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### NextGen Airports 1AC

#### Plan

#### The United States Federal Government should accelerate a substantial amount of funding for the next fiscal year for its Next Generation Air Transportation System.

### NextGen Airports 1AC

#### Contention 1 is Solvency

#### Government needs to take a strong role to assure investors- the airlines are at a crossroads

Stephen Goldsmith et al. Harvard Kennedy School Zachary Tumin Harvard Kennedy School Fred Messina Booz Allen Hamilton March 2010 “Assuring the Transition to the Next Generation Air Transportation System A New Strategy for Networked Governance” Harvard Kennedy School Ash Center for Democratic Governance and Innovation http://www.ash.harvard.edu/extension/ash/docs/nextgen.pdf

American civil aviation hovers at a crossroads. NextGen—the Next Generation Air Transportation System—offers the promise of a new universe of flight efficiency: reduced delays and carbon emissions; smoother in-flight and on-ground operations; and far less vulnerability to the vagaries of airport congestion, weather, or human error in air traffic control. Properly and widely implemented, NextGen could remake civil aviation and save billions. FAA’s NextGen is thus one of the most significant efforts of cross-boundary transformation ever contemplated by the United States government and its industry partners. NextGen’s goal is to make civil aviation safer, more efficient, and better able to support the likely demands of air transport in the new century. NextGen calls for the introduction of a variety of advanced technologies and related, supporting changes to the operations and business processes of the national airspace system. To that end, Congress and FAA have committed to a 20-year, $20 billion NextGen effort. The future of the sky has arrived, yet it remains slow to realize, complex to move forward, and has much distance to go before it can be implemented and its benefits realized. The frustrations are palpable. “If I had a magic wand and I could wave it,” an industry executive told colleagues, expressing a widely held view, “I would ask for the President of the United States to make a declarative statement—and to back it up with the full force of the administration—that NextGen is a major national and international priority.”

### NextGen Airports 1AC

#### Expanded government investment in NextGen is key

Stephen Goldsmith et al. Harvard Kennedy School Zachary Tumin Harvard Kennedy School Fred Messina Booz Allen Hamilton March 2010 “Assuring the Transition to the Next Generation Air Transportation System A New Strategy for Networked Governance” Harvard Kennedy School Ash Center for Democratic Governance and Innovation http://www.ash.harvard.edu/extension/ash/docs/nextgen.pdf

The historic paradigm—and current practice—says that airlines pay for planes; government pays for infrastructure. Government has always underwritten air traffic control infrastructure—towers and runways, for example—as public benefits. The airlines have always equipped the planes. “Clearly,” one respondent observed, “government needs to pay for the FAA’s infrastructure or the infrastructure that’s necessary to deliver the service.” This includes radars, transmitters, ground infrastructure, and controllers who operate the system. The NextGen paradigm arguably shifts this equation: under NextGen, public benefit infrastructure relocates from the ground to the cockpit. With infrastructure moving to the cockpits, many believe that government should fund the capital improvements. After all, the very virtue of NextGen is that avionics in the aircraft are not just serving the airlines or the airplane operation anymore. They are serving the system—making it more capable and providing benefits across the board. This then became a case of supporting an important public benefit infrastructure that has moved from the ground to the plane. If the airplane is to become a central cog in the air traffic control system, should government not subsidize the required technology on par with subsidies for ground-based air traffic control equipment?

### NextGen Airports 1AC

#### Fast Tracking development of NextGen is key

National Aerospace Week, September 11-17, 2011. “Aerospace and Defense: Second to None,” http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

NextGen is essential to helping airlines return to profitability. It is critical for reducing fuel consumption and airplane emissions. Without NextGen, our national airspace will remain cluttered and inefficient and undermine the economic benefits of America’s commercial aviation industry. Excluding the costs of delays due to system inefficiency, failure to institute NextGen could cost the U.S. about $35 billion in annual economic loss by 2014 and as much as $52 billion in annual economic loss by 2024 — and that’s only in unmet demand and lost productivity. Businesses related to or dependent on aviation risk losing as many as two million jobs every five years if the nation doesn’t implement NextGen. The entire U.S. fleet of civil aircraft can be NextGen equipped in less than three years for less funding than has been committed to surface transportation infrastructure projects. Experts say with an equipped fleet and a commitment to accelerate supporting ground infrastructure, NextGen could be in place in five to eight years instead of 10 to 15. Full NextGen deployment requires the production and installation of hundreds of thousands of high-tech avionic products assembled by skilled workers in U.S. factories and maintenance stations in every state. Without these products, our National Airspace System cannot upgrade to satellite-based navigation and will lag behind systems in other countries. Building and deploying NextGen equipment, procedures and infrastructure could create approximately 153,600 jobs. 10 A viable aviation sector enhances economic activity in a wide number of industries outside aviation, including travel, tourism and industries that rely on just-in-time global inventories and shipping capability. Implications on the trade front are also important. Our strong competitive position in aerospace is being challenged by the European Union, Australia, Canada and other countries. China and India, which will witness the greatest growth in aviation travel for years to come, will look to either the United States or Europe for leadership as they develop their respective air traffic control systems. If the United States does not **promptly** deploy these technologies, opportunities for U.S. manufacturers and workers could be lost. Greening of Aerospace The aerospace industry knows it has an obligation to grow responsibly and it understands that environmentally sustainable growth is not only good for the planet, but also good for the economic health of the industry and the nation. Aviation is working diligently to develop better aircraft, technology and operating procedures to conserve fuel and reduce emissions. NextGen is a key enabler of environmental stewardship. Delays in today’s air traffic control system result in millions of gallons of fuel wasted annually — more than 4.3 million hours of delays in 2007 11 consumed an additional 740 million gallons of jet fuel, costing carriers more than $1.6 billion. 12 The delays produced approximately 7.1 million metric tons of carbon dioxide. NextGen operational procedures and implementing technology can help reduce emissions by enhancing engine and airframe technologies. NextGen will build on aviation’s progress in reducing CO2, which is particularly challenging given projected traffic growth and global concern about aviation’s effect on the environment. Innovative engine design, airframes, avionics and materials together have resulted in 90 percent fewer Americans exposed to significant aircraft noise and a 70 percent improvement in civil aviation fuel efficiency since the late 1960s. Innovation is driven by necessity, as fuel costs are the largest single expenditure for the airlines. Moreover, the industry is leading the way in research on sustainable alternative fuels. Besides the positive impact on the bottom line, there are obvious positive environmental impacts from these efforts.

### NextGen Airports 1AC

#### Advantage 1 is Economic Trade

#### The future of American growth is unpredictable – potentially on our way off the cliff.

Tai Adelaja, Russia Profile, June 21, 2012. “Anemic Global Growth,” http://en.ria.ru/analysis/20120621/174170969.html.

The panelists, many of whom come from developing nations, place the blame on big economies, like the United States, which some said has been running a dangerous experiment with the global economy. “Whatever is being said about the Eurozone crisis, the elephant in the room is the huge budget deficit in the United States, which continues to balloon,” said Cevdet Akçay, the chief economist of Koç Financial Services and Yapi Kredi. “The crisis that has now engulfed the global economy is structural and cannot be treated using stop-gap measures. But that’s precisely what the United States is doing as it tries to jumpstart its economy through further financial infusion and unrestrained borrowing.” The global economic space is chaotic and has been turned upside down by the three-dimensional threat to trade, finances and growth expectations, Akçay said. But while the United States might as well succeed, the American strategy is unlikely to work in the Eurozone economies because of their weaker demographics and the ongoing financial crisis, he added. The synchronous slowdown in global economic activity and the prospect that the United States could go off the so-called "fiscal cliff" at the end of this year are the greatest challenges facing policymakers, said Peter Ong, Singaporean Civil Service chief.

#### Relatedly, the airline industry is going to crash and burn, taking down global trade, too – overdependence on jet fuel and energy prices.

