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NAM And Congress Meet Head-On In Dispute Over New Lobbying Law

The National Association of Manufacturers' legal challenge to the last year's Honest Leadership and Open Government Act, which would require the disclosure of NAM members paying more than \$5,000 per quarter to pursue lobbying tasks, is headed for a showdown.

In its lawsuit — NAM vs. Taylor, filed in U.S. District Court for the District of Columbia — NAM claims that the new law violates the first amendment rights of its members "petitioning for redress of grievances, freedom of speech and freedom of association," according to NAM president John Engler. The law

would have a "chilling effect" on an organization like NAM because it would discourage companies and their employees "from exercising their rights to participate in the political process," writes Engler in an op-ed piece that appeared in the March 3 issue of *The Hill* newspaper. This section of the law (207) "does not apply to groups like labor unions made up of individual members or organizations like the American Association of Justice, i.e., the trial lawyers," writes Engler.

The penalties for trade associations not disclosing the names of their members paying \$5,000 or more in dues during the previous quarter for lobbying are \$200,000 and up to five years in jail.

Congressional defendants in NAM's suit don't agree with NAM's arguments. NAM's legal claims "are meritless" and should be "rejected, its complaint dismissed and judgment granted in favor of defendants," argue the top lawyers from the House of Representatives and the U.S. Senate in their Feb. 29 opposition filing to the suit. "The Supreme Court rejected a First Amendment challenge to lobbying disclosure more than 50 years ago [in *United States v.*

(Continued on page six)

Defense Science Board Recommends That DOD Adopt An Energy Strategy

The Department of Defense has no strategy to deal with its growing dependence on fuel, according to the Defense Science Board. In what can be described as a "damning" report on the subject of DOD's energy use, the DSB says troops in the field are tethered to a complex, vulnerable, expensive and wasteful energy supply line, and that DOD's operations in the United States that would be engaged in a homeland security emergency could be seriously impacted by an unreliable

electrical power grid.

"The Task Force concluded that lack of leadership is a root cause of DOD's energy problem," according to the DSB Task Force on Energy Security report entitled "More Fight — Less Fuel." It notes that DOD does not make financial account for the true cost of supplying troops with oil. Although DOD spent \$13.6 billion in 2006 buying 110 million barrels of petroleum fuel (about 300,000 barrels of oil per day making it the single largest

consumer of oil energy in the country), the final cost of delivering a gallon of fuel to troops in the field is at least \$15 per gallon and increases the farther it travels into the battle zone. Delivering fuel via an air tanker costs \$42 per gallon "to several hundred dollars per gallon for combat forces and forward operating bases deep within a battlespace," says the Science Board panel. These values do "not account for much of the force structure needed to deliver the fuel demanded by deployed assets."

The panel "found no strong,

(Continued on page eight)

DOD Worries That China Is Faking Itself Out

China is modernizing every aspect of its military, save perhaps for one important area: its military doctrine, according to the Pentagon in its annual assessment of China's military might. But applying ancient Chinese history to shape modern thinking might not be such a great idea.

"Recent decades have witnessed within the People's Liberation Army (PLA) a resurgence of the study of classic Chinese military figures Sun Zi, Sun Pin, Wu Qi and Shang Yang and their writings," writes the Pentagon on page 20 of its "Military Power of the People's Republic of China 2008" report to Congress.

One of the primary tenants of these writers is the use of deception and misinformation to counter an enemy that might be more powerful. These concepts might have worked hundreds of years ago, but may not be appropriate in an era of free flow of information and the growing demand for transparency in the global economy, writes the Pentagon.

China's central government's emphasis on secrecy along with the PLA's use of denial and deception in virtually every aspect of its military operations including the amount of money it is spending on new weapons "could lead to miscalculation and misunderstanding by outsiders of China's strategic intentions," according to the report. "Conversely, overconfidence among China's leaders in the uncertain benefits of stratagem and deception might lead to their own miscalculation in crisis."

The same tactics of deception used by commanders against adversaries are used within the army itself — to cover up problems with the PLA. "Secrecy and deception, therefore, may confuse China's leaders as much as its adversaries," according to the report from the Office of the Secretary of Defense.

The PLA could be relying on modern information technology as a "force multiplier," along with other concepts that have not proven themselves in the battlefield. "The PLA remains untested and this lack of operational experience complicates outside assessment of its progress in meeting the aspirations of its doctrine," says the report. This same lack of assessment exists for China's leaders who mostly do not have military experience, "giving rise to potential miscalculation that could spark or exacerbate crisis." If a crisis did arise, China's political leaders could get rotten advice on what to do from inexperienced commanders basing their judgment on their "scientific" military doctrines that are "divorced from the realities of the modern battlefield."

Sovereign Wealth Funds: U.S. Not Worried About Economic Security

The United States government does not consider the economic security of the nation when assessing investments being made in the country by foreign governments, says John Veroneau, deputy United States Trade Representative. The U.S. commitment to open investment "is reflected in the limited U.S. regulatory approach toward inbound investment," Veroneau recently told the United States Council for International Business at a meeting hosted by the Bank of New York Mellon.

The United States has mechanisms in place to determine if a foreign purchase of a U.S. company poses risks to national security. The Committee on Foreign Investment in the United States (CFIUS) should never "hesitate to block a transaction that truly threatens national security," said Veroneau. And it should never block the sale of a U.S. company based on "economic security" considerations.

In drafting an update to the CFIUS law in 2007 "it is important to note that Congress rejected calls to allow the president to block transactions on the basis that they could impair 'economic security,'" said Veroneau. "Doing so would have unhinged CFIUS from its core function of assessing national security and would have left a wide and ambiguous definition of what constitutes 'economic security.'" Congress deserves tremendous credit for recognizing that blocking an inward investment is an extraordinary serious exercise of governmental power and should be done in only the rarest circumstances, namely when national security interests require it."

Yet other countries don't follow the U.S. example, Veroneau noted. Sovereign Wealth Funds now total \$3 trillion in assets and could rise to \$15 trillion over the next seven years. The CFIUS review process does not distinguish between foreign investments by governments or private entities.

