. industry is not competitive, then there are plenty of reliable producers in Japan, Germany, France, Italy, Mexico, Brazil and Canada that can supply the U.S. military with most everything it needs, according to the Strategic Materials Protection Board.

The specialty metals industry has falsely made the claim that it is critical to national security, says the DOD

board. "Reliable access does not always necessitate a domestic source," says the Materials Board in the second sentence of its assessment of DOD's relationship with the industry. "In fact, the Department wants to take full advantage of the competitive benefits offered by access to the best global suppliers; and to promote consistency and fairness in dealing with its allies, all the while assuring that an adequate industrial base is maintained to support defense needs." As a result, DOD "sometimes may be dependent on reliable non-U.S. suppliers," which is just as good as being dependent on reliable U.S. suppliers.

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## Manufacturing Index Falls To Historic Low

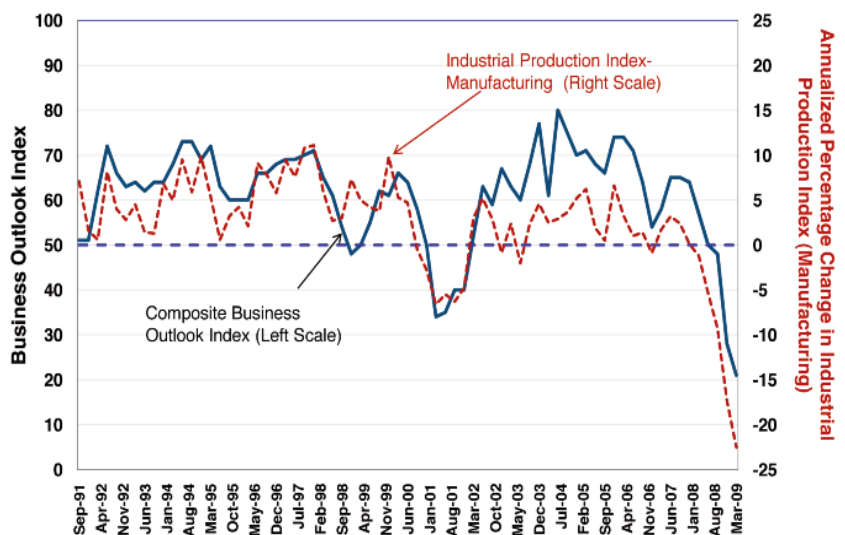
"The already battered manufacturing base appears headed for further decline," says the Manufacturers Alliance/MAPI in its quarterly survey and business outlook. The group's composite index that includes prospective shipments, exports, orders, investment and backlog has fallen to a new low, down from last quarter's 28 to its current level of 21. It is the lowest level since MAPI started its index in 1972.

Anything below 50 means that manufacturing is contracting, which

*(Continued on page eight)*

Composite Business Outlook, September 1991 - March 2009

*(Source: Manufacturers Alliance/MAPI)*



## *Economists: The Great Depression Is Upon Us*

“The world is currently undergoing an economic shock every bit as big as the Great Depression shock of 1929 – 1930,” according to two university research professors in an analysis of the economic data comparing the two eras. The 2008 – 2009 downturn is even worse than the Great Depression when measuring the decline of industrial output, world trade and stock valuations. “Globally, we are tracing or doing even worse than the Great Depression,” when comparing the figures, say **Barry Eichengreen**, professor of economics and political science at the University of California, Berkeley, and Kevin O’Rourke, professor of economics at Trinity College in Dublin, Ireland.

The current economic downturn is being called the “Great Recession,” but such nomenclature is misleading, say the two economists. The crisis has spread globally, even though there had been “earlier hopes for decoupling in Asia and Europe” from the American economy. “Increasingly, there is awareness that events have taken an even uglier turn outside the U.S. with even larger falls in manufacturing production, exports and equity prices.”

In the current crisis, industrial production has fallen as severely as it did in 1929, reflecting a far more “disturbing perspective” on the situation than is being portrayed by economists like Nobel Laureate Paul Krugman, write Eichengreen and O’Rourke on the Web site of the Center for Economic Policy Research (**VoxEU.org**).

The stock market is falling even faster than it did in 1929, suggesting “that the current crash is no more serious than that of 1929 – 1930,” write the two economists.

Global trade is also falling at a much faster rate now than in 1929. “This is highly alarming given the prominence attached in the historical literature to trade destruction as a factor compounding the Great Depression,” write Eichengreen and O’Rourke. “It is a Depression alright,” they conclude. “To sum up, globally we are tracking or doing even worse than the Great Depression. Looking just at the U.S. leads one to overlook how alarming the current situation is even in comparison with 1929....The ‘Great Recession’ label may turn out to be too optimistic. This is a Depression-sized event.”

## **Census Bureau Gets Ready To Throw Money Away**

The Census Bureau is in the economic recovery game. The agency is getting ready to shovel \$1 billion out the door in an effort to help revive the U.S. economy. The agency will “invest” \$250 million in an “outreach” program that hires thousands of people to count Americans living in “minority communities and hard-to-reach populations.” The remaining \$750 million will be spent on “reducing operational and programmatic risks” of the 2010 census operation “at a critical stage of the census process.”

Of that total, \$100 million will be spent on a “public outreach” program to “help raise awareness of and educate residents about the 2010 Census and the importance of their response.” The agency will spend another \$250 million trying to count people who are living in “dormitories, prisons, nursing homes and other group living situations.” It will spend \$108 million trying to count people living in communities that don’t have street names or street numbers or mailing addresses, like Indian reservations, rural Spanish-speaking “colonias” and resort areas “with high concentrations of seasonally vacant living quarters,” it says. It will spend \$388 million on a “Local Census Office staffing operation” aimed at recruiting, hiring, training and managing field staff to count Americans.