Tony Tyler, State of the Industry Speech, 68th Annual General Meeting, Beijing “Tony Tyler, IATA: Aviation is a complex global business. It’s not an easy one to manage,” Wednesday, June 13, 2012 http://www.traveldailynews.com/pages/show\_page/49882-Tony-Tyler,-IATA:-Aviation-is-a-complex-global-business-It%E2%80%99s-not-an-easy-one-to-manage

Aviation is a vital component of the global economy. We support 57 million jobs and $2.2 trillion in economic activity. Some 48 million tonnes of cargo with a value of $5.3 trillion was shipped by air. That’s over a third of world trade. The benefits of global connectivity touch virtually every modern business. With about 100 years of history, air connectivity has established itself as a powerful force for good in our world. And our potential is almost without limit. But, the state of our industry is fragile. State of the Industry Over the last decade airline revenues totaled $4.6 trillion. We were among the world’s fastest growing industries. But our best annual profit margin of the century so far was 2.9%. And the overall result has been a net loss of $16 billion. 2012 is another challenging year. We expect revenues of $631 billion but a profit of just $3.0 billion. That’s a 0.5% net margin. And that projection comes with some serious downside risks. The high price of oil is among the main reasons for our anemic global profitability. Oil prices have softened slightly. But we still expect an average of $110/barrel. That will leave us with a fuel bill of $207 billion-almost equal to the GDP of the Philippines or the Czech Republic. It will account for a third of our costs. And political risks could easily push the price higher. The biggest and most immediate risk, however, is the crisis in the Eurozone. If it evolves into a banking crisis we could face a continent-wide recession-dragging the rest of the world and our profits down. The industry’s profitability is balancing on a knife edge. If the bottom line worsens by even the equivalent of just 1% of revenue, our $3 billion profit very quickly becomes a $3 billion loss.

### NextGen Airports 1AC

#### Federal NextGen saves over a billion gallons of jetfuel.

MICHELLE LEE, Staff Writer for Press of Atlantic City, October 17, 2009 “Thousands of jobs linked to NextGen air traffic research site / with video & 3 related stories” http://www.pressofatlanticcity.com/news/top\_three/article\_5571b730-bb97-11de-8867-001cc4c002e0.html

When most people talk about big local business developments, they point to the Revel casino that's inching along in Atlantic City or to now-fallow Bader Field, which has become everyone's field of dreams. But the region's best economic bet soon may sit about 10 miles from the resort's Boardwalk, a world away from the gambling and glitz and relatively low-paying service jobs. The federal government is prepared to spend more than $15 billion to overhaul the nation's air traffic control system, essentially building an "Internet in the air" to replace a costly and inefficient ground-based system. And that could translate into creating at least 2,000 high-paying private industry engineering and technical jobs at the Next Generation Aviation Research and Technology Park, a new research center that is being developed on a 55-acre wooded parcel near the Federal Aviation Administration's William J. Hughes Technical Center and the Atlantic City International Airport in Egg Harbor Township. "The potential is enormous in so many positive ways," said U.S. Rep Frank LoBiondo, R-2nd, who helped secure some government funding for the project. "Any place in the country will kill to have this." LoBiondo, the project organizers and several public officials will break ground Monday for a research complex that is expected to eventually boost retailing, real estate and other support services. The ceremony marks the start of new road construction and preliminary site work, financed largely with public money. The NextGen Park is a joint effort of the Hughes Technical Center, the South Jersey Economic Development District, The Richard Stockton College of New Jersey, state and county government officials, and other organizations. The plans call for creating seven new buildings totaling 408,000 square feet of offices, laboratories and research facilities on a lot bounded by Amelia Earhart Boulevard and Delilah Road. To make all of these hopes become a reality, the research park will require aviation-related businesses to become tenants at the new office complex. The project would also need about $300 million in private investments to move the development beyond the preliminary stages toward completion. The companies that may invest would be competing for potentially lucrative government contracts to develop the "Next Generation" technology. If the aviation research park is successful, the federal and private contractor dollars represent a diversification of the regional economy from its reliance on gambling and entertainment. "This is an industry that brings money into the area. It's not just recycling money," said economist Joel Naroff, president of Naroff Economic Advisors. In general, Naroff explained, every new job typically sparks two to two and a half new jobs elsewhere in the local economy. But each job at the NextGen Park could indirectly result in four to five new jobs in the economy because the funding is coming from outside of the region, Naroff said. The idea of creating an aviation research center where private, public and academic officials can collaborate on developing a "high technology industry" in southern New Jersey has been discussed as far back as the 1980s, said William J. Hughes, the former congressman and ambassador for whom the tech center is named. Stockton College hopes the site would become a place where aviation companies, the Federal Aviation Administration and universities create joint research projects and provide training for science and technology-oriented students, said President Herman Saatkamp Jr. Stockton is in the middle of building a new unified science center and the school is expanding its computational science programs. Saatkamp said those developments that would be helpful with the Next Generation research at the aviation park. The Federal Aviation Administration estimates that commercial airline delays waste about $9.4 billion a year in productivity. Preliminary monitoring using NextGen technology could cut down delays by 35 percent to 40 percent. The FAA's projections show just a third of NextGen's planned capabilities would be able to cumulatively save over a billion gallons of fuel by 2018. Preparations to include these new technologies in airports across the country are under way. A total of $15 billion to $22 billion is expected to be spent on NextGen operations by 2025, according to FAA spokesman Paul Takemoto. The federal budget for NextGen work is rapidly growing - from $50 million in 2007, $212 million in 2008, $688 million in 2009 to more than $800 million in 2010.

### NextGen Airports 1AC

#### Government action on NextGen saves money – feasibility is not a problem – immediate federal investment is the cheapest solution\*\*\*

Stephen Goldsmith, Harvard Kennedy School, Zachary Tumin Harvard Kennedy School Fred Messina, and Booz Allen Hamilton, March, 2010. “Assuring the Transition to the Next Generation Air Transportation System,” http://www.ash.harvard.edu/extension/ash/docs/nextgen.pdf

Issues remain, for example, regarding who should pay as infrastructure moves from the ground to the plane, perhaps challenging the long-established practice of “government pays for infrastructure, airlines for planes.” Although the nation’s cupboard may be bare in such dire fiscal times, the airlines too, are stressed. Moreover, they are skeptical of the government’s ability to move fast enough to undertake needed reforms sufficient to generate the returns industry needs on any NextGen investment it might make. There is a prospect that government could demonstrate its resolve and prove the benefits by implementing elements of a new best equipped, best served strategy; but, such a roll-out itself raises thorny issues of handling mixed equipage operations, altering flight paths, and changing procedures. It is by no means assured, either. These issues are among the complexities confronting NextGen—a series of “Yes….but” dilemmas that seem to thwart every good move forward. How then to make progress? Some argue that what is needed is a new strong central authority directing traffic on NextGen—clarifying and resolving governance issues internal to the Federal Aviation Administration (FAA), and clearing the path ahead for the tough choices that must be made. Others suggest that the challenges are greater than a single set of internal alignments can address and that a different path of governance might be considered as well—one of networked governance. On this model, rather than expecting top-down hierarchies to resolve and break through all the complexities of NextGen’s dilemmas and problems, the group of interested participants could instead foster a network of networks where the solution prospects might be diverse, and even superior. If the conundrum is “Who shall pay?” for example, clearly a top-down approach has run into significant headwinds: neither government nor industry has yet shown full and joint commitment to do so. However, various municipalities or regions might well find a compelling business case to support the introduction of NextGen to their areas—for jobs, economic development prospects, and related commerce. Similarly, local networks might manage the issues and risks of airport expansions, flight path changes, noise, and related matters where Federal leadership would be less availing. The role of the group meeting—perhaps expanded and formalized as a consortium— might be to sponsor the formation of a network of such networks, providing overall governance, standards, and models and taking on clearly national issues—but chartering the network of networks to craft a wide range of potential solutions to NextGen’s conundrums. They would provide a compelling business case and rallying cry in each of perhaps five or six different areas for further NextGen design, development, and implementation. The members of the Executive Session resolved to explore such issues of governance, financing, incentives, and related matters in a series of follow-on work streams. II. Aviation at the NextGen Crossroads American civil aviation hovers at a crossroads. NextGen—the Next Generation Air Transportation System—offers the promise of a new universe of flight efficiency: reduced delays and carbon emissions; smoother in-flight and on-ground operations; and far less vulnerability to the vagaries of airport congestion, weather, or human error in air traffic control. Properly and widely implemented, NextGen could remake civil aviation and save billions. FAA’s NextGen is thus one of the most significant efforts of cross-boundary transformation ever contemplated by the United States government and its industry partners. NextGen’s goal is to make civil aviation safer, more efficient, and better able to support the likely demands of air transport in the new century. NextGen calls for the introduction of a variety of advanced technologies and related, supporting changes to the operations and business processes of the national airspace system. To that end, Congress and FAA have committed to a 20-year, $20 billion NextGen effort. The future of the sky has arrived, yet it remains slow to realize, complex to move forward, and has much distance to go before it can be implemented and its benefits realized. The frustrations are palpable. “If I had a magic wand and I could wave it,” an industry executive told colleagues, expressing a widely held view, “I would ask for the President of the United States to make a declarative statement—and to back it up with the full force of the administration—that NextGen is a major national and international priority.” There may be such silver bullets ahead. But NextGen’s implementation is complicated by its significant reliance on advanced aircraft technologies, such as new flight management systems, precision navigation systems, and data link capabilities. While technically feasible, the investments are costly, and until now operators have principally been expected to bear them.