"Under the guise of 'economic nationalism' and overly broad concepts of national security, a number of countries have expressed intentions to block an array of inbound investments for reasons appearing to have more to do with protectionism than national security," Veroneau told the bankers. "As the world's largest outbound investor, the United States has a strong interest in discouraging countries from adopting protectionist investment policies. Our legitimacy and success in pursuing this goal will be affected by how we are perceived in terms of our own scrutiny of inward foreign direct investment."

Of the 1,730 foreign investment transactions in U.S. companies in 2006, 113 generated a CFIUS review. "None were blocked," said Veroneau. "The notion that the U.S. investment climate has turned protectionist is not supported by the facts."

Veroneau called on managers of foreign government wealth funds to avoid investing in companies or industries for political reasons. The U.S. government has asked the IMF, World Bank and the OECD to develop a set of best practices for sovereign wealth funds, so that they are transparent and responsible. "Such best practices would serve to avoid the adoption of protectionist measures," said Veroneau. "Without greater transparency by sovereign investors generally, the risk of a backlash against these funds will increase, along with more urgent calls for regulatory mandates."

DARPA Re-Orients Its Portfolio To Assist Warfighters And Injured Soldiers In Iraq

The wars in Iraq and Afghanistan are having a big impact on the research portfolio of the Defense Advanced Research Projects Agency.

DARPA's focus has shifted over the past seven years to serving the needs of the warfighters in the field — providing them with intelligence about the enemy, tracking bad guys anywhere on (or in) the planet, putting a combat system any place in the world within an hour, and conducting research into health systems for stricken soldiers.

“Since 2001 DARPA has accomplished a great deal for our national security,” DARPA director Tony Tether wrote in prepared testimony presented at a March 13 hearing of the House Armed Services Committee’s subcommittee on terrorism threats and capabilities. Here are some of the highlights:

Deny Hiding in Any Environment and Cultural Background

“The U.S. military is incredibly adept at precision strikes against targets on the traditional battlefield,” Tether explained. “Our adversaries know and understand this and they are getting smarter about concealing their activities and their movements. DARPA is working to counter these efforts to hide, move or blend in with the culture or environment by developing technologies to detect enemy activity in all situations and, once adversaries are detected, never to lose track of them.”

This means there is no hiding, nowhere: not under thick vegetation, not inside buildings nor in tunnels underground. “Last year, we successfully demonstrated a foliage penetrating radar that detects vehicles and dismounted adversaries under heavy forest canopy,” writes Tether. The so-called FORESTER program developed with DARPA funds was installed on a Black Hawk helicopter and could “detect people walking under foliage in and around concealed encampments.”

Another radar system under development called ISIS will allow warfighters to monitor moving targets under foliage. It would be mounted on a “stratospheric airship” and provide coverage of 5,000 square miles. “A single ISIS stationed over Baghdad today would provide total airspace knowledge and unprecedented ground vehicle tactical tracking across more than 80 percent of Iraq,” writes Tether. DARPA has completed component development for the system, including a solar-regenerative power system, and is “beginning design and manufacture of a scaled demonstration system.”

Iraqi insurgents and Taliban and Al-Qaeda terrorists won’t be able to hide in caves for much longer, either. DARPA’s Counter-Underground Facility program is developing new sensors “to find, characterize and conduct post-strike assessments of underground facilities,” writes Tether. Using an airborne system with seismic, electromagnetic, acoustic, gravity, optical and

chemical sensors, DARPA should be able to “rapidly find underground facilities and map out their backbone structure,” he explains.

DARPA’s “wide field-of-view” video sensor system will provide 65 real-time video windows “each providing high-resolution motion video,” writes Tether. Each window “will be independently steerable, allowing operators to keep critical areas of interest under constant surveillance.”

DARPA also wants warfighters and intelligence analysts to know what foreigners are saying. Today, DOD depends on linguists to translate information, but the process is slow and there aren’t enough linguists. The agency is developing a system capable of directly translating Arabic into English in real time.

“The first step to finding hidden people and objects is to have good intelligence that cues us about their location,” writes Tether. DARPA has funded a program that can translate Arabic television news shows and newspapers into English “and alerts the warfighter to events of interest,” writes Tether. The system “is also being used to monitor the reactions of the region’s population to current events, promptly capture misinformation...and then quickly respond and correct inaccuracies in news reporting.”

DARPA is also developing a system to directly translate spoken Arabic into English and vice versa. This will allow military patrols at vehicle checkpoints to deal with the local population and to “quickly use what they might be told by locals about insurgents or suspicious activities.”

On the seas, DARPA has developed and deployed a system that automatically tracks the behavior of 100,000 vessels and allows the Navy to automatically monitor, investigate and intercept vessels “engaged in suspicious activity,” writes Tether. The system (called Fast Connectivity for Coalitions and Agents) was transferred to the Navy late last year and “reduces the time required to obtain detailed information regarding ships from hours to minutes.” Another system under development automatically learns the normal behavior of more than 100,000 vessels and then detects deviations and provides alerts on those vehicles that are heading to the wrong place.

DARPA is also working on a system of unmanned undersea vehicles to be located in busy ports that uses optical tags on vessels and allows for “covert two-way data exchange and tagging operations in friendly and denied areas,” writes Tether.

Rapid Strike

DARPA is developing a new hypersonic vehicle that will reach anyplace in the world within one hour. The Blackswift hypersonic cruise vehicle has been successfully tested in high-speed and low-speed wind tunnels. By the end of 2012, DARPA plans to have the

(Continued on page four)

DARPA's Portfolio... (From page three)

Blackswift take off under its own turbojet power from a runway "accelerate to Mach 6 under combined turbojet/scramjet propulsion and land on a runway," writes Tether in his congressional testimony.

DARPA is also developing a high-altitude vehicle that can stay aloft for long periods of time and move over any spot on the earth within an hour. The so-called "Rapid Eye" aircraft "can be put on existing space launch systems, withstand atmosphere re-entry, and provide efficient propulsion in a low-oxygen, low-speed environment," writes the DARPA director. "Rapid Eye's response time will be hours, not days."

Another aircraft design under development, the Oblique Flying Wing, intends to be a fuel efficient X-plane that will demonstrate a long tailless supersonic flying wing.