## **DOE’s Stimulus Will Be Spent On Its Labs**

The Department of Energy is spending its portion of the \$787-billion federal government’s economic “stimulus” by parking \$1.2 billion in the national laboratories. The DOE will spend \$150 million to finish building the National Synchrotron Light Source at Brookhaven National Lab; \$123 million for construction and modernization of the Oak Ridge, Brookhaven and Lawrence Berkeley labs; \$65 million to finish construction of the Continuous Electron Beam Accelerator Facility at the Thomas Watson facility in Newport News, Va.; and \$330 million for scientific user facilities, such as the Spallation Neutron Source at Oak Ridge National Lab, Nanoscale Science Research Centers located at five national laboratories and the Environmental Molecular Sciences Laboratory at Pacific Northwest National Lab.

It will spend another \$125 million on “needed infrastructure improvements across nine DOE national labs” including Ames, Argonne, Brookhaven, Fermi, Lawrence Berkeley, Oak Ridge, Pacific Northwest, Stanford Linear Accelerator and the Thomas Jefferson facility. DOE will spend an additional \$277 million for a new “Energy Frontiers Research Centers” program that will make competitive awards to universities and DOE national laboratories. The agency has approved \$90 million to support graduate students, postdocs and Ph.D. scientists and \$69 million to create a prototype 100-gigabit second data network linking research centers across the nation. The agency is still trying to figure out how to dispose of an additional \$371 million that has been allocated to its Office of Science.

## Lithium Battery Alliance Is In High Gear

The recently created National Alliance for Advanced Transportation Batteries (NAATBatt) has selected Kentucky to build a new manufacturing plant for lithium-ion batteries. The consortium of 55 companies, associations and research laboratories selected a 1,551-acre site in Glendale, Ky., and plans to build a \$600-million facility that will employ up to 2,000 workers, according to Kentucky Gov. Steve Beshear.

The consortium was the brainchild of Chicago lawyer Jim Greenberger of the firm Reed Smith LLP. Greenberger organized a conference last June on the topic of venture investments in energy storage technologies. He learned that there were no domestic manufacturers of lithium-ion batteries, a strategic commodity that was being heavily subsidized by foreign governments. "If we don't have any capacity to build these batteries in the United States, we will not be able to hold onto our automobile industry," he says. By November of 2008, he was deciding whether to organize another conference on the subject or organize a manufacturing enterprise. He opted for the latter.

He started with a group of 15 companies and organizations and has expanded to 55, describing himself as a "cat herder." The consortium recruited Sandy Kane to be its treasurer and chief financial officer. Kane was a former vice president of IBM who became the original chairman of the Sematech executive committee back in the early 1980s. "Why invent the wheel?" says Greenberger. "This has been done already in a remarkably similar circumstance with a remarkably similar problem." The consortium also has named Sanjay Deshpande from Enersys in Reading, Penn., to be the consortium's chairman of the board. It has an executive committee of seven people and a board with 21 individuals.

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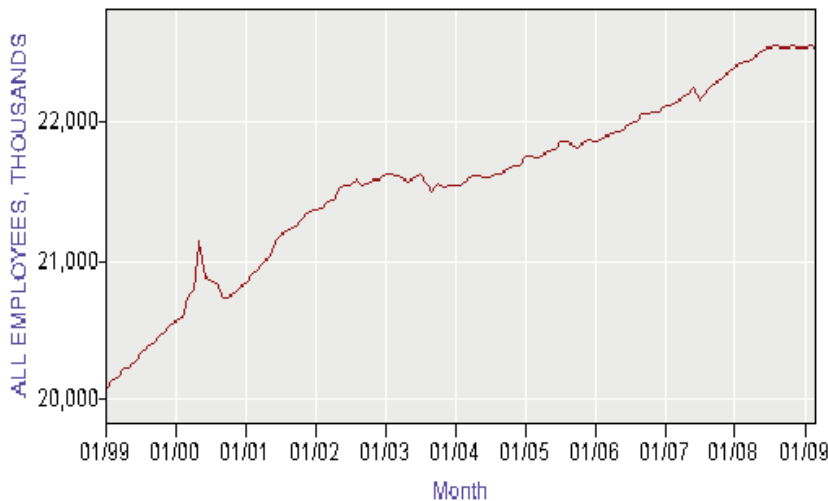
## Unemployed Exceed Mfg. Jobs

There are now more people in the United States who are unemployed than are working in the manufacturing sector. With a total loss of 663,000 jobs throughout the economy in March (including 161,000 manufacturing jobs), the total number of unemployed Americans rose to 13.1 million (not including those who have given up looking for jobs, are working part time and want full time work or are in prison).

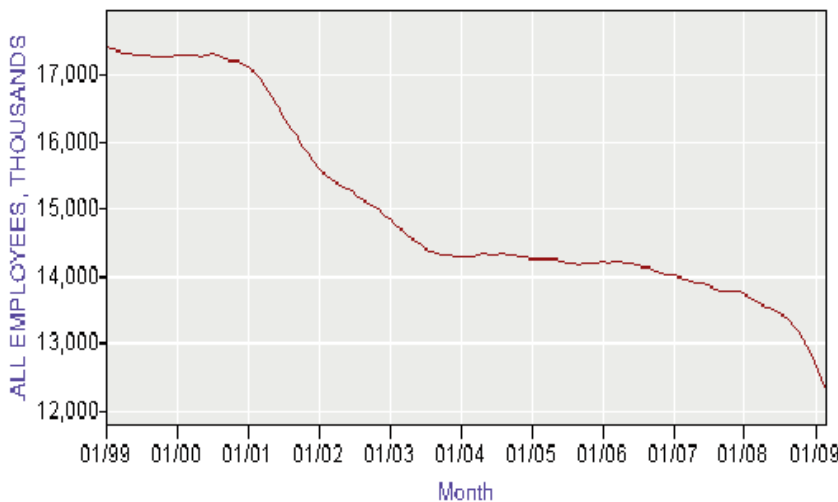
The number of people working in manufacturing now stands at 12.3 million, a decline of 5 million over the past decade. The number of people working in manufacturing is almost half the amount of people now working in the government, at 22.5 million people. There are 19 million Americans working in education and health services; 14.9 million working in retail; and 13 million working in leisure and hospitality. A vast proportion of these jobs depend on the wealth created by manufacturing enterprises.