### NextGen Airports 1AC

#### Economic benefits spill over the short and long terms\*\*\*

Ross DeVol and Perry Wong January 2010 Milken Institute “Jobs for America” online http://www.nam.org/~/media/58F813B0D1E643DC91E564FE4C3B3C2F.ashx

A proposed $10.4 billion investment would likely be allocated across the aerospace product and parts manufacturing. Investment would stream from an anticipated jobs bill in the Senate, a Federal Aviation Administration reauthorization, and fiscal year 2010 appropriations to the FAA. The direct impacts would be more than 30,000 aerospace manufacturing-related jobs and $2.7 billion in earnings. With ripple effects, the total impacts would result in almost 182,000 jobs, $8.9 billion in earnings, and nearly $32.1 billion in output. Every $1 billion investment in NextGen creates nearly 17,500 jobs across all sectors. The proposed investment would generate approximately 60,600 jobs annually over three years. The direct impact would be immediately felt in aerospace product and parts manufacturing. The industry tends to employ a higher concentration of high-skilled labor and pays above-average wages. A job created within the aerospace and parts manufacturing industry, on average, can create six additional jobs in other sectors. The industry relies on an extensive value chain that stimulates many other manufacturing industries.

#### Aerospace maintains America’s economy through the heaviest storms – NextGen preserves the backbone and creates positive ripple effects

National Aerospace Week, September 11-17, 2011. “Aerospace and Defense: Second to None,”

http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

Aerospace and defense is a powerful economic engine. It is Second to None. As the U.S. economy continues to move through uncertain times and the nation grapples with a growing debt, America’s aerospace industry remains a powerful, reliable engine of employment, innovation and export income. Aerospace contributed $77.5 billion in export sales to America’s economy last year. 1Conservatively, U.S. aerospace sales alone account for three to five percent of our country’s gross domestic product, and every aerospace dollar yields an extra $1.50 to $3 in further economic activity. 2 Aerospace products and services are the bedrock of our nation’s security and competitiveness. We strongly believe that keeping this economic workhorse on track is in America’s best interest. To accomplish this, government policies must support robust funding of defense priorities, research and development, a 21 st century air traffic control system, a level playing field abroad and a robust industrial base. Additionally policies that promote science, technology engineering and mathematics (STEM) will help reenergize an aging aerospace workforce with an infusion of younger employees.

### NextGen Airports 1AC

#### Decline causes great power nuclear war

Mead 9 [Walter Russell, Senior Fellow in U.S. Foreign Policy at the Council on Foreign Relations, New Republic, February 4, http://www.tnr.com/politics/story.html?id=571cbbb9-2887-4d81-8542-92e83915f5f8&p=2]

If current market turmoil seriously damaged the performance and prospects of India and China, the current crisis could join the Great Depression in the list of economic events that changed history, even if the recessions in the West are relatively short and mild. The United States should stand ready to assist Chinese and Indian financial authorities on an emergency basis--and work very hard to help both countries escape or at least weather any economic downturn. It may test the political will of the Obama administration, but the United States must avoid a protectionist response to the economic slowdown. U.S. moves to limit market access for Chinese and Indian producers could poison relations for years. For **billions of people in nuclear-armed countries** to emerge from this crisis believing either that the United States was indifferent to their well-being or that it had profited from their distress could damage U.S. foreign policy far more severely than any mistake made by George W. Bush. It's not just the great powers whose trajectories have been affected by the crash. Lesser powers like Saudi Arabia and Iran also face new constraints. The crisis has strengthened the U.S. position in the Middle East as falling oil prices reduce Iranian influence and increase the dependence of the oil sheikdoms on U.S. protection. Success in Iraq--however late, however undeserved, however limited--had already improved the Obama administration's prospects for addressing regional crises. Now, the collapse in oil prices has put the Iranian regime on the defensive. The annual inflation rate rose above 29 percent last September, up from about 17 percent in 2007, according to Iran's Bank Markazi. Economists forecast that Iran's real GDP growth will drop markedly in the coming months as stagnating oil revenues and the continued global economic downturn force the government to rein in its expansionary fiscal policy. All this has weakened Ahmadinejad at home and Iran abroad. Iranian officials must balance the relative merits of support for allies like Hamas, Hezbollah, and Syria against domestic needs, while international sanctions and other diplomatic sticks have been made more painful and Western carrots (like trade opportunities) have become more attractive. Meanwhile, Saudi Arabia and other oil states have become more dependent on the United States for protection against Iran, and they have fewer resources to fund religious extremism as they use diminished oil revenues to support basic domestic spending and development goals. None of this makes the Middle East an easy target for U.S. diplomacy, but thanks in part to the economic crisis, the incoming administration has the chance to try some new ideas and to enter negotiations with Iran (and Syria) from a position of enhanced strength. Every crisis is different, but there seem to be reasons why, over time, financial crises on balance reinforce rather than undermine the world position of the leading capitalist countries. Since capitalism first emerged in early modern Europe, the ability to exploit the advantages of rapid economic development has been a key factor in international competition. Countries that can encourage--or at least allow and sustain--the change, dislocation, upheaval, and pain that capitalism often involves, while providing their tumultuous market societies with appropriate regulatory and legal frameworks, grow swiftly. They produce cutting-edge technologies that translate into military and economic power. They are able to invest in education, making their workforces ever more productive. They typically develop liberal political institutions and cultural norms that value, or at least tolerate, dissent and that allow people of different political and religious viewpoints to collaborate on a vast social project of modernization--and to maintain political stability in the face of accelerating social and economic change. The vast productive capacity of leading capitalist powers gives them the ability to project influence around the world and, to some degree, to remake the world to suit their own interests and preferences. This is what the United Kingdom and the United States have done in past centuries, and what other capitalist powers like France, Germany, and Japan have done to a lesser extent. In these countries, the social forces that support the idea of a competitive market economy within an appropriately liberal legal and political framework are relatively strong. But, in many other countries where capitalism rubs people the wrong way, this is not the case. On either side of the Atlantic, for example, the Latin world is often drawn to anti-capitalist movements and rulers on both the right and the left. Russia, too, has never really taken to capitalism and liberal society--whether during the time of the czars, the commissars, or the post-cold war leaders who so signally failed to build a stable, open system of liberal democratic capitalism even as many former Warsaw Pact nations were making rapid transitions. Partly as a result of these internal cultural pressures, and partly because, in much of the world, capitalism has appeared as an unwelcome interloper, imposed by foreign forces and shaped to fit foreign rather than domestic interests and preferences, many countries are only half-heartedly capitalist. When crisis strikes, they are quick to decide that capitalism is a failure and look for alternatives. So far, such half-hearted experiments not only have failed to work; they have left the societies that have tried them in a progressively worse position, farther behind the front-runners as time goes by. Argentina has lost ground to Chile; Russian development has fallen farther behind that of the Baltic states and Central Europe. Frequently, the crisis has weakened the power of the merchants, industrialists, financiers, and professionals who want to develop a liberal capitalist society integrated into the world. Crisis can also strengthen the hand of religious extremists, populist radicals, or authoritarian traditionalists who are determined to resist liberal capitalist society for a variety of reasons. Meanwhile, the companies and banks based in these societies are often less established and more vulnerable to the consequences of a financial crisis than more established firms in wealthier societies. As a result, developing countries and countries where capitalism has relatively recent and shallow roots tend to suffer greater economic and political damage when crisis strikes--as, inevitably, it does. And, consequently, financial crises often reinforce rather than challenge the global distribution of power and wealth. This may be happening yet again. None of which means that we can just sit back and enjoy the recession. History may suggest that financial crises actually help capitalist great powers maintain their leads--but it has other, less reassuring messages as well. If financial crises have been a normal part of life during the 300-year rise of the liberal capitalist system under the Anglophone powers, so has war. The wars of the League of Augsburg and the Spanish Succession; the Seven Years War; the American Revolution; the Napoleonic Wars; the two World Wars; the cold war: The list of wars is almost as long as the list of financial crises. **Bad economic times** can **breed wars**. Europe was a pretty peaceful place in 1928, but the Depression poisoned German public opinion and helped bring Adolf Hitler to power. If the current crisis turns into a depression, what rough beasts might start slouching toward Moscow, Karachi, Beijing, or New Delhi to be born? The United States may not, yet, decline, but, if we can't get the world economy back on track, we may still have to fight.