DARPA is developing a system to refuel unmanned aerial vehicles allowing them to stay aloft for up to five years. It is developing an unmanned helicopter designed to hover at high altitudes for up to 20 hours and provide intelligence, surveillance and reconnaissance, targeting, communications, data relay and even the ability to re-supply forces in the field. Unmanned aerial vehicles are experiencing an infusion of technology. DARPA's Vulture program is developing an aircraft that can operate continuously without being refueled for over 44,000 hours using solar cells and energy storage systems. The program "reflects a fundamental change in the nature of airborne surveillance" by providing surveillance over a country-sized area "while at the same time providing an unblinking eye over a critical target, monitoring that target night and day, day in and day out, month after month," writes Tether.

Health Systems for Soldiers

DARPA is working on dozens of programs in the health arena, including the ability to identify biological pathogens used as weapons, and to manufacture millions of doses of "definitive therapy in less than 16 weeks after a pathogen has emerged."

It is looking at how to evaluate and treat brain injuries caused by repeated small blasts and large blasts. It is developing products that can cool soldiers in the desert; one being a cooling glove that applies a slight vacuum to the palm. "Cold water circulates through the grip, and, as a result, large amounts of blood can be rapidly cooled, maintaining normal body temperature even in extreme heat," Tether explains.

DARPA has developed a "natural antioxidant" called Quercetin that has proven its ability to reduce viral illness like colds and the flu after

physical exertion. The agency is developing an alternative to the use of morphine as a painkiller because of its impact on an injured soldier's cognition and body functions. "Instead, DARPA is pursuing capabilities to protect cognition by blocking the pain receptors right at the injury site to prevent them from firing and sending a pain signal to the nervous system. This will help a soldier remain alert in dangerous situations."

DARPA is developing a portable device that would stop deep internal bleeding using a high intensity focused ultrasound "to detect, locate and coagulate deep internal bleeders," says Tether.

It is developing automated respiratory devices to help wounded soldiers in the field and a compact CAT scan that can be used in a Stryker vehicle. It is researching wounds, trying to "replace nature's process of [recovery] through fibrosis and scarring with true 'wound healing' by regenerating fully differentiated, functional tissue at the wound site," writes Tether.

DARPA is researching new prosthetic arms and hands that can be controlled by the brain "and be used exactly as a natural limb, providing dexterity and sensation equivalent to a natural hand or arm," according to Tether. The devices DARPA has funded are undergoing clinical trials and enable "many degrees of freedom for complex grasping and individual finger movements, while being rugged and resilient in all environments."

In the area of solar energy DARPA is developing photovoltaic modules that can convert more than 50 percent of sunlight into electricity. This goal "appears well within reach" and can "dramatically reduce the battery load on soldiers and on the logistics pipeline," writes Tether. If the PV module is commercialized it can lead to the generation of solar electricity at \$1 per watt and lower.

'Apollo' Program Needed For Clean Coal

The federal government needs to "embark on the equivalent of the Apollo Project to develop the key technology to generate near emissions-free electricity from coal," says Kraig Naasz, president of the National Mining Association. Speaking at a recent meeting of the United States Energy Association at the National Press Club in Washington, Naasz said policymakers should not prescribe controls on greenhouse gas emissions from coal-based power plants until there is commercially viable technology already in place to control those emissions.

"A technology pathway should be built before we consider mandatory carbon controls," said Naasz. "Specifically, we should remove regulatory impediments to improved power plant efficiency and accelerate funding for the development and deployment of carbon capture and storage technology."

The "wrong approach" is the current bill sponsored by Sens. Joe Lieberman (I-Conn.) and John McCain (R-Ariz.) that would prompt power plants to switch from coal to natural gas. "The bill would accelerate the nation's deindustrialization, cost up to 2.3 million jobs, raise wholesale electricity prices as much as 65 percent by 2015 and cost the average family of four about \$3,500 per year," says the Mining Association chief. "The U.S. mining industry does not quarrel with the objective of addressing greenhouse gas emissions, only to the means some propose for dealing with this issue — especially if they ignore technology."

Electronics Mfg. Initiative Seeks Industry Participation

U.S. and foreign companies are being invited by the International Electronics Manufacturing Initiative (iNEMI) to review the roadmaps that are being developed for dozens of emerging technologies. "The roadmap workshops are open to industry and provide a good preview of what will be in the various roadmap chapters," says Cynthia Williams, director of communications for iNEMI. Companies do not have to be members of iNEMI to participate, but can get an in-depth view of the findings to date. The North American workshop is scheduled for May 14 at iNEMI headquarters in Herndon, Va. The European workshop will be held on June 18 in Leuven, Belgium; and the Asian workshop is scheduled for July 28 in Shanghai, China. The cost to attend is \$300, which includes receiving a copy of the 2009 roadmap when it is published in March 2009. To register for the North American workshop, go to http://www.inemi.org/cms/calendar/2009_RM_NA_May08.html.

Here are the 2009 roadmapping areas:

- **Portable/Consumer:** High-volume consumer products for which cost is the primary driver, including handheld, battery-powered products driven by size and weight reduction.
- **Office/Large Business Systems:** Products that seek maximum performance, with cost as a secondary consideration.
- **Netcom Products:** Products that serve the networking, datacom and telecom markets and cover a wide range of cost and performance targets.
- **Automotive Products:** Products that must operate in an automotive (i.e., harsh) environment.
- **Medical Products:** Products that must operate within
 - a high reliability environment.
 - Business Processes/Technologies
 - Component/Subsystem Technologies
 - Product Lifecycle Information Management
 - Semiconductor Technology
 - Connectors
 - Energy Storage & Conversion Systems
 - Interconnect Substrates - Ceramic
 - Interconnect Substrates - Organic
 - Mass Data Storage
 - Optoelectronics
 - Organic & Printed Electronics Technology
 - Packaging
 - Passive Components
 - RF Components & Subsystems
 - Sensors
 - Solid State Illumination (new for 2009)
 - Design Technologies
 - Environmentally Conscious Electronics
 - Modeling, Simulation & Design Tools
 - Thermal Management
 - Manufacturing Technologies: Board Assembly; Final Assembly; Test, Inspection & Measurement

Feds To Hold Competing Competitiveness Events

The National Summit on American Competitiveness, the latest federally sponsored "big thinker" event similar to others held in previous years, will be held on May 22 in Chicago. The conference is being organized by Commerce Secretary Carlos Gutierrez and includes few contrarians to current economic and technology policies that have helped lead the United States into its present economic slump.