Of the 306 million Americans, 154 million are considered to be in the civilian labor force, with 141 million holding jobs. That means the 12.3 million manufacturing workers account for only 8.7 percent of the jobs in the country. Four out of every 100 Americans work in the manufacturing sector.

**Total Government Employment 1999 - 2009**



**Total U.S. Manufacturing Employment 1999 - 2009**



(Source of charts: Bureau of Labor Statistics)

## Federal Funding Of University Research & Development, 2007

The top 100 universities receiving federal funding for research, development and engineering accounted for 82 percent of all such outlays to universities in 2007, or \$21 billion of the \$25.4 billion provided, according to the National Science Foundation. Total federal R&D funds to universities were up by 0.2 percent in 2007, a 2.4 percent decrease in constant 2000 dollars from the

previous year. The Department of Health and Human Services provided 64 percent of total federal R&D funds to universities, followed by the National Science Foundation at 13 percent and the Department of Defense at 12 percent. The full set of data is located at <http://www.nsf.gov/statistics/fedsupport/>. Here is the list of top 100 universities receiving R&D funds.

1.	Johns Hopkins University	\$1,186,768,000	51.	George Washington Univ.	\$161,051,000
2.	Univ. of Washington	\$612,498,000	52.	Calif. Institute of Technology	\$155,763,000
3.	Univ. of Michigan	\$501,837,000	53.	Univ. of Maryland, Baltimore	\$154,340,000
4.	Univ. of Pennsylvania	\$498,549,000	54.	Univ. of Texas, Austin	\$153,631,000
5.	Univ. of Calif., Los Angeles	\$480,679,000	55.	Univ. of Miami	\$141,255,000
6.	Duke Univ.	\$470,842,000	56.	Univ. of Md., College Park	\$137,420,000
7.	Univ. of Calif., San Diego	\$433,801,000	57.	Michigan State Univ.	\$135,080,000
8.	Univ. of Calif., San Francisco	\$433,388,000	58.	Rutgers	\$131,147,000
9.	Harvard Univ.	\$429,693,000	59.	Yeshiva Univ.	\$128,547,000
10.	Univ. of Pittsburgh	\$426,764,000	60.	Purdue Univ.	\$125,622,000
11.	Columbia Univ.	\$426,399,000	61.	Univ. of Mass., Worcester	\$121,898,000
12.	Stanford Univ.	\$425,931,000	62.	Univ. of Kentucky	\$119,892,000
13.	Washington Univ. St. Louis	\$407,809,000	63.	Univ. of Cincinnati	\$117,316,000
14.	Yale Univ.	\$387,298,000	64.	Carnegie Mellon Univ.	\$114,737,000
15.	Mass. Institute of Tech.	\$381,753,000	65.	Wake Forest Univ.	\$113,251,000
16.	Univ. of Minnesota	\$371,293,000	66.	Univ. of New Mexico	\$110,620,000
17.	Univ. of Wisconsin, Madison	\$369,310,000	67.	Princeton Univ.	\$108,522,000
18.	Pennsylvania State Univ.	\$355,300,000	68.	Univ. of Kansas	\$107,621,000
19.	Univ. of N.C. Chapel Hill	\$353,478,000	69.	Univ. of Connecticut	\$102,501,000
20.	Vanderbilt Univ.	\$331,244,000	70.	Univ. of Texas, San Antonio	\$102,042,000
21.	Univ. of Colorado	\$330,323,000	71.	Univ. of Texas Medical Branch	\$100,440,000
22.	Cornell Univ.	\$326,385,000	72.	Dartmouth College	\$99,116,000
23.	Case Western Reserve	\$278,897,000	73.	Univ. of Texas, Houston	\$98,114,000
24.	Univ. of Southern Calif.	\$262,180,000	74.	Univ. of Calif., Santa Barbara	\$97,962,000
25.	Univ. of Rochester	\$255,201,000	75.	Colorado State Univ.	\$97,690,000
26.	Northwestern Univ.	\$254,969,000	76.	Medical C., Wisconsin	\$96,972,000
27.	Univ. of Chicago	\$248,571,000	77.	Univ. of Hawaii, Manoa	\$93,157,000
28.	Emory Univ.	\$247,941,000	78.	Georgetown Univ.	\$93,127,000
29.	Univ. of Calif., Davis	\$243,149,000	79.	Brown Univ.	\$92,839,000
30.	Univ. Ala., Birmingham	\$235,077,000	80.	Virginia Tech	\$91,626,000
31.	Baylor C. of Medicine	\$227,876,000	81.	Arizona State Univ.	\$91,094,000
32.	Univ. Calif., Irvine	\$219,585,000	82.	Wayne State Univ.	\$90,738,000
33.	Ohio State Univ.	\$217,570,000	83.	Medical Univ., S.C.	\$89,358,000
34.	Univ. of Calif., Berkeley	\$214,549,000	84.	Louisiana State Univ.	\$89,300,000
35.	Univ. of Arizona	\$212,504,000	85.	SUNY Stony Brook	\$89,070,000
36.	U. of Ill., Urbana-Champaign	\$210,499,000	86.	Univ. of Central Florida	\$88,027,000
37.	Boston Univ.	\$208,680,000	87.	Utah State Univ.	\$84,997,000
38.	Univ. of Iowa	\$208,394,000	88.	North Carolina State Univ.	\$83,400,000
39.	Scripps Research Institute	\$199,031,000	89.	Univ. of Missouri, Columbia	\$81,760,000
40.	Univ. of Virginia	\$198,978,000	90.	Florida State Univ.	\$79,677,000
41.	Univ. of Texas SW Med. Ctr.	\$191,047,000	91.	Tufts Univ.	\$79,336,000
42.	Oregon Health & Science Univ.	\$189,660,000	92.	Univ. of Georgia	\$78,866,000
43.	Mt. Sinai School of Medicine	\$187,319,000	93.	Virginia Commonwealth Univ.	\$77,446,000
44.	Univ. of Florida	\$183,795,000	94.	Univ. of Vermont	\$77,296,000
45.	New York Univ.	\$178,245,000	95.	Oregon State Univ.	\$75,229,000
46.	Georgia Inst. of Technology	\$174,486,000	96.	Univ. of Mass., Amherst	\$75,039,000
47.	Univ. of Illinois, Chicago	\$172,492,000	97.	Univ. of Hawaii System Office	\$74,914,000
48.	U. of Tex., Anderson Cancer	\$168,188,000	98.	Univ. of Oklahoma	\$74,845,000
49.	Univ. of Indiana	\$166,980,000	99.	Iowa State Univ.	\$74,088,000
50.	Univ. of Utah	\$164,684,000	100.	Rockefeller Univ.	\$73,667,000