### NextGen Airports 1AC

#### Healthy airline industry in the United States maintains global trade.

Aircraft Aerodynamics and Design Group at Stanford, excerpted from the British Airways web site, Jan. 2000. “THE AIRLINE INDUSTRY,” http://adg.stanford.edu/aa241/intro/airlineindustry.html

Air travel remains a large and growing industry. It facilitates economic growth, world trade, international investment and tourism and is therefore central to the globalization taking place in many other industries. In the past decade, air travel has grown by 7% per year. Travel for both business and leisure purposes grew strongly worldwide. Scheduled airlines carried 1.5 billion passengers last year. In the leisure market, the availability of large aircraft such as the Boeing 747 made it convenient and affordable for people to travel further to new and exotic destinations. Governments in developing countries realized the benefits of tourism to their national economies and spurred the development of resorts and infrastructure to lure tourists from the prosperous countries in Western Europe and North America. As the economies of developing countries grow, their own citizens are already becoming the new international tourists of the future. Business travel has also grown as companies become increasingly international in terms of their investments, their supply and production chains and their customers. The rapid growth of world trade in goods and services and international direct investment have also contributed to growth in business travel. Worldwide, IATA, International Air Transport Association, forecasts international air travel to grow by an average 6.6% a year to the end of the decade and over 5% a year from 2000 to 2010. These rates are similar to those of the past ten years. In Europe and North America, where the air travel market is already highly developed, slower growth of 4%-6% is expected. The most dynamic growth is centered on the Asia/Pacific region, where fast-growing trade and investment are coupled with rising domestic prosperity. Air travel for the region has been rising by up to 9% a year and is forecast to continue to grow rapidly, although the Asian financial crisis in 1997 and 1998 will put the brakes on growth for a year or two. In terms of total passenger trips, however, the main air travel markets of the future will continue to be in and between Europe, North America and Asia. Airlines' profitability is closely tied to economic growth and trade. During the first half of the 1990s, the industry suffered not only from world recession but travel was further depressed by the Gulf War. In 1991 the number of international passengers dropped for the first time. The financial difficulties were exacerbated by airlines over-ordering aircraft in the boom years of the late 1980s, leading to significant excess capacity in the market. IATA's member airlines suffered cumulative net losses of $20.4bn in the years from 1990 to 1994. Since then, airlines have had to recognize the need for radical change to ensure their survival and prosperity. Many have tried to cut costs aggressively, to reduce capacity growth and to increase load factors. At a time of renewed economic growth, such actions have returned the industry as a whole to profitability: IATA airlines' profits were $5bn in 1996, less than 2% of total revenues. This is below the level IATA believes is necessary for airlines to reduce their debt, build reserves and sustain investment levels. In addition, many airlines remain unprofitable. To meet the requirements of their increasingly discerning customers, some airlines are having to invest heavily in the quality of service that they offer, both on the ground and in the air. Ticketless travel, new interactive entertainment systems, and more comfortable seating are just some of the product enhancements being introduced to attract and retain customers. A number of factors are forcing airlines to become more efficient. In Europe, the European Union (EU) has ruled that governments should not be allowed to subsidize their loss-making airlines. Elsewhere too, governments' concerns over their own finances and a recognition of the benefits of privatization have led to a gradual transfer of ownership of airlines from the state to the private sector. In order to appeal to prospective shareholders, the airlines are having to become more efficient and competitive. Deregulation is also stimulating competition, such as that from small, low-cost carriers. The US led the way in 1978 and Europe is following suit. The EU's final stage of deregulation took effect in April 1997, allowing an airline from one member state to fly passengers within another member's domestic market. Beyond Europe too, 'open skies' agreements are beginning to dismantle some of the regulations governing which carriers can fly on certain routes. Nevertheless, the aviation industry is characterized by strong nationalist sentiments towards domestic 'flag carriers'. In many parts of the world, airlines will therefore continue to face limitations on where they can fly and restrictions on their ownership of foreign carriers. Despite this, the airline industry has proceeded along the path towards globalization and consolidation, characteristics associated with the normal development of many other industries. It has done this through the establishment of alliances and partnerships between airlines, linking their networks to expand access to their customers. Hundreds of airlines have entered into alliances, ranging from marketing agreements and code-shares to franchises and equity transfers. The outlook for the air travel industry is one of strong growth. Forecasts suggest that the number of passengers will double by 2010. For airlines, the future will hold many challenges. Successful airlines will be those that continue to tackle their costs and improve their products, thereby securing a strong presence in the key world aviation markets. NORTH AMERICAN INDUSTRY OVERVIEW The commercial aviation industry in the United States has grown dramatically since the end of World War II. In 1945 the major airlines flew 3.3 billion revenue passenger miles (RPMs). By the mid 1970s, when deregulation was beginning to develop, the major carriers flew 130 billion RPMs. By 1988, after a decade of deregulation, the number of domestic RPMs had reached 330 billion (Source: Winds of Change). The United States is the largest single market in the world, accounting for 33 per cent of scheduled RPMs (41 per cent of total scheduled passengers) in 1996. The most significant change in the history of the industry came in 1976 when the Civil Aeronautics Board (CAB) asked Congress to dismantle the economic regulatory system and allow the airlines to operate under market forces. This changed the face of commercial aviation in the United States. Congress passed the Airline Deregulation Act in 1978, easing the entry of new companies into the business and giving them freedom to set their own fares and fly whatever domestic routes they chose.

### NextGen Airports 1AC

#### The impact is nuclear war.

Michael Spicer, economist, Former Member of British Parliament, “The Challenge from the East and the Rebirth of the West” 1996 p. 121

The choice facing the West today is much the same as that which faced the Soviet bloc after World War II: between meeting head-on the challenge of world trade with the adjustments and the benefits that it will bring, or of attempting to shut out markets that are growing and where a dynamic new pace is being set for innovative productions. The problem about the second approach is not simply that it won’t hold: satellite technology alone will ensure that consumers will begin to demand those goods that the East is able to provide most cheaply. More fundamentally, it will guarantee the emergence of a fragmented world in which natural fears will be fanned and inflamed. A world divided into rigid trade blocs will be a deeply troubled and unstable place in which suspicion and ultimately envy will possibly erupt into a major war. I do not say that the converse will necessarily be true, that in a free trading world there will be an absence of all strife. Such a proposition would manifestly be absurd. But to trade is to become interdependent, and that is a good step in the direction of world stability. With nuclear weapons at two a penny, stability will be at a premium in the years ahead.

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#### Advantage 2 is Aerospace Competitiveness

#### US aerospace competitiveness is failing now – implementing NextGen is key to our global leadership

The Honorable Robert S. Walker—Commission Chairman Chairman, Wexler & Walker Public Public Policy Associates et al (including BUZZ ALDRIN) “Commission on the Future of the United States Aerospace Industry” 2002 (last date cited) http://history.nasa.gov/AeroCommissionFinalReport.pdf

The contributions of aerospace to our global leadership have been so successful that it is assumed U.S. preeminence in aerospace remains assured. Yet the evidence would indicate this to be far from the case. The U.S. aerospace industry has consolidated to a handful of players—from what was once over 70 suppliers in 1980 down to 5 prime contractors today. Only one U.S. commercial prime aircraft manufacturer remains. Not all of these surviving companies are in strong business health. The U.S. airlines that rely upon aerospace products find their very existence is threatened. They absorbed historical losses of over $7 billion in 2001 and potentially more this year. The industry is confronted with a graying workforce in science, engineering and manufacturing, with an estimated 26 percent available for retirement within the next five years. New entrants to the industry have dropped precipitously to historical lows as the number of layoffs in the industry mount. Compounding the workforce crisis is the failure of the U.S. K-12 education system to properly equip U.S. students with the math, science, and technological skills needed to advance the U.S. aerospace industry. The Commission’s urgent purpose is to call attention to how the critical underpinnings of this nation’s aerospace industry are showing signs of faltering— and to raise the alarm. This nation has generously reaped the benefits of prior innovations in aerospace, but we have not been attentive to its health or its future. During this year of individual and collective research, the Commission has visited and spoken with aerospace leaders in the United States, Europe, and Asia. We noted with interest how other countries that aspire for a great global role are directing intense attention and resources to foster an indigenous aerospace industry. This is in contrast to the attitude present here in the United States. We stand dangerously close to squandering the advantage bequeathed to us by prior generations of aerospace leaders. We must reverse this trend and march steadily towards rebuilding the industry. The time for action is now. This report contains recommendations intended to catalyze action from leaders in government, industry, labor and academia and assure this industry’s continued prominence. A healthy aerospace industry is a national imperative. The Administration and the Congress must heed our warning call and act promptly to implement the recommendations in this report. An Aerospace Vision This nation needs a national vision to keep alive the flames of imagination and innovation that have always been a hallmark of aerospace. For inspiration, we looked to what aerospace can do for our nation and world. The vision the Commission used to guide its efforts is “Anyone, Anything, Anywhere, Anytime.” We offer this to the nation as its vision for aerospace. Conclusions and Recommendations The Congress gave our Commission a broad mandate to study the health of the aerospace industry and to identify actions that the United States needs to take to ensure its health in the future. The chal lenge of looking across military, civil and commercial aspects of aviation and space was an opportunity to take an integrated view of the aerospace sector – government, industry, labor and academia. The Commissioners represent a broad cross section of the stakeholders responsible for the health of the industry and whose expertise represents the breadth and depth of aerospace issues. Drawing on their extensive experience, and on the hundreds of briefings and public testimony, the Commission has made nine recommendations—one per chapter— that provide our guidance to the nation’s leaders on the future of the U.S. aerospace industry. The size and scope of this report reflects an industry that is complex and interdependent. The following are the conclusions and recommendations in the final report by chapter. Chapter 1—Vision: Anyone, Anything, Anywhere, Anytime Conclusions To achieve our vision for aerospace, the Commission concludes that: • The nation needs a national aerospace policy; • There needs to be a government-wide framework that implements this policy; • The Administration and Congress need to remove prohibitive legal and regulatory barriers that impede this sector’s growth and continually seek to level the international playing field; and •