"When you say it's the same cast of characters, the reality is we're trying to target the people who are most engaged in these issues who have something of value to contribute and people that other people want to hear," says Commerce Department conference organizer Kelly O'Brien. "There is a certain reality of wanting to move the agenda of competitiveness forward and...the lineup is of people who can move that ball forward."

Steven Chen, the 27-year-old billionaire founder of YouTube "is going to attract a whole new class of young entrepreneurs, but he's not singing from the choir," says O'Brien. One of the focus areas will be taking advantage of free trade agreements.

The conference is not related to the one that was required in the America "COMPETES" Act of 2007. That event will be held on August 19, 2008, in Oak Ridge, Tenn., and is being organized by the White House Office of Science and Technology Policy. The legislation mandating the "National Science and Technology Summit" calls on the White House to examine the health and direction of the science, technology, engineering and mathematics enterprise, followed by a report 90 days after the event.

Registration for the May 22 Chicago conference to be held at the Fairmont Hotel is available at <http://www.americancompetitiveness.com>

Among the speakers:

- Carlos Gutierrez, Secretary of Commerce
- Haley Barbour, Gov. of Mississippi
- Craig Barrett, Chairman of the Board of Intel
- Maria Bartiromo, Anchor of CNBC
- Steven Chen, Co-Founder of YouTube
- Richard Daley, Mayor of Chicago
- John Engler, President of NAM
- John Koten, Editor of Mansueto Ventures
- Steve Odland, CEO of Office Depot
- Jim Owens, CEO of Caterpillar
- Henry Paulson, U.S. Secretary of Treasury
- Michael Porter, Professor at the Harvard Business School
- Steve Preston, Administrator of the SBA
- Mike Sanford, Gov. of South Carolina
- Carl Schramm, President and CEO of the Kauffman Foundation
- Susan Schwab, Ambassador, United States Trade Representatives

NAM And Congress...

(Continued from page one)

Harriss 347 U.S. 612], holding that the minimum burdens that such disclosure imposes are far outweighed by the vital national interests in preserving the integrity of our governmental processes,” writes the congressional legal team led by Morgan Frankel, the Senate’s Legal Counsel and lawyers representing defendant Lorraine Miller, clerk of the U.S. House of Representatives, in its defense of the new law. “As experience under the prior law revealed, the [NAM] challenged provision is integral to achieving the important goals of lobbying disclosure because it prevents organizations from hiding their lobbying activities from public disclosure simply by directing such lobbying through another entity.”

The new law does not ban or restrict lobbying by coalitions or associations, but requires that they disclose “the interests behind their lobbying.”

Engler argues that “everyone knows who we are and which industries we represent” and that the law provides a “classic example of legislators aiming at one target — stealth lobbying campaigns — and hitting another. Does anyone really consider the NAM a ‘stealth organization?’” he asks.

NAM says it is engaged in lobbying on contentious issues from global warming, nuclear power and labor relations that could “provoke responses beyond civil debates” and could lead to “boycotts, political pressure, shareholder suits of other forms of harassment” if its members involved in such lobbying activities were forced to be disclosed.

Members “will wish to avoid linkage to the association’s activities on particular issues,” states the NAM lawsuit. “Members that are concerned about the possibility of disclosure...will limit their support for and participation in the NAM to the extent necessary to avoid the risk of being named in the NAM’s” lobbying disclosure reports.

NAM members are already “questioning whether continued support for and participation in core petitioning, speech and associational activities will require disclosure,” says the NAM lawsuit. NAM “is unable to provide clear guidance to its members as to what activities will or will not require public disclosure.”

Lawyers for the House and Senate argue that public laws dating back to 1946 require those attempting to influence the passage of legislation be disclosed by “name and address; the name and address of the client for whom they work; how much they are paid and by whom; all contributors to the lobbying effort and the amount of their contribution...” etc., as explained initially in the Legislative Reorganization Act of 1946 (Public Law No. 79-601). In 1995, Congress overwhelmingly passed the Lobbying Disclosure Act to close loopholes in that law, followed by the 2007 “Honest Leadership and Open Government Act,” which included further provisions for the disclosure of

“organizations that actively participate in lobbying coalitions and associations.”

The provisions of the new law require disclosure by April 15 of this year of all individuals and company members of trade associations that contribute “more than \$5,000 to the registrant or the client in a quarter period to fund the lobbying activities of the registrant and actively participates in the planning supervision, or control of such lobbying activities.”

The Senate and House lawyers say NAM’s challenge “fails as a matter of law.” Under previous court decisions “NAM is capable of determining which of its meetings, committees, and planning sessions involve preparation for lobbying and can appropriately disclose those members organizations that are actively participating in planning, supervision or controlling its lobbying activities as defined by the law. Indeed, for 12 years, the NAM has been required to determine what constitutes ‘lobbying activities...’ ”

The \$5,000 quarterly dues paid by NAM members for lobbying means NAM would “surely...not” have to release the names of a majority of its 11,000 members, says the congressional legal brief. “Congress thus carefully narrowed the disclosure requirement to avoid being over inclusive.

“Plaintiff [NAM] has made no showing of any prospect of harassment and retaliation against its organization members that even remotely approaches the evidentiary showings” made in previous cases involving harassment suffered by members of unpopular associations such as the NAACP or the Socialist Workers 74 Campaign Committee, argue the congressional lawyers. “Plaintiff relies on the Declaration of Jan Sarah Amundson, Senior Vice President and General Counsel of the NAM (“Amundson Decl.”) in support of its allegations. In that declaration, Ms. Amundson avers that “[t]he NAM regularly lobbies on a variety of hot-button issues...that may lead to adverse consequences for members identified as ‘actively participat[ing]’ in such efforts.” Those allegations “are woefully short of demonstrating the reasonable probability of serious harassment and retribution from disclosure of a member’s involvement with the NAM and its lobbying activities,” according to the congressional filing.