# Wind Energy Had A Very Good Year

Last year was a very good one for the U.S. wind energy industry. The industry added 8,558 megawatts of capacity (about eight nuclear power plant's worth of power), the best year ever for new additions. Total installed capacity in the United States now exceeds 25,000 megawatts, according to the American Wind Energy Association (AWEA). Wind accounted for 42 percent of all new electric power generating capacity added in 2008, up from 35 percent in 2007 and 2 percent in 2004. The industry is projecting fewer installations this year, at 5,000 megawatts, "due to the economic crisis," says AWEA.

"Large numbers of wind power projects are proposed in every region of the country with strong wind resources," says the Wind Energy Association in its annual report on the industry. "Close to 300,000 megawatts of proposed wind projects are currently waiting in line to connect to the grid. The proposed wind projects in these queues have applied for interconnection to the grid but most of these wind plants cannot be built because there is insufficient transmission capacity to carry the electricity they would produce."

Globally there were 27,000 megawatts of wind power installed last year, bringing total global capacity to 120,000 megawatts. The United States overtook Germany for the most installed wind power capacity. China is expected to overtake Germany in installed capacity in 2010.

In the United States, Texas leads all states in installed capacity with over 7,000 megawatts, adding 2,671 megawatts of capacity in 2008. Iowa "surged" past California in installed wind energy capacity last year by installing 1,600 megawatts of turbines. Minnesota was in third place in capacity additions, at 456 megawatts, followed by Kansas at 450 megawatts.

General Electric dominated among manufacturers, installing 43 percent of the new U.S. capacity. In second place was Vestas of Denmark (3,657 mw); Siemens of Germany (791 mw); Suzlon of India (736 mw); Gamesa of Spain (616 mw); Clipper of California (595 mw); Mitsubishi of Japan (516 mw); Acciona Wind Power of Spain (409 mw), and Fuhrlander of Germany (5 mw).

There was also a surge of manufacturing capacity added in the United States. About 70 new manufacturing plants representing \$2 billion in investment were built in the United States. These facilities produce towers, components, gearboxes and generators, frames, turbines and blades. "The share of domestically manufactured wind turbine components has grown from under 30 percent in 2005 to around 50 percent in 2008," says the AWEA. "Due to the recent slowdown in orders, wind turbine and turbine component manufacturers in different parts of the country have announced some layoffs, but some plan to rehire the workers as the market picks back up."

The wind energy industry added 35,000 new jobs in 2008, resulting in a total of about 85,000 people

employed in the industry.

The U.S. market for small wind turbines under 100-kilowatts, grew by 96 percent in 2008, adding 19.2 megawatt of capacity. "More than 10,000 small wind turbines were sold in the United States in 2008, due primarily to increases in private equity investment that allowed manufacturing volumes to increase, particularly in the commercial segment of the market (systems 21 to 100 kilowatts)," says the Wind Energy Association.

The residential segment of the market (turbines of between one and 10 kilowatts), is being driven by manufacturing economies of scale "but also rising residential electricity prices and a heightened public awareness of the technology and its attributes," says the annual assessment. The industry projects 30-fold growth of small turbine installations "within as little as five years, despite a global recession, for cumulative U.S. installed capacity of 1,700 megawatts by the end of 2013," says the AWEA. Most of this is going to be spurred by a new eight-year 30 percent federal Investment Tax Credit passed by Congress in October 2008.

The report is located at <http://www.awea.org/publications/reports/AWEA-Annual-Wind-Report-2009.pdf>.