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Global U.S. aerospace leadership can only be achieved through investments in our future, including our industrial base, workforce, longterm research and national infrastructure. Recommendation #1 The integral role aerospace plays in our economy, our security, our mobility, and our values makes global leadership in aviation and space a national imperative. Given the real and evolving challenges that confront our nation, government must commit to increased and sustained investment and must facilitate private investment in our national aerospace sector. The Commission, therefore, recommends that the United States boldly pioneer new frontiers in aerospace technology, commerce and exploration. VISION: “Anyone, Anything, Anywhere, Anytime.”v i i FINAL REPORT OF THE COMMISSION ON THE FUTURE OF THE UNITED STATES AEROSPACE INDUSTRY Executive Summary Chapter 2—Air Transportation: Exploit Aviation’s Mobility Advantage Conclusions The Commission concludes that superior mobility afforded by air transportation is a huge national asset and competitive advantage for the United States. Because of the tremendous benefits derived from a highly mobile citizenry and rapid cargo transport, the United States must make consistent and significant improvements to our nation’s air transportation system a top national priority. Transform the U.S. Air Transportation System as a National Priority. We need national leadership to develop an air transportation system that simultaneously meets our civil aviation, national defense and homeland security needs. Today, leadership and responsibility are dispersed among many federal, state and local organizations that impact the aviation community. In the federal government, this includes the Department of Transportation’s Federal Aviation Administration (FAA), National Aeronautics and Space Administration (NASA), Environmental Protection Agency, and the Departments of Defense (DoD), Commerce, and State. Often these departments and agencies deal with aviation-related issues independently, without adequate coordination, and sometimes at cross-purposes. All have separate authorizing and appropriating Congressional committees. State and local governments also play important aviation development roles and private industry has numerous near-term competing forces that often delay longer-term solutions. Only strong federal leadership, aimed at a national objective, can sustain a transformational effort. Deploy a New, Highly Automated Air Traffic Management System. The core of an integrated 21st century transportation system will be a common advanced communications, navigation and surveillance infrastructure and modern operational procedures. The system needs to allow all classes of aircraft, from airlines to unpiloted vehicles, to operate safely, securely, and efficiently from thousands of communities based on market size and demand. It also needs to be able to operate within a national air defense system and enable military and commercial aircraft to operate around the world in peacetime and in war. As a first step, the Commission recommended in its Interim Report #2 “the Administration should immediately create a multi-agency task force with the leadership to develop an integrated plan to transform our air transportation system.” This task force should be immediately assigned the leadership role to establish a Next Generation Air Transportation System Joint Program Office that brings together needed participation from the FAA, NASA, DoD, Office of Homeland Security, National Oceanographic and Atmospheric Administration, and other government organizations. Within a year, the Joint Program Office should present a plan to the Administration and the Congress outlining the overall strategy, schedule, and resources needed to develop and deploy the nation’s next generation air transportation system. As this transformational plan is developed, the FAA must continue to implement the Operational Evolution Plan. FAA and NASA must also continue to perform critical long-term research. The Commission also recommended in Interim Report #2 “the Administration and Congress should fully fund air traffic control modernization efforts in fiscal year 2003 and beyond, and prioritize FAA and NASA research and development efforts that are the critical building blocks for the future.”

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#### A strong aerospace industry is necessary for U.S. airpower

Thompson 9 (David, President – American Institute of Aeronautics and Astronautics, “The Aerospace Workforce”, Federal News Service, 12-10, Lexis)

Aerospace systems are of considerable importance to U.S. national security, economic prosperity, technological vitality, and global leadership. Aeronautical and space systems protect our citizens, armed forces, and allies abroad. They connect the farthest corners of the world with safe and efficient air transportation and satellite communications, and they monitor the Earth, explore the solar system, and study the wider universe. The U.S. aerospace sector also contributes in major ways to America's economic output and high- technology employment. Aerospace research and development and manufacturing companies generated approximately $240 billion in sales in 2008, or nearly 1.75 percent of our country's gross national product. They currently employ about 650,000 people throughout our country. U.S. government agencies and departments engaged in aerospace research and operations add another 125,000 employees to the sector's workforce, bringing the total to over 775,000 people. Included in this number are more than 200,000 engineers and scientists -- one of the largest concentrations of technical brainpower on Earth. However, the U.S. aerospace workforce is now facing the most serious demographic challenge in his 100-year history. Simply put, today, many more older, experienced professionals are retiring from or otherwise leaving our industrial and governmental aerospace workforce than early career professionals are entering it. This imbalance is expected to become even more severe over the next five years as the final members of the Apollo-era generation of engineers and scientists complete 40- or 45-year careers and transition to well-deserved retirements. In fact, around 50 percent of the current aerospace workforce will be eligible for retirement within just the next five years. Meanwhile, the supply of younger aerospace engineers and scientists entering the industry is woefully insufficient to replace the mounting wave of retirements and other departures that we see in the near future. In part, this is the result of broader technical career trends as engineering and science graduates from our country's universities continue a multi-decade decline, even as the demand for their knowledge and skills in aerospace and other industries keeps increasing. Today, only about 15 percent of U.S. students earn their first college degree in engineering or science, well behind the 40 or 50 percent levels seen in many European and Asian countries. Due to the dual-use nature of aerospace technology and the limited supply of visas available to highly-qualified non-U.S. citizens, our industry's ability to hire the best and brightest graduates from overseas is also severely constrained. As a result, unless effective action is taken to reverse current trends, the U.S. aerospace sector is expected to experience a dramatic decrease in its technical workforce over the next decade. Your second question concerns the implications of a cutback in human spaceflight programs. AIAA's view on this is as follows. While U.S. human spaceflight programs directly employ somewhat less than 10 percent of our country's aerospace workers, its influence on attracting and motivating tomorrow's aerospace professionals is much greater than its immediate employment contribution. For nearly 50 years the excitement and challenge of human spaceflight have been tremendously important factors in the decisions of generations of young people to prepare for and to pursue careers in the aerospace sector. This remains true today, as indicated by hundreds of testimonies AIAA members have recorded over the past two years, a few of which I'll show in brief video interviews at the end of my statement. Further evidence of the catalytic role of human space missions is found in a recent study conducted earlier this year by MIT which found that 40 percent of current aerospace engineering undergraduates cited human space programs as the main reason they chose this field of study. Therefore, I think it can be predicted with high confidence that a major cutback in U.S. human space programs would be substantially detrimental to the future of the aerospace workforce. Such a cutback would put even greater stress on an already weakened strategic sector of our domestic high-technology workforce. Your final question centers on other issues that should be considered as decisions are made on the funding and direction for NASA, particularly in the human spaceflight area. In conclusion, AIAA offers the following suggestions in this regard. Beyond the previously noted critical influence on the future supply of aerospace professionals, administration and congressional leaders should also consider the collateral damage to the space industrial base if human space programs were substantially curtailed. Due to low annual production rates and highly-specialized product requirements, the domestic supply chain for space systems is relatively fragile. Many second- and third-tier suppliers in particular operate at marginal volumes today, so even a small reduction in their business could force some critical suppliers to exit this sector. Human space programs represent around 20 percent of the $47 billion in total U.S. space and missile systems sales from 2008. Accordingly, a major cutback in human space spending could have large and highly adverse ripple effects throughout commercial, defense, and scientific space programs as well, potentially triggering a series of disruptive changes in the common industrial supply base that our entire space sector relies on.