NAM already discloses 250 of its member companies that sit on its board of directors. “Despite public disclosure of these organizations, the NAM has offered no evidence of past incidents suggesting that being publicly disclosed as a member of the NAM imposes upon a company a substantial risk of serious harassment and retaliation,” argue the congressional lawyers.

NAM’s suit (No. 08-cv-0208 (CKK)), is brought against U.S. Attorney Jeffrey Taylor, Nancy Erickson, Secretary of the Senate, and Lorraine Miller, Clerk of the House of Representatives. An initial ruling is expected by April 14 by District Court Judge Colleen Kollar-Kotelly.

GUEST EDITORIAL: MAPI'S ERNEST PREEG

IMF Has An Opportunity To Address Currency Problem

The mid-April International Monetary Fund ministerial meeting will focus on exchange rate policies and the issue of misaligned currencies in particular. The undervalued Chinese yuan will get the most attention, but, unfortunately, discussion will likely be limited to aggregate measures, such as the overall Chinese trade and current account surpluses and central bank purchases of foreign exchange.

This broadly based discussion obscures the most important strategic shift in trade over the past several years, namely the rapid rise of China to become the number one exporter of manufactures. In 2000, U.S. exports of manufactures were more than three times those of China, at \$690 billion compared to \$224 billion. Chinese exports then quintupled in only seven years to \$1,157 billion in 2007, substantially higher than the \$982 billion for the United States. In parallel, the Chinese trade surplus in manufactures increased tenfold, from \$45 billion in 2000 to \$444 billion in 2007, while the U.S. deficit rose from \$324 billion to \$499 billion.

The most rapid growth in Chinese manufactured exports, moreover, has been in high technology industries, which now account for the large majority of exports. In 2007, Chinese exports of machinery and transportation equipment were \$57.7 billion, compared with \$11.5 billion of apparel and textiles and \$8 billion of toys.

The Chinese surplus and U.S. deficit in manufactures, both of unprecedented size by far, constitute a serious imbalance in export competitiveness directly linked to the currency misalignment. Manufactures account for 70 percent of total merchandise trade and are highly price elastic, meaning that changes in exchange rates produce relatively higher percentage changes in the quantity of exports and imports.

Trade in manufactures is also

politically sensitive. A large trade deficit means less jobs in politically powerful industrial centers, with a rule of thumb for the U.S. economy of one million jobs related to a \$100 billion trade deficit. The \$499 billion U.S. deficit in manufactures in 2007 is clearly the principal cause of the recent loss of public support for a liberal trade policy.

Most importantly, the manufacturing sector is central to the strategic objective of technological innovation and development. Over 90 percent of civilian research and development and new patents derive from the manufacturing sector and closely integrated engineering and other technology-intensive services.

This is the vital context within which the currency misalignment issue needs to be addressed. Chinese economic strategy explicitly places top priority on the rapid development of advanced technology industry and indigenous technological innovation, with the undervalued exchange rate playing a major role for achieving very high export-oriented growth for advanced technology industries.

The IMF proscribes "currency manipulation" to gain an unfair competitive advantage, and such manipulation is defined most precisely in terms of "protracted, large scale" purchases of foreign exchange by the central bank. Nothing in IMF history comes close to the scale of Chinese purchases in recent years.

The ministers in April are thus faced with an issue of great consequence and urgency. Chinese

central bank purchases in 2007 were close to \$500 billion and will almost certainly rise further in 2008, as will the trade surplus in manufactures. The unfair competitive advantage from Chinese currency manipulation, moreover, is broadening in geographic scope as the declining dollar makes other markets more attractive for Chinese exporters. In 2007, for the first time, Chinese exports, almost all manufactures, were larger to the EU than to the United States, and the Chinese trade surplus with the EU is growing more rapidly than that with the United States.

The stage is indeed set for decisive action at the IMF meeting, but there is little optimism that anything significant will happen. One problem is that the IMF, unlike the World Trade Organization (WTO), lacks a dispute settlement and enforcement procedure for ensuring compliance with obligations. A member can be judged to have a misaligned currency in violation of currency manipulation provisions, but remedial action is essentially on a voluntary basis. The benchmark for remedial action for presumed currency manipulation by China is reduction and ultimate elimination of central bank purchases, and yet the purchases continue to rise.

If the IMF is unable to make credible headway on currency misalignment, the political pressures for unilateral action will grow, most likely in the direction of protectionist actions to offset the impact of misaligned currencies. Far better would be actions by finance ministers to reduce mercantilist central bank purchases and permit exchange rates to become more market-oriented.

Ernest Preeg is Senior Fellow in Trade and Productivity at the Manufacturers Alliance/MAPI, and author of the new book "India and China: An Advanced Technology Race and How the United States Should Respond," published by the Manufacturers Alliance/MAPI and the Center for Strategic and International Studies, March 2008.

Defense Science Board On Energy... (Continued from page one)

sustained focus by senior leadership to change the culture that assumes readily available energy, or to create a culture that inherently recognizes the clear linkage between energy productivity and combat effectiveness," the report states. "The Task Force found this to be one of the most significant barriers to changing wasteful practices."

DOD remains stuck in a culture of belief that energy is cheap and plentiful, and changing this mindset "is one of the most difficult challenges facing the Department..." It can no longer remain "oblivious" to the growing global environmental movement associated with global warming.

In 2001, the DSB recommended that the DOD reengineer its business processes to address issues associated with high fuel demand that were compromising operational effectiveness. The new Task Force study says "these situations have not changed" and that DOD has done little in the interim.

There is nobody within the Defense Department in charge of looking at energy as a strategic issue across the organization and throughout the military services. DOD is "uninformed about [its] fuel burden," says the report. "There is no unifying vision, strategy, metrics or governance structure with enterprise-wide energy in its portfolio," says the DSB Task Force. "No one office is in charge: there are few objectives or metrics, and no one is accountable.... Information collected about energy end-use is inadequate for purposes of establishing a baseline, establishing metrics or making management decisions."