National Capacity Growth of Wind Energy

Year	Net Capacity Additions	Cumulative Capacity
1981-1983	240	240
1984-1986	982	1,222
1987-1989	181	1,403
1990-1992	181	1,584
1993-1995	119	1,703
1996	1	1,703
1997	8	1,711
1998	142	1,853
1999	659	2,512
2000	67	2,579
2001	1,694	4,273
2002	412	4,685
2003	1,672	6,357
2004	372	6,729
2005	2,420	9,149
2006	2,454	11,575
2007	5,249	16,823
2008	8,545	25,369

(Source: American Wind Energy Association)

# The End Of The World As We Know It

**It is stunning what is happening to the ice sheets and glaciers in Antarctica. Massive pieces of ice are disappearing and the velocity of the glaciers is increasing at a rate never before contemplated, according to the United States Geological Survey. Using early photographs taken by explorers, scientists and whalers as well as frequent satellite images from the early 1970s, it is possible to accurately measure differences in the size of Antarctic ice sheets over the past 70 years. These sheets “are melting more rapidly than previously known because of climate change,” says the USGS in collaboration with the British Antarctic Survey.**

There are “dramatic changes on the larger ice shelves and their tributary glaciers” occurring in coastal areas of the continent, but especially in the “northern” region, which includes the Antarctic Peninsula. This area is experiencing an “order of magnitude” increase in its surface temperature of between 1.6 degrees Celsius and 3.7 degrees Celsius. The research found that 87 percent of the 174 glacier-ice fronts and ice shelves it measured were in retreat. “Substantial coastal change is occurring on all parts of the Antarctic Peninsula,” according to the research. “Although the changes occurring in the eastern

part of the Peninsula are more dramatic and more noticeable, the changes occurring in the western part are equally important and also have the potential of affecting the mass balance of the entire Antarctic Peninsula.”

The USGS sounds worried. Its nine study authors note in the second sentence of their study that the melting of the West Antarctic Ice Sheet would cause the sea level to rise by six meters, “and the potential sea-level rise after melting of the entire Antarctic ice sheet is estimated to be 65 meters to 73 meters,” the researchers write. “On the basis of

satellite measurements of Earth’s gravity from 2002 to 2005...the mass balance of the Antarctic ice sheet decreased during the period.”

The researchers studied a few very large ice shelves. Among them was the Wordie Ice Shelf located on the western side of the Antarctic Peninsula. This shelf “has retreated during the last 40 years and disappeared, except for a few small remnants,” says the analysis. It is the first study to confirm its complete disappearance.

This ice shelf filled all of the Wordie Bay in 1936 when it was first described by the British Graham Land Expedition. Airborne photos starting in 1947 indicated that the ice shelf advanced between 1947 and 1966, when it was about 2,000 square kilometers in size. It advanced slowly for another eight years, but then it began to retreat. “In the 10 years between 1979 and 1989, slight to moderate retreat was seen in the most northern and southern parts of the ice shelf,” according to the USGS paper. At that time, it had shrunk to about 700 square kilometers. By 2004 it was gone.

The Wordie Ice Shelf covered what were known to be “ice rises.” These have now become islands and have been renamed by the U.S. Advisory Committee on Antarctic Names. “Linchpin and Miller Ice Rises should be considered historical names because there is no visible trace of the former ice rises,” writes the USGS. “Reynolds, Wade and Coker Ice Rises appear to be islands on the latest satellite imagery.”

Even more incredible is that the velocity of the Fleming Glacier that is feeding Wordie Bay has increased by 50 percent since 1975. The tributary glaciers are also rapidly thinning and discharging “a considerable amount of ice mass,” states the paper.

The same situation is occurring with the Larsen Ice Shelf, which was advancing until 1986. But by 1997, the “Larsen B” ice front “calved back as much as 30 kilometers to a more stable position,” says the USGS paper. “After the complete disintegration of Larsen ‘A’ Ice Shelf in 1995, many researchers intensively monitored and

*(Continued on page seven)*

## Obama Appoints His Trade Team

The Obama administration has named its top trade official at the Department of Commerce. Francisco “Frank” Sanchez, nominated to be the undersecretary for International Trade, joins the administration from the firm of CMPartners, headquartered in Cambridge, Mass. Sanchez was candidate Obama’s policy advisor on Latin America. CMPartners provides support and advice to individuals and organizations that are engaged in negotiations. Sanchez worked in the Bill Clinton White House and became assistant secretary at the Transportation Department. He received his undergraduate and law degrees from Florida State University and received a Master’s in Public Administration from the Kennedy School of Government at Harvard University.

Elsewhere, Obama has appointed Miriam Sapiro, to be the Deputy U.S. Trade Representative. Shapiro is president of Summit Strategies International, which advises non-profit organizations and companies on international Internet and telecommunications policy issues. She has served in the administrations of Presidents Reagan, Bush and Clinton. “Over the course of her career, Sapiro has represented the United States in numerous complex multilateral and bilateral negotiations,” says the White House. “In 1999, President Clinton appointed her special assistant to the President for Southeast European Stabilization & Reconstruction. Sapiro supervised efforts to revitalize the region.” She served on the National Security Council as director for European Affairs from 1997 to 1999. Prior to that, she was a member of the Secretary of State’s policy planning staff. Sapiro received a B.A. from Williams College and J.D. from New York University School of Law. She has taught international law as an adjunct professor at New York University School of Law, Georgetown University Law Center and Columbia University.

# Defense Industrial Base Is On The Verge Of Major Retrenchment

The commercial industrial segments of the United States economy might be in a deep recession, but that's not the case for the large publicly traded companies in the defense sector. During the last quarter of 2008, revenue for the S&P 500 fell by 8 percent, while earnings tumbled by 52 percent. For the big defense companies, earnings increased by 16 percent and revenues increased by 5 percent, according to the Department of Defense's Office of Industrial Policy.

The U.S. defense sector last year saw free cash flow increase by 30 percent, while free cash flow declined by 24 percent for the S&P 500. "These relative financial results reflect that the prime defense contractors are at the peak of the spending cycle and are much better positioned to withstand the problems in the credit markets and the general economy than commercial companies," says the DOD Industrial Policy Office in its "Annual Industries Capabilities Report to Congress." "The overall better performance of the defense sector companies is due to the steady backlog buildup and predictable cash flow resulting from government-supplied contract financing (progress payments) and performance payments."