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#### Now the impacts - first, hegemony:

#### US leadership and military credibility are impossible without airpower capabilities

Richard **Hazdra 01**, Mayor- USAF, Air Mobility: The Key to United States National Security Strategy, Fairchild paper, August) http://aupress.au.af.mil/fairchild\_papers/hazdra/hazdra.pdf

In shaping the international environment, the United States must possess a credible military force where military activities include overseas presence and peacetime engagement and the will to use military force.2 According to the NDP, overseas presence is the key to a stable international environment.3 Peacetime engagement includes rotational deployments that help sustain regional stability by deterring aggression and exercises with foreign nations that solidify relations with those nations.4 Deployments and exercises both require air mobility in the form of both airlift and air refueling in order to transport the necessary troops and equipment. Peacetime engagement also includes other programs such as the Nunn–Lugar Cooperative Threat Reduction Program where the United States assists members of the Commonwealth of Independent States in dismantling and storing WMD.5 Here, air mobility is the lead component by transporting nuclear weapons to the United States from compliant nations. Airlift also plays a crucial role in responding to threats and crises by enhancing our war-fighting capability.6 The United States may move some forces nearer to a theater in crisis and rapidly deploy other forces into that theater. Depending on the crisis, forces from the Army, Navy, Air Force, Marines, or any combination of military personnel and equipment could comprise the force structure required. Consequently, the United States must airlift these forces along with the needed logistics support. In addition, the focused logistics concept of Joint Vision 2010 requires the transportation of supplies and materials to support these forces within hours or days rather than weeks, a mission solely suited to air mobility. In responding to crises, forces may deploy in support of smaller-scale contingencies which include humanitarian assistance, peace operations, enforcing NFZs, evacuating US citizens, reinforcing key allies, limited strikes, and interventions. 7 Today, US forces find themselves globally engaged in responding to these contingencies more frequently and maintain longer-term commitments to support these contingencies. In these situations, many deployments occur in the absence of forward basing.8 The loss of forward basing has reduced AMC’s worldwide infrastructure from 39 locations in 1992 to 12 in 1999.9 Thus, the United States must again use air mobility to deploy forces overseas in a minimum amount of time for an operation to be successful.

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#### It’s crucial to all military force

**Wyne, 8** – Michael W. Wynne, Secretary of the Air Force [“Sovereign Options: Securing Global Stability and Prosperity A Strategy for the US Air Force”, Air University, Strategic Studies Quarterly, http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA508798&Location=U2&doc=GetTRDoc.pdf]

Stated briefly, as the Air Force builds its forces, its central goal is to ofer the nation a flexible mix of capabilities that allow it to act in a world of growing strategic uncertainty. We program our forces to allow policy mak­ ers to act across the spectrum of violence, from strikes against individual terrorists to major-power wars. We construct our forces to provide presidents and combatant commanders the widest possible range of options to assure friends and dissuade and deter those who seek to use violence to pursue their ends. We assemble our forces so that, when we must fight, our air, space, and cyber forces provide the nation with capabilities that maximize the chances that we will be able to pit our asymmetric advan­ tages against our opponents’ vulnerabilities. The Air Force provides the United States with powerful advantages that it does not obtain from land or maritime services. We currently possess unparalleled advantages in air and space—domains that cover the entire surface of the earth. So long as our air and space superiority forces allow us to dominate these domains, we will be able to observe any part of the planet, communicate that information to where it will do the most good, and project force to that location. The capabilities we bring to the fight allow the Air Force to act alone or to magnify the power of all joint and coalition forces.

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#### US dominance is key to solve multiple hotspots that escalate to global war

Robert Kagan (Senior Associate at the Carnegie Endowment for International Peace and Senior Transatlantic Fellow at the German Marshall Fund) 2007 “End of Dreams, Return of History,” Hoover Institution, No. 144, August/September, http://www.hoover.org/publications/policy-review/article/6136

The jostling for status and influence among these ambitious nations and would-be nations is a second defining feature of the new post-Cold War international system. Nationalism in all its forms is back, if it ever went away, and so is international competition for power, influence, honor, and status. American predominance prevents these rivalries from intensifying — its regional as well as its global predominance. Were the United States to diminish its influence in the regions where it is currently the strongest power, the other nations would settle disputes as great and lesser powers have done in the past: sometimes through diplomacy and accommodation but often through confrontation and wars of varying scope, intensity, and destructiveness. One novel aspect of such a multipolar world is that most of these powers would possess nuclear weapons. That could make wars between them less likely, or it could simply make them more catastrophic.It is easy but also dangerous to underestimate the role the United States plays in providing a measure of stability in the world even as it also disrupts stability. For instance, the United States is the dominant naval power everywhere, such that other nations cannot compete with it even in their home waters. They either happily or grudgingly allow the United States Navy to be the guarantor of international waterways and trade routes, of international access to markets and raw materials such as oil. Even when the United States engages in a war, it is able to play its role as guardian of the waterways. In a more genuinely multipolar world, however, it would not. Nations would compete for naval dominance at least in their own regions and possibly beyond. Conflict between nations would involve struggles on the oceans as well as on land. Armed embargos, of the kind used in World War i and other major conflicts, would disrupt trade flows in a way that is now impossible. Such order as exists in the world rests not merely on the goodwill of peoples but on a foundation provided by American power. Even the European Union, that great geopolitical miracle, owes its founding to American power, for without it the European nations after World War ii would never have felt secure enough to reintegrate Germany. Most Europeans recoil at the thought, but even today Europe ’s stability depends on the guarantee, however distant and one hopes unnecessary, that the United States could step in to check any dangerous development on the continent. In a genuinely multipolar world, that would not be possible without renewing the danger of world war. People who believe greater equality among nations would be preferable to the present American predominance often succumb to a basic logical fallacy. They believe the order the world enjoys today exists independently of American power. They imagine that in a world where American power was diminished, the aspects of international order that they like would remain in place. But that ’s not the way it works. International order does not rest on ideas and institutions. It is shaped by configurations of power. The international order we know today reflects the distribution of power in the world since World War ii, and especially since the end of the Cold War. A different configuration of power, a multipolar world in which the poles were Russia, China, the United States, India, and Europe, would produce its own kind of order, with different rules and norms reflecting the interests of the powerful states that would have a hand in shaping it. Would that international order be an improvement? Perhaps for Beijing and Moscow it would. But it is doubtful that it would suit the tastes of enlightenment liberals in the United States and Europe. The current order, of course, is not only far from perfect but also offers no guarantee against major conflict among the world ’s great powers. Even under the umbrella of unipolarity, regional conflicts involving the large powers may erupt. War could erupt between China and Taiwan and draw in both the United States and Japan. War could erupt between Russia and Georgia, forcing the United States and its European allies to decide whether to intervene or suffer the consequences of a Russian victory. Conflict between India and Pakistan

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remains possible, as does conflict between Iran and Israel or other Middle Eastern states. These, too, could draw in other great powers, including the United States. Such conflicts may be unavoidable no matter what policies the United States pursues. But they are more likely to erupt if the United States weakens or withdraws from its positions of regional dominance. This is especially true in East Asia, where most nations agree that a reliable American power has a stabilizing and pacific effect on the region. That is certainly the view of most of China ’s neighbors. But even China, which seeks gradually to supplant the United States as the dominant power in the region, faces the dilemma that an American withdrawal could unleash an ambitious, independent, nationalist Japan. In Europe, too, the departure of the United States from the scene — even if it remained the world’s most powerful nation — could be destabilizing. It could tempt Russia to an even more overbearing and potentially forceful approach to unruly nations on its periphery. Although some realist theorists seem to imagine that the disappearance of the Soviet Union put an end to the possibility of confrontation between Russia and the West, and therefore to the need for a permanent American role in Europe, history suggests that conflicts in Europe involving Russia are possible even without Soviet communism. If the United States withdrew from Europe — if it adopted what some call a strategy of “offshore balancing” — this could in time increase the likelihood of conflict involving Russia and its near neighbors, which could in turn draw the United States back in under unfavorable circumstances. It is also optimistic to imagine that a retrenchment of the American position in the Middle East and the assumption of a more passive, “offshore” role would lead to greater stability there. The vital interest the United States has in access to oil and the role it plays in keeping access open to other nations in Europe and Asia make it unlikely that American leaders could or would stand back and hope for the best while the powers in the region battle it out. Nor would a more “even-handed” policy toward Israel, which some see as the magic key to unlocking peace, stability, and comity in the Middle East, obviate the need to come to Israel ’s aid if its security became threatened. That commitment, paired with the American commitment to protect strategic oil supplies for most of the world, practically ensures a heavy American military presence in the region, both on the seas and on the ground. The subtraction of American power from any region would not end conflict but would simply change the equation. In the Middle East, competition for influence among powers both inside and outside the region has raged for at least two centuries. The rise of Islamic fundamentalism doesn ’t change this. It only adds a new and more threatening dimension to the competition, which neither a sudden end to the conflict between Israel and the Palestinians nor an immediate American withdrawal from Iraq would change. The alternative to American predominance in the region is not balance and peace. It is further competition. The region and the states within it remain relatively weak. A diminution of American influence would not be followed by a diminution of other external influences. One could expect deeper involvement by both China and Russia, if only to secure their interests. 18 And one could also expect the more powerful states of the region, particularly Iran, to expand and fill the vacuum. It is doubtful that any American administration would voluntarily take actions that could shift the balance of power in the Middle East further toward Russia, China, or Iran. The world hasn ’t changed that much. An American withdrawal from Iraq will not return things to “normal” or to a new kind of stability in the region. It will produce a new instability, one likely to draw the United States back in again.