The panel heard over 100 presentations on technologies that can address all categories of energy end use, "covering the full range of maturity from basic research to ready-to-implement," it says. "Many appear quite promising, but DOD lacks accepted tools to value their operational and economic benefits. As a result, cost effective technologies are not adopted, science and technology programs significantly under-invest in efficiency relative to its potential value, and competitive

prototyping to accelerate deployment of efficiency technologies is not done."

Supplying DOD's war machine with fuel has proven to be a high-risk endeavor and the best way to reduce this risk is by reducing the demand for fuel, says the Science Board task force. DOD "is not currently equipped to make informed decisions on the most effective way to do so," says the study.

The task force recommends that DOD start a program aimed at reducing fuel demand and assessing progress toward that goal. DOD needs to start using metrics to determine the full costs associated with its heavy dependence on energy and the risks involved with that dependence. It needs to put in place a comprehensive energy plan that addresses its fixed installations

including its defense industrial base plants and systems that "will reduce the likelihood of prolonged loss of critical missions due to commercial power and other critical national infrastructure outages."

DOD is investing little or no money in energy research and development, which also needs to change. The panel says DOD needs to boost funding for basic energy research "to develop new fuels technologies that are too risky for private investment and to partner with private sector fuel users to leverage efforts and share burdens." It recommends that DOD's acquisition office "re-establish early competitive prototyping for key Acquisition Category 1 programs to accelerate the adoption of high payoff innovative energy efficient technologies and concepts."

(Continued on page 11)

QUOTABLE:

"A review of the consequences of the August 2003 [East Coast electricity] outage is instructive. The outage caused cascading failures of critical infrastructure. Some areas lost drinking water because pumps or treatment systems or both failed. In at least one case, a chlorine leak at a chemical plant caused by the outage went undetected for nearly a week. Sewer systems failed as well, causing raw sewage to spill into waterways, including the ocean and rivers. People became sick from consuming unclean water. Rail service was significantly curtailed or stopped completely along Amtrak's northeast corridor, on Long Island and in Canada. Air travel was affected because passenger screening stopped at most airports, electronic ticketing did not work and air traffic could not function reliably. Gas stations closed because they could not pump fuel, hindering not only commutes, but also transportation of goods. Price gouging took place in some instances and gas lines were reminiscent of those in the 1970s and early 1980s. Many oil refineries on the East Coast shut down. Cellular communications were disrupted because of inadequate backup power at communications towers and because customers could not recharge their phones. This overwhelmed some landline systems and those with only cordless phones could not recharge them either. A number of television and radio stations went off the air broadcasting, some Internet service providers were taken down and desktop computers not on backup power did not work. Large numbers of factories closed. And because of the interconnectedness of supply chains, many not directly affected by the outage had to close or slow because of supply problems. Border check system did not work and when 'just-in-time' supply systems depend on these trucks some industries took over a week to return to full production. Also, looting incidents were reported, though not to the level seen in New York City during the 1977 blackout. Overall, the nation lost output, some 50 million people in the U.S. and Canada were adversely affected, and U.S. national security was compromised. Because DOD faces substantial risks to its mission via grid and other critical infrastructure vulnerability, it must find a means to manage these risks."

— From the Defense Science Board Task Force on Energy Security report entitled "More Fight — Less Fuel," March 2008.

New Chairman of Aerospace Industries Association Explains The Strategy For Offshore Outsourcing

Many U.S. industrial sectors have been struggling over the past seven years, but the aerospace industry isn't one of them. High demand around the world for both commercial and military aircraft and space systems has led to a U.S. order backlog of \$380 billion, a growth of \$73 billion in 2007 alone. Sales last year totaled \$189 billion, a new record.

Employment reached 637,000. Exports increased by 8 percent to \$92.5 billion. Imports surged by 18 percent to \$36 billion, but the trade balance was a positive \$56 billion, rare among U.S. industrial sectors. Military sales last year totaled \$55 billion, up 11 percent from 2006, while civil aircraft sales reached \$53 billion, including business jets, general aviation aircraft, helicopters, engines and components and shipment of 443 large commercial transports.

The good times are here, but "we don't take this for granted," says Aerospace Industries Association's president Marion Blakey, who joined AIA last year after a five-year term as administrator of the FAA. "It may not be this way in the future."

Blakey and newly appointed AIA chairman Clayton Jones, chairman, president and CEO of Rockwell Collins, recently met in AIA headquarters in Rosslyn, Va., with a group of reporters over lunch. The event focused on AIA's desire to have aerospace issues discussed during the 2008 election season under the banner of "Keeping America Strong: Advance U.S. Global Leadership in Aerospace and Defense."

Question: How is foreign offshoring impacting the United States aerospace industry?

Jones: This is a mixed situation. Companies that primarily do work for the Department of Defense are strained in the amount and ability to go offshore because of the national security — the classified — nature of their work. There are very clear rules and restrictions for doing that. So that component has not enjoyed much benefit of outsourcing and they're unlikely to do much.

On the commercial side, it's a much different situation because they don't have those same restraints. Like my company, they're realizing that we operate in a global economy and in a global economy, you have to go and find the best of breed doing what you need to be doing.

As an example, in India probably every single company that is doing business in commercial aviation either has some activity or an entity going on in India primarily to take advantage of the tremendous workforce that exists there. India graduates probably eight to 10 times more engineers than our country does and, yes, pays them at a lower rate.

I have been there and I have walked through those technology centers and I see computational fluid dynamics and finite element modules being used. I don't see a country that appears to be third world: it's first world when it comes to some electronic and software technology, and for us not to have access to that technology will hamstring our ability to operate in this economy.

Where it makes sense, we'll do it. All the more reason to make sure there are no public policy issues in place to make it less attractive for a company that does business in the United States to go somewhere else. That is where our focus is going to be.

Is there going to be a growth in outsourcing? There is an inevitability to that. Being able to move to [where there are] plenty of sources for labor and lower cost in order for us to be competitive worldwide will be part of the history of the United States when it is written. So

long as we see our European competitors doing it and our Asian competitors doing it, I think we have to [as well].

Q: AIA says one of its key goals is for the United States to maintain its leadership in aeronautics and aviation, yet at the same time companies like yours are infusing the world with the ability to compete effectively with the United States.

Jones: I disagree in part with the thesis of your question because you're assuming that all leading-edge technology that we use and the highest value add is being offshored, and that is not the case.