But in the longer term, things are not looking rosy for many sectors of the defense industry, especially the aircraft segment. One of the best indicators of potential long-term decline is a substantial reduction in research

and development for major defense acquisition systems, particularly the F-35 Joint Strike Fighter. While aircraft procurement is expected to increase through 2013, a sharp decline in spending on research, development, testing and evaluation "does not bode well for companies without long term production programs," says the study. "While Lockheed Martin and Sikorsky have current programs that will remain in production for the next 20 years, Boeing's future participation in the fighter/attack and transport segments is more problematic without support of Foreign Military Sales to keep existing production lines open."

Shutting down C-17 production and ending production of the F-18 line of fighters means that the industrial base infrastructure in Long Beach, Calif., and St. Louis, Mo., "may have insufficient business to continue in place," says the Industrial Policy Office. "Suppliers not associated with future production programs (for example, suppliers not participating in the F-35 or UH-60M) will be impacted the most. These suppliers will be forced to either exit the business or find new DOD or non-DOD programs for their survival."

With the workload for military aircraft design and development "at a historic low," the military is beginning to worry about "significant skill and experience loss [that is] expected as the aging R&D workforce retires." Most planned military aircraft programs are years from being proposed and will face "significant technical, funding and requirements challenges," says the study. "Finally, there is widespread industry concern over continued viability/availability of essential test assets. The Office for Industrial Policy is

*(Continued on page nine)*

## Glaciers... (From page six)

analyzed the characteristics of Larsen 'B' Ice Shelf. From 1997 to 2000 the Larsen 'B' ice front retreated as much as another 30 kilometers, much of which occurred by between February 1998 and March 1999. This retreat calved an area of more than 2,300 square kilometers and the total 1986 to 2000 retreat involved the loss of more than 4,550 square kilometers of ice shelf. Then during a 35-day period from January 31, to March 7, 2002, there was a sudden and complete disintegration of northern Larsen 'B' Ice Shelf that brought the ice front back to the grounding line. The total loss of ice from this event was 3,250 square kilometers. Since 2002, the ice front (the former grounding line) of northern Larsen 'B,' north of Cape Disappointment, has retreated farther. The remaining southern part of Larsen 'B' Ice Shelf has calved an additional almost 500 square kilometers of ice, and melt ponds can be seen on the surface where Leppard

and Flask Glaciers enter the shelf." Many researchers have noted that meltwater ponding on the surface of an ice shelf "is one of the first visible signs of impending breakup; the supraglacier-meltwater pond formation also accelerates the breakup by contributing to the process of rapid disintegration."

The complete disappearance of the northern part of the Larsen Ice Shelf means that an area three times the size of Rhode Island (or more than 8,500 square kilometers) no longer exists. Says study lead author Jane Ferrigno: "This continued and often

significant glacier retreat is a wakeup call that change is happening in our earth system and we need to be prepared. Antarctica is of special interest because it holds an estimated 91 percent of the Earth's glacier volume, and change anywhere in the ice sheet poses significant hazards to society."

The study "Coastal Change and Glaciological Map of the Larson Ice Shelf Area, Antarctica: 1940-2005" (28 pages) is located at [http://pubs.usgs.gov/imap/2600/B/Larsen\\_pamphlet12600B.pdf](http://pubs.usgs.gov/imap/2600/B/Larsen_pamphlet12600B.pdf).

## Obama's 'Transparent' Government

So you heard the news that the White House has provided the public with the financial disclosure forms of its top staff members. Now you would like to view those forms.

Good luck. The forms are not available to the general public. To view them, you have to complete an online request, stating your name, address and profession. The White House says it will make the SF-278 Executive Branch Personnel Public Financial Disclosure reports available to "reporters and interested parties." Requested reports "will be e-mailed as quickly as possible — please call the press office if you experience a delay," says the online request form.



## Specialty Metals & DOD... (From page one)

The Strategic Materials Board sounds like it holds great disdain for the U.S. steel and specialty metals industries. It says in its report from the meeting it held on December 12, 2008, that its "key finding" is that specialty metals "are not 'materials critical to national security' for which only a U.S. source should be used; and there is no national security reason for the Department to take action to ensure a long-term domestic supply of these specialty metals."

In a January 2007 report prepared by the American Iron and Steel Institute, the Specialty Steel Industry of North America (SSINA), the Steel Manufacturers Association and the United Steelworkers union, the groups argued that the United States government has long recognized the importance of a strong metals industry to America's national security. The U.S. industry is responsible for supplying high-tech metals and alloys used in nuclear submarines, Patriot and Stinger missiles, aircraft carriers, Bradley Fighting Vehicles, and virtually every military aircraft in production. "If we continue to lose our manufacturing base due to market-distorting foreign competition or U.S. economic policies that are hostile to domestic investment and U.S.-based manufacturing, it could become impossible to produce here; the U.S. military would lose its principal source of strategic metals; and we as a nation would become dangerously dependent upon unreliable foreign sources of supply," said the study.

DOD doesn't buy it. In an assessment of that report, the Strategic Materials Board said that while many U.S. military platforms use these metals "incorporation into a DOD system does not, by itself, make a material 'critical to national security.' If incorporation alone was sufficient, every type of material from plastic to rubber and glass would be a critical material. More discriminating criteria are needed to distinguish critical materials from the larger set of strategic materials."

Specialty metals might be "strategic" and "may" require monitoring, but they do not require "a domestic source restriction," says the DOD Materials Protection Board. If there are problems of supply during a "projected conflict, other risk mitigation options, like stockpiling, could represent an effective alternative" to assuring supply.