### NextGen Airports 1AC

#### Second, Terrorism:

US air power is key to combat terrorism  **Rand 03** [RAND Project Air Force, “Annual Report 2003”, 2003, http://www.rand.org/pubs/annual\_reports/2005/AR7089.pdf /Ghosh]

The war on terrorism is more likely to be a long-term effort in which the use of force, at least by U.S. military personnel, is only sporadic and successful mili- tary operations will resemble counterinsurgency operations. The primary role of U.S. military forces will often be indirect and supportive. U.S. forces will be called upon to train, equip, advise, and assist host-country forces in rooting out terrorist groups; forge strong relationships with host-country personnel; show great discretion in their conduct of operations; and maintain a low pro- file in the host country. They will be able to react swiftly and effectively when promising targets arise. The Air Force, then, should expect sustained heavy demand to provide impor- tant capabilities, assets, and skill sets to support counterterrorism operations abroad. Chief contributions will include surveillance platforms, operators, and analysts; language-qualified personnel to help train and advise host-country forces and to analyze human intelligence; security police and other force- protection assets; base operating support personnel and equipment to provide communications, housing, and transportation; heliborne insertion and extrac- tion capabilities; and humanitarian relief assets. In some cases, U.S. airpower may be called upon to strike terrorists in base camps, hideouts, vehicles, and other locations.

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#### Terrorism causes miscalculation that draws in Russia and China and culminates in extinction.

**Ayson 10** (Robert, Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand at the Victoria University of Wellington**,** “After a Terrorist Nuclear Attack: Envisaging Catalytic Effects,” Studies in Conflict & Terrorism, Volume 33, Issue 7, July, Available Online to Subscribing Institutions via InformaWorld)

A terrorist nuclear attack, and even the use of nuclear weapons in response by the country attacked in the first place, would not necessarily represent the worst of the nuclear worlds imaginable. Indeed, there are reasons to wonder whether nuclear terrorism should ever be regarded as belonging in the category of truly existential threats. A contrast can be drawn here with the global catastrophe that would come from a massive nuclear exchange between two or more of the sovereign states that possess these weapons in significant numbers. Even the worst terrorism that the twenty-first century might bring would fade into insignificance alongside considerations of what a general nuclear war would have wrought in the Cold War period. And it must be admitted that as long as the major nuclear weapons states have hundreds and even thousands of nuclear weapons at their disposal, there is always the possibility of a truly awful nuclear exchange taking place precipitated entirely by state possessors themselves. But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them. In this context, today’s and tomorrow’s terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks,40 and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from.”41 Alternatively, if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible (or responsible at all) suspicion would shift immediately to state possessors. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would **Russia** and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington’s relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst? Of course, the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack**?** Washington’s early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China. For example**,** in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country’s armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as

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a sign of U.S. intentions to use force (and possibly nuclear force) against them. In that situation, the temptations to preempt such actions might grow, although it must be admitted that any preemption would probably still meet with a devastating response. As part of its initial response to the act of nuclear terrorism (as discussed earlier) Washington might decide to order a significant conventional (or nuclear) retaliatory or disarming attack against the leadership of the terrorist group and/or states seen to support that group. Depending on the identity and especially the location of these targets, Russia and/or China might interpret such action as being far too close for their comfort, and potentially as an infringement on their spheres of influence and even on their sovereignty. One far-fetched but perhaps not impossible scenario might stem from a judgment in Washington that some of the main aiders and abetters of the terrorist action resided somewhere such as Chechnya, perhaps in connection with what Allison claims is the “Chechen insurgents’ … long-standing interest in all things nuclear.”42 American pressure on that part of the world would almost certainly raise alarms in Moscow that might require a degree of advanced consultation from Washington that the latter found itself unable or unwilling to provide. There is also the question of how other nuclear-armed states respond to the act of nuclear terrorism on another member of that special club. It could reasonably be expected that following a nuclear terrorist attack on the United States, both Russia and China would extend immediate sympathy and support to Washington and would work alongside the United States in the Security Council. But there is just a chance, albeit a slim one, where the support of Russia and/or China is less automatic in some cases than in others. For example, what would happen if the United States wished to discuss its right to retaliate against groups based in their territory? If, for some reason, Washington found the responses of Russia and China deeply underwhelming, (neither “for us or against us”) might it also suspect that they secretly were in cahoots with the group, increasing (again perhaps ever so slightly) the chances of a major exchange. If the terrorist group had some connections to groups in Russia and China, or existed in areas of the world over which Russia and China held sway, and if Washington felt that Moscow or Beijing were placing a curiously modest level of pressure on them, what conclusions might it then draw about their culpability? If Washington decided to use, or decided to threaten the use of, nuclear weapons, the responses of Russia and China would be crucial to the chances of avoiding a more serious nuclear exchange. They might surmise, for example, that while the act of nuclear terrorism was especially heinous and demanded a strong response, the response simply had to remain below the nuclear threshold. It would be one thing for a non-state actor to have broken the nuclear use taboo, but an entirely different thing for a state actor, and indeed the leading state in the international system, to do so. If Russia and China felt sufficiently strongly about that prospect, there is then the question of what options would lie open to them to dissuade the United States from such action: and as has been seen over the last several decades, the central dissuader of the use of nuclear weapons by states has been the threat of nuclear retaliation. If some readers find this simply too fanciful, and perhaps even offensive to contemplate, it may be informative to reverse the tables. Russia, which possesses an arsenal of thousands of nuclear warheads and that has been one of the two most important trustees of the non-use taboo, is subjected to an attack of nuclear terrorism. In response, Moscow places its nuclear forces very visibly on a higher state of alert and declares that it is considering the use of nuclear retaliation against the group and any of its state supporters. How would Washington view such a possibility? Would it really be keen to support Russia’s use of nuclear weapons, including outside Russia’s traditional sphere of influence? And if not, which seems quite plausible, what options would Washington have to communicate that displeasure? If China had been the victim of the nuclear terrorism and seemed likely to retaliate in kind, would the United States and Russia be happy to sit back and let this occur? In the charged atmosphere immediately after a nuclear terrorist attack, how would the attacked country respond to pressure from other major nuclear powers not to respond in kind? The phrase “how dare they tell us what to do” immediately springs to mind**.** Some might even go so far as to interpret this concern as a tacit form ofsympathy or support for the terrorists. This might not help the chances of nuclear restraint.