Let me take the example of my company. We are required by the FAA when we certify our equipment to do verification and validation of the software that is being written. The creative process is the writing of the software but the verification and validation is not a very creative process. In fact, we have engineers who prefer not to do that. If we asked them to do that they might go somewhere else and be involved in more creative development processes.

We took the verification and validation activities and moved it to China and India where they are happy to do it. In that case, that is probably the lowest technology thing we ask our engineers to do, but it's being done to free up our engineers who we are struggling to source to do work that they would prefer to do. The activity rate seeks its own level.

"You can fight this global inevitability or you can smartly address this global inevitability..."

(Continued on page 10)

AIA Chairman...*(From page nine)*

So when I talk about investments in research and development, investing in next generation technologies that will require highly trained people out of the excellent universities to do that work, you won't see much of that outsourced. What you'll see is the lower-level less value added competencies being outsourced. That is the inevitability of what we've seen in many industries and to fight that inevitability only makes our industry less competitive. I don't think those two things are mutually exclusive.

Q: You initially said you saw these incredible engineers in India doing CFD and other cutting-edge work and then you said most of the cutting-edge work is not going there.

Jones: When I see CFD being done over there, they have the capability. CFD models are available around the world and if you learn and train in United States universities — because American students are not taking those slots — and then they take that competency back to India or China with the software capability, then they are going to develop that capability.

We can ignore that going on, but if you look at what it's going to take to reverse that trend, everything that would have to be put in place would be protectionist and that has never protected the United States from the loss of industry. The steel industry and textile industry tried to be protected.

My view is you can fight this global inevitability or you can smartly address this global inevitability. The way my company thinks about it is to always stay on the cutting edge — to be better than they are while they are learning to do what you do. That creates a competitive environment, but competition is good for industry, it's good for the taxpayer and it's good for the consumer.

What you do when you see these trends go into place, is you bring some very smart public policy people together to put policies in place that incent the right behavior. When you incent United States companies through an R&D tax credit to do R&D in this country on leading-edge products for our people to learn on, that is a positive response. When you try to promote science and math programs to get U.S. kids to go into engineering math and science, that is a positive outcome that fights the inevitability of hordes of Chinese and

Indian nationals as seeing that as the path to a greater life. They're going to do that anyway whether we do anything or not. The issue is are we going to respond in this country with positive incentives to get our people and our jobs and our technologies ahead of what the world competition is? Protectionism is no incentive. It is a Band-Aid.

Q: So then what do you think when you look at the aeronautics R&D budget at NASA and see that it's gone down by half and the President's proposed budget for next year is \$60 million less for aeronautics R&D?

Jones: I think that is a travesty. I think that we need this association to advocate policies to have that restored. There have been efforts to work with industry to work with Congress to plus that up every year and we've been successful plussing it up. It's still not going in the right direction, but it's not because we're not working hard to reverse that. It says we have to work harder and present a better case to do that, and it's something that we'll work very hard on and we need all of your help [in the press corps] to get the word out.

Ohio To Borrow \$1.7 Billion To Rebuild Its Economy

Ohio Gov. Ted Strickland has proposed a \$1.7-billion stimulus package for the state intended to create 80,000 new jobs "and lay the foundation for future economic prosperity." The state will issue bonds to fund work in the following areas:

- Advanced and renewable energy, solar, wind and clean coal: \$250 million;
- Improved roads, rails and ports to support distribution and logistics: \$150 million;
- Development of bioproducts that use renewable sources instead of petroleum to create plastics and other products: \$100 million;
- Biomedical products development: \$200 million;
- Ohio Main Streets Renewal Initiative to spur development of downtown neighborhoods: \$200 million;
- Clean Ohio Fund aimed at reclaiming brownfield sites and to preserve farmland: \$400 million;
- Ohio Public Works Commission to help fund roads, bridges, water and sewer projects: \$400 million.

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Science Board Recommends A Light-Weight Vehicle To Replace The HUMVEE

The Department of Defense should initiate a program aimed at developing and deploying a replacement for the HUMVEE that is lightweight and more fuel efficient but can protect its occupants from improvised explosive devices, according to the Defense Science Board. The current HUMVEE gets 10 miles to the gallon, but once it is "up-armored" to protect troops gas mileage drops to only four miles to the gallon, significantly reducing its range. "The additional weight puts the vehicle beyond the design limit for its suspension, brakes and tires," notes the DSB in its report on DOD energy use. "This results in frequent tire blowouts, vehicle rollovers and other accidents with serious or fatal consequences for soldiers."

The DOD has two programs to replace the HUMVEE, but both would produce vehicles that are much heavier and would send "battlefield fuel demand in the opposite direction it needs to go," says the DSB Task Force on DOD Energy Strategy.

There is a better alternative to the Joint Lightweight Tactical Vehicle and the Mine-Resistant Ambush Protected Vehicle programs currently under development: the Badenoch vehicle developed at the Georgia Tech Research Institute with funding from the Office of Naval Research. This vehicle uses lightweight materials that reduce its weight to less than half of an up-armored HUMVEE. It is designed using concepts developed and deployed by NASCAR to protect drivers in massive high-speed accidents, by using a "blast bucket" concept that "vastly improves protection against blast and projectiles," says the DSB.

The Badenoch vehicle carries as many soldiers and provides them with better ability to fight from their vehicle. It "could be fitted with hybrid electric and Opposed Piston Opposed Cylinder engine technology to achieve a 50 percent increase in fuel efficiency in wartime conditions and a 200 percent increase in garrison or local use," the DSB task force notes. "The fuel savings alone would result in reduced logistics needs and significant gains in range. Moreover, the blast bucket concept would...provide [soldiers with] more combat options. If the concept works as designed, it would greatly reduce the ability of enemy combatants to hinder light mobility assets and to inflict casualties on U.S. forces.

"The Task Force concluded that this problem of an efficient, survivable, lethal ground combat system is of such high importance to DOD's ability to fight, that the next generation vehicle should be the subject of intense development, design and competitive prototyping. There are many examples in the areas of commercial vehicles, racing and aerospace where survivability has not required more mass. Armor constitutes half the total gross vehicle weight of some variants. The Task Force was not satisfied that sufficient creative effort has gone into employing innovative shock deflections, dispersion, absorption and packaging concepts to light vehicles to address the problem of protecting occupants against mines, IEDs, rocket-propelled grenades and small arms."