The specialty steel industry should stop claiming that its products are "critical" to national security, says the DOD board. The only way they could be considered "critical" is if the military was the primary market for their products, which it is not, and if there were problems associated with the security of supply, be they domestic or international.

"The Department of Defense does not dominate the market for specialty metals," it points out. "Its active and full involvement and support is not necessary to sustain and shape the strategic direction of the market; and the risk of supply disruption is not significant. According to the SSINA, 'defense applications account for less than 10 percent of revenues in specialty metals companies.' Recent Defense Contract Management Agency analysis of certain metals found that DOD consumes less than 1 percent of total U.S. steel production; about 6 percent of U.S. aluminum production and between 8 and 19

percent of domestic titanium production...The health of the domestic specialty metals industry is, and will continue to be, determined by its ability to sell core commercial products to commercial customers."

DOD seems to have forgotten who pays its bills. It says that there are plenty of reliable foreign suppliers of specialty metals and metal alloys, listing Japan, South Korea, Germany, India, Brazil, Mexico, Canada, Australia and the UK as places where there are reliable suppliers. It says there are plenty of reliable suppliers of titanium alloys in Japan, Italy and Germany. Few of these companies pay taxes to the federal government.

"We are in strong opposition to the findings of the report," says **Laurence Lasoff**, an attorney with Kelley Drye, which is in charge of the Washington legal and lobbying activities of SSINA and a number of other metals trade associations. "We believe there is no legal basis for the conclusion that strategic materials are not critical because DOD is not the pre-eminent customer. There is no legal basis whatsoever for a definition of 'critical' based upon the fact that DOD has to be the principal customer."

The Strategic Materials Board's conclusions have those who were responsible for creating the board scratching their heads. **Jeff Green**, former staff director of the House Armed Services Committee who

(Continued on page nine)

## MAPI Index Reaches New Low... (From page one)

MAPI expects will continue over the next three to six months.

"The extent of the decline in the individual indexes to such low levels in absolute terms is unprecedented in the history of the Business Outlook Survey," says Donald Norman, MAPI economist and survey coordinator. "Further, the decline in activity extends across the entire manufacturing sector." Most of the responses to the survey were received in March, "and may reflect the worst of the crisis for manufacturers," says Norman.

The biggest drop came in the non-U.S. investment index, which measures companies' plans for capital spending outside the United States. It fell from 40 percent to 14 percent. The profit margin index sunk by 24 percentage points, falling to 19 percent. The export orders index, which measures how first quarter 2009 exports compare with those of the first quarter of 2008, declined to 8 percent in March, from 25 percent in the December survey. The capacity utilization index, based on the percentage of firms operating above 85 percent of capacity, fell to 10.5 percent in the current survey, from 26.7 percent three months ago.



## Defense Industrial Base...

(Continued from page seven)

working closely with the DOD Test Resources Management Center to develop a follow-on plan to conduct a comprehensive industry/government assessment of test resources to include such issues as workforce, physical assets and required funding.”

Other defense industrial sectors are facing similar long-term sustainability issues. The strategic and tactical missile sector along with producers of smart munitions will experience a 50 percent decline in funding for research and development between 2007 and 2013 “severely limiting opportunities for the missile industrial base to maintain robust design teams,” says the assessment. “At the same time, strategic missile procurement funding is also declining as the few remaining strategic missile programs [Minuteman III] come to an end.” There is only one strategic missile program being completed — the Joint Air-to-Ground Missile — and the Minuteman III replacement program is also coming to an end. The only remaining strategic missile that remains is the Trident program, resulting in great stress on the solid rocket motor and space launch industrial base.

There are much deeper industrial problems with the missile and guided munitions industry, since it relies almost exclusively on the military for its sustenance. As such, companies making military-specific global positioning systems, fuses, thermal batteries, inertial measurement units, infrared detectors, radiation-hardened ICs, germanium substrates for solar cells,

visible sensor charge coupled devices and high-reliability space qualified diodes might be doomed if there is a “demand gap” for these products, as is expected. “These components qualify as ‘important’ because they are used on multiple programs, they are long lead items to manufacture, and few suppliers exist,” writes the Office of Industrial Policy. With a small market and no money for research, companies will not have enough orders to sustain themselves. “Since production rates of certain missile/precision-guided munitions likely would have to be increased significantly to fight a new conflict, many of these ‘important components’ represent bottlenecks in the missile/precision-guided munitions supply base.”

The defense ground vehicle industry could also be in for tough times since it is highly dependent on supplemental appropriations for the wars in Iraq and Afghanistan. Once that funding stops, the sector “will become more fragile,” says the assessment. “It is a sector that warrants close monitoring. This is especially true given the current depressed commercial automotive sector. General Motors, Ford and Chrysler no longer are active members of the defense industrial base, although some of their suppliers are.” If any of these companies go bankrupt, supply chain companies could be in trouble, impacting companies making heavy military vehicles. “If some of these suppliers exited the business, the Department’s military vehicle contractors would be required to identify and qualify other suppliers,” says the assessment.

The “Annual Industrial Capabilities Report to Congress” is located at [http://www.acq.osd.mil/ip/docs/annual\\_ind\\_cap\\_rpt\\_to\\_congress-2009.pdf](http://www.acq.osd.mil/ip/docs/annual_ind_cap_rpt_to_congress-2009.pdf).