DOD Energy Use...

(Continued from page eight)

The military can also start implementing simple energy conservation practices. The military consumed 3.8 billion kilowatt-hours of electricity in 2006, or about 1 percent of total U.S. generation, to supply 577,000 buildings and structures that are worth \$712 billion. "The Task Force was struck by the contrast between the energy demand data collected by DOD and that collected by another very large energy consuming entity — Wal-Mart," the report notes. "If a single freezer cabinet door remains open too long at an individual store, an alarm is triggered at Wal-Mart's headquarters in Bentonville, Ark. Wal-Mart uses detailed demand and consumption data to inform corporate-wide decisions that affect energy demand including capital investments, maintenance policies and operational procedures." The DOD has no such system in place.

The military can start implementing simple energy conservation practices. The Air Force should avoid tank "top off," use single engines when taxiing, avoid using afterburners, plan more efficient flight routes, use simulators, refuel in flight only when absolutely necessary, move fuel by air as little as possible and plan missions so that there isn't the need to dump fuel.

Ground forces can use photovoltaics to recharge lightweight portable batteries and reduce air conditioning costs through the use of insulation in tents. DOD facilities can start managing thermostat settings, use compact fluorescent light bulbs or LEDs, use occupancy sensors to turn lights on and off and turn off computers that don't need to be on all day and night. DOD should also be required to buy only "Energy Star" products.

The Army based in the desert could get creative about how it uses energy. Even when it's 120 degrees F. outside, the temperature 10 to 20 feet below the surface of the ground is usually 70 degrees F., the panel notes. "By circulating a working fluid from the surface to this depth and back, cooling can be provided to supplement or, in some cases, eliminate the need for conventional air conditioning. Coupled with insulation for tents and renewable solar and wind power to circulate the coolant and operate fans, the process can be self sustaining, requiring no fuel powered generators at all. The example illustrates the power of coupling efficiency with renewable energy sources."

The DSB report discusses dozens of technologies for energy efficiency and alternative supplies in its report, located at <http://www.acq.osd.mil/dsb/reports/2008-02-ESTF.pdf>.

Feds To Focus On Manufacturing Research: Hydrogen, Nanotech & Integrated Info Systems

The federal government's Interagency Working Group on Manufacturing Research and Development has issued its long-awaited report on topics for the federal government's manufacturing research programs. Its "Manufacturing the Future — Federal Priorities for Manufacturing R&D" report says there are three areas in which the government needs to focus its limited resources: hydrogen, nanomanufacturing and intelligent and integrated manufacturing. The document grew out of a public forum held in March 2005.

The three areas of focus "were selected based on their current and future importance to the nation's economic and national security," says the report. "The areas also leverage scientific and technological advances that are enabling the transformation of knowledge and materials into products of significant value to society."

Hydrogen manufacturing research is funded by the five-year \$1.2 billion "Hydrogen Fuel Initiative" started in 2003. But after five years of work, the report says there are still "many obstacles" to overcome before the United States develops the capability to shift off of fossil fuels to a hydrogen-based system. Much of hydrogen's potential rests on lowering the costs of hydrogen production and delivery, storage systems, and the current methods of producing fuel cell systems "ensuring near-zero defect standards in manufacturing" so that components are safe during the life of the product. "[A]chieving the vision of a hydrogen economy will depend largely on the nation's manufacturing capabilities, that is, on whether U.S. industry can develop high-volume, cost-effective processes for making the fuel cells and related production, delivery and storage technologies now in their infancy," says the Interagency Working Group.

The Department of Energy is taking the lead in this area. In 2007,

it issued a request for proposals for manufacturing hydrogen systems. It will award \$38 million for projects "pending future congressional appropriations."

The report does not make hydrogen production seem like a promising near-term endeavor — citing the need for "revolutionary advances." Nor does it indicate that much progress has been made. "Standardization of design has not been established for hydrogen production facilities," according to the report. "In turn, design for manufacture has not been applied to foster standardization of the subsystems....The nation lacks the capacity for producing small-scale systems for distributed reforming of natural gas in quantities sufficient to help initiate the transition to widespread use of hydrogen technologies."

In the area of nanomanufacturing, basic questions have yet to be answered, such as the potential environmental implications of the technology. "What will be the skill sets required for a technically literate workforce and the corresponding infrastructure for education?" the working group asks. "Will products be high-volume, low-

value; or low-volume, high value; or a mix; and will the new industries be transformative?" The Interagency Working Group describes eight federally funded centers that have been established to research and commercialize nanotechnologies.

Lastly, the report describes initiatives needed to connect the manufacturing enterprise in a seamless fashion. It outlines the need for work on large-scale networking, cyber security, high-end computing infrastructure and applications, human-computer interaction, supply chain software interoperability and other areas of opportunity.

"On the basis of a survey of manufacturing industry roadmaps as well as interactions with industry representatives at the IWG public forums and other related workshops, the IWG has identified four technical areas for R&D that pose significant challenges: predictive tools for integrated product and process design and optimization; intelligent systems for manufacturing processes and equipment; automated integration of manufacturing software; and secure manufacturing systems integration."

Dell To Increase Its Purchases Of Chinese Parts & Components

Dell Computer, which had revenues last year of \$61 billion, purchased \$18 billion in parts and components from China last year, "more than any other computer systems company," says Dell in a press release issued in Hong Kong. That number will grow to \$23 billion in 2008. "The company estimates its spending in the country this year to contribute more than \$50 billion to China's gross domestic product and support more than two million jobs."

Dell has been operating in China for 10 years. It has two manufacturing plants in Xiamen, China; one to serve the Chinese market and the other to export products to Japan, South Korea and Hong Kong. The company also has one of its largest product design centers in Shanghai. Dell has 6,000 employees in China and is that country's third largest computer systems company. Late last week, this is the notice that appeared on Dell's English version of its Chinese Web site: "Please kindly be informed that Dell China English website has been shut down. You are now being redirected to Dell Hong Kong English website."