## Specialty Metals... (From page eight)

crafted the legislation that created the board with recently retired Committee Chairman Rep. Duncan Hunter, says that its conclusions represent a “fundamental failure to comply with congressional intent.” Green, now in charge of the J.A. Green & Co. consulting firm in Washington, D.C., notes that the board did not consider the importance of a variety of materials, such as rare earth magnets, and was misleading about the global supply of titanium. The only viable supplier of titanium outside the United States is the Russian firm VSMPO, a company that has been associated with Russian arms suppliers that have been sanctioned by the Department of State for supplying military equipment to the Iranians. “For not even examining the VSMPO titanium issue is appalling,” says Green. “Not identifying the issue of rare earths in high performance magnets [coming from China] totally misses the mark. The technical inaccuracies in the report are astounding.”

Lasoff says the real intent of the report is to provide DOD with the rationale for eliminating the Specialty Metals law requiring it to buy from U.S. producers. “It means U.S. defense dollars will be used to support the expansion of the specialty metals industry in Russia and China at the expense of U.S. producers,” says Lasoff. “This is not about ‘Buy American.’ This is about our

national security.” The Defense Production Act requires U.S. companies to switch commercial production to military applications if the need arises. Foreign suppliers are under no such obligation to do so.

The industry is also upset by DOD’s use of market data derived from only one year, 2007, the best year in the industry’s history. A lot has changed in a very short amount of time. “You have an analysis of a single year upon which to determine to what degree these companies are dependent on DOD work,” says Lasoff, “And then you have it leading to a conclusion that they don’t need domestic preferences, completely ignoring the cyclical nature of the industry and the critical nature” of DOD demand during economic contractions.

The “Report of the Meeting of the Department of Defense Strategic Materials Protection Board Held on December 12, 2008” is located at [http://www.acq.osd.mil/ip/docs/report\\_from\\_2nd\\_mtg\\_of\\_smpb\\_12-2008.pdf](http://www.acq.osd.mil/ip/docs/report_from_2nd_mtg_of_smpb_12-2008.pdf).

For a copy of 2007 SSINA report titled “Steel and the National Defense,” go to [http://www.ssina.com/news/releases/pdf\\_releases/steel\\_and\\_national\\_defense\\_0107.pdf](http://www.ssina.com/news/releases/pdf_releases/steel_and_national_defense_0107.pdf).

A study done for the DOD by the Institute for Defense Analysis, which bolsters the ideological case against the Specialty Metals requirement, (entitled “Assessment of Industry Investment in U.S. Domestic Production of Strategic Materials”) is located at [http://www.acq.osd.mil/ip/docs/ida\\_paper\\_p-4377.pdf](http://www.acq.osd.mil/ip/docs/ida_paper_p-4377.pdf).

# Michigan Think Tank Says Manufacturing Will Never Return And The State Must Re-Think Its Future

The State of Michigan has to abandon the idea that manufacturing will some day make it prosperous again, according an organization called Michigan Future Inc. With the current downturn, it has now become clear that the majority of jobs being lost are occupied by people with low education and that those jobs are never coming back.

For the past two decades, industries that hire low-educated workers have not hired nearly as many workers as those that employ highly educated people, says Michigan Future. "The American economy has been going through a profound structural transformation from an industrial to a knowledge-based economy," according to the group in its annual report. "We are confident that when the current severe downturn ends, knowledge-based industries will continue to be where job growth is the strongest and average wages are the highest." That will not be in traditional manufacturing, especially automotive manufacturing.

Never again will the automobile industry provide Michigan with the prosperity it once enjoyed. "If — and it's a big if — the domestic auto industry survives the current downturn, it will be substantially smaller, employ far fewer and pay its workers less with fewer benefits," says Michigan Future. "The decline in autos is part of an irreversible new reality that manufacturing (work done in factories) is no longer a sustainable source of high-paid jobs. Nor is it a source of future job growth."

Even if Michigan somehow becomes a hub for green energy production, "factory jobs will not be a source of new high paid jobs for Michigianians," says Michigan Future. Farming and tourism are also not going to create much wealth in the state.

The only way out of the economic downturn is for Michigan to embrace the tenets of a knowledge-based economy. "It is the only reliable path to regain high prosperity," says the group. "The choice we face is do we do what is required to build the assets needed to compete in the knowledge-based economy or do we accept being a low-prosperity state."

A state like Minnesota has a much lower unemployment rate (8.2 percent) than Michigan (12.6

percent), and much higher per capita income (\$41,000 versus \$34,000 in Michigan). It also has a higher percentage of residents holding four-year college degrees (31 percent in Minnesota versus 25 percent in Michigan). The same story holds for virtually all other states with lower unemployment and higher per capita incomes.

To get back on track economically, Michigan must create a culture that values learning, entrepreneurship and "being welcoming to all." It must create places where mobile young talent wants to live. "This means expanding public investments in quality of place with an emphasis on vibrant central city neighborhoods," says the group. Michigan must make robust investments in higher education and its major research institutions. It must reinvent its educational system and prepare students for higher education. And it must develop new private sector leadership "that has moved beyond both the desire to recreate the old economy as well as the old fights. Michigan needs a leadership that is clearly focused, at both the state and regional level on preparing, retaining and attracting talent so that we can prosper in the global economy."

The organization's report, "Michigan's Transition to a Knowledge-Based Economy: Second Annual Progress Report," is located at <http://www.michiganfuture.org/Reports/progress%20report%2009.pdf>.

## **Battery Alliance...** (From page three)

The next task is putting together a proposal for submission to the Department of Energy to tap into a \$2-billion program to fund electric battery component manufacturing projects. The deadline for submissions is May 19. "That will be a shot in the arm for the industry," says Greenberger.

Kentucky provided the consortium with the land at no cost and it expects to invest \$200 million in the facility and surrounding area as well as another \$100 million to assist in the construction of the facility. Kentucky will also invest \$10 million in infrastructure improvements associated with water, sewer, electric and natural gas service and \$44 million in improving site access via Interstate 65.

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