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#### Third, Korea:

#### US air power is the strongest deterrent against North Korean aggression

Bruce **Bechtol** Jr. , Assistant Professor of National Security Studies at Air Command and Staff College, **05** [Air & Space Power Journal, “The Future of US Airpower on the Korean Peninsula”, Fall 2005, http://www.airpower.au.af.mil/airchronicles/apj/apj05/fal05/bechtol.html#bechtol /Ghosh]

Clearly, US and South Korean airpower serves as a strong deterrent against the traditional aggression that North Korea wanted to initiate prior to the economic collapse that put its formidable armored and mechanized forces into a state of decline. But airpower also would play a major role (perhaps an even more important one) in stopping aggression from North Korea’s asymmetric capability that built up during the 1990s. As discussed previously, North Korea has now moved a large number of long-range artillery systems close enough to the DMZ to threaten virtually all of Seoul and many areas of Kyongi Province (the northernmost province in South Korea; it contains the largest concentration of that country’s ground forces) with little warning time to US and ROK forces. Currently, the ground-based mission of providing counterfire to this long-range artillery falls to the 2d US Infantry Division, which operates 30 multiple-rocket-launcher systems and 30 M109A6 Paladin self-propelled howitzers. During April 2005, as part of the ongoing shift of defense responsibilities on the Korean Peninsula between South Korean and US forces, leadership announced that the South Korean army would assume responsibility for this mission. Integration of South Korean units into the combined ROK-US command, control, communication, computers, and intelligence (C4I) system on the peninsula will be key to the success of this new mission.17 Regarding the current state of readiness of South Korean forces on the peninsula, however, the United States has concerns about the unwillingness of Seoul to spend money to upgrade its own C4I infrastructure—or to help with the costs of the current structure.18 Integrating these newly assigned units into a modern C4I system is vital because of the importance of quick reaction time in pinpointing North Korean artillery units with radar and destroying them before they fire or shortly thereafter.19

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#### Extinction

Pat Fungamwango October 25, 1999 Africa-at-Large; Third world war: Watch the Koreas Africa News

Lusaka - If there is one place today where the much-dreaded Third World War could easily erupt and probably reduce earth to a huge smouldering cinder it is the Korean Peninsula in Far East Asia. Ever since the end of the savage three-year Korean war in the early 1950s, military tension between the hard-line communist north and the American backed South Korea has remained dangerously high. In fact the Koreas are technically still at war. A foreign visitor to either Pyongyong in the North or Seoul in South Korea will quickly notice that the divided country is always on maximum alert for any eventuality. North Korea or the Democratic People's Republic of Korea (DPRK) has never forgiven the US for coming to the aid of South Korea during the Korean war. She still regards the US as an occupation force in South Korea and wholly to blame for the non-reunification of the country. North Korean media constantly churns out a tirade of attacks on "imperialist" America and its "running dog" South Korea. The DPRK is one of the most secretive countries in the world where a visitor is given the impression that the people's hatred for the US is absolute while the love for their government is total. Whether this is really so, it is extremely difficult to conclude. In the DPRK, a visitor is never given a chance to speak to ordinary Koreans about the politics of their country. No visitor moves around alone without government escort. The American government argues that its presence in South Korea was because of the constant danger of an invasion from the north. America has vast economic interests in South Korea. She points out that the north has dug numerous tunnels along the demilitarised zone as part of the invasion plans. She also accuses the north of violating South Korean territorial waters. Early this year, a small North Korean submarine was caught in South Korean waters after getting entangled in fishing nets. Both the Americans and South Koreans claim the submarine was on a military spying mission. However, the intension of the alleged intrusion will probably never be known because the craft's crew were all found with fatal gunshot wounds to their heads in what has been described as suicide pact to hide the truth of the mission. The US mistrust of the north's intentions is so deep that it is no secret that today Washington has the largest concentration of soldiers and weaponry of all descriptions in south Korea than anywhere else in the World, apart from America itself. Some of the armada that was deployed in the recent bombing of Iraq and in Operation Desert Storm against the same country following its invasion of Kuwait was from the fleet permanently stationed on the Korean Peninsula. It is true too that at the moment the North/South Korean border is the most fortified in the world. The border line is littered with anti-tank and anti-personnel landmines, surface-to-surface and surface-to-air missiles and is constantly patrolled by warplanes from both sides. It is common knowledge that America also keeps an eye on any military movement or build-up in the north through spy satellites. The DPRK is said to have an estimated one million soldiers and a huge arsenal of various weapons. Although the DPRK regards herself as a developing country, she can however be classified as a super-power in terms of military might. The DPRK is capable of producing medium and long-range missiles. Last year, for example, she test-fired a medium range missile over Japan, an action that greatly shook and alarmed the US, Japan and South Korea. The DPRK says the projectile was a satellite. There have also been fears that she was planning to test another ballistic missile capable of reaching North America. Naturally, the world is anxious that military tension on the Korean Peninsula must be defused to avoid an apocalypse on earth. It is therefore significant that the American government announced a few days ago that it was moving towards normalising relations with North Korea.

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#### Advantage 3 is Warming

#### NextGen can solve warming – government action is key

Sam Capoccitti Anshuman Khare Udo Mildenberger “Aviation Industry - Mitigating Climate Change Impacts through Technology and Policy” Journal of Technology Management and Innovation 2010, Volume 5, Issue 2 http://www.scielo.cl/scielo.php?pid=S0718-27242010000200006&script=sci\_arttext

To address the problem of Climate Change, like all other industries, airlines will also have to re-think their business model. They will have to probably agree to be part of a network that moves people and goods from one place to another in an efficient and timely manner. To achieve this goal, they will have to collaborate and network with other transport operators like the railways. "In the Netherlands, airlines and rail companies have a history of cooperation. Long before its merger, KLM had already cancelled several short-haul flights on routes where fast train links existed. Many of KLM's international flights to Dutch cities also finish with a final leg by train" (Balch, 2009). The "Flight" Ahead As demonstrated, the aviation industry plays a vital role in the global economy and provides economic and social benefits. It is also apparent that global temperatures continue to rise while the aviation industry continues to grow. The combination of aviation growth and climate change leads us to believe that CO2 emissions from the aviation industry is one of the many other factors impacting global warming. It has to be addressed even though its impact today is limited to a very low percentage. But with a potential to grow, it cannot go unattended. With this in mind, the following main areas have been identified in order to help reduce aviation emissions. • Strengthen the global leadership strategy (for example, add aviation emissions to Kyoto protocol; revisit fuel surcharge (taxation) issue; create an emissions charge; implement an emissions cap on aviation emissions; enforce Carbon offset programs for all airlines; etc.) • Increase Alternative Fuel technology/implementation (for example, increase biomass fuel technology; etc.) • improvements in Aircraft Technology Efficiency (for example, reduce aircraft fuel consumption and CO2 emissions by replacing older, less fuel efficient aircraft with aircraft using latest fuel efficiency technology and navigation equipment; reduce aircraft noise - mitigate inefficient noise procedures; reduce oxides of nitrogen - try to go beyond compliance limits; etc.) • Improvements in Air Traffic Management (for example, cut inefficiency in current flight patterns - more fuel efficient approaches and overall routing; encourage flight patterns that minimize the impact of non CO2 emissions; optimize aircraft speed; etc.) • Improvements in Operational Efficiencies (for example, increase load factors; eliminate non-essential weight - reassess the value of onboard materials; limit auxiliary power (APU) use by reducing engine idle times and by shutting down engines when taxiing to reduce APU use and fuel burn; reduce taxiing time of aircraft; etc.) All these suggestions require stimulating technology advancements and innovation. Holliday et al. (2002) state that innovation is critical for any organization and industry if it wants to operate in a new global business environment which puts emphasis on environmental alignment of business goals. The aviation industry (airlines, governments, non government organizations, suppliers, manufactures) must work together and create technology advancements that catapult the industry into the future. The innovation created must not only look at how the aviation industry can improve on their CO2 emissions but also how it can change the CO2 emissions landscape. Improving current practices is not good enough. The aviation industry must change the way they operate in order to reduce CO2 emissions. Governments must get involved and work with airlines to spur innovation and remove obstacles for airlines leading the environmental movement.

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#### Aviation’s carbon footprint is growing now – taking action like NextGen is key to promote fuel efficiency and promotes carbon-neutral growth

Giovanni Bisignani September 20, 2007 “Aviation and global warming” NYT Online http://www.nytimes.com/2007/09/20/opinion/20iht-edbisi.1.7583290.html

Nonetheless, aviation's carbon footprint is growing, and that is politically unacceptable for any industry. The challenge is to keep the many benefits of aviation - unprecedented global mobility that supports 32 million jobs and $3.5 billion worth of economic activity - while eliminating its negative impacts. The solution is not to return to the days when flying was reserved for the well-to-do by making it artificially expensive with even more taxes. Punitive economic measures like emissions trading will not have a big impact on aviation's environmental performance. With 28 percent of costs coming directly from fuel, the airline industry has the strongest incentive of any industry to keep fuel consumption low. Positive measures - tax credits to encourage faster re-fleeting or grants to fund alternative fuel research - would deliver better results. Unilateral European proposals to include aviation into its emissions trading scheme have put economic measures at the center of a political debate, partially fueled by the approaching Kyoto deadlines. But regional initiatives are no way to solve a worldwide issue. A meeting currently taking place in Montreal is our best opportunity for a global solution. Government leaders responsible for civil aviation are meeting at the Triennial Assembly of the International Civil Aviation Organization (ICAO). Environment tops their agenda. If emissions trading is going to be imposed on airlines, we must make sure it is effective. The ICAO needs to work towards a global emissions trading scheme that states could implement on a mutual consent basis. This is what the drafters of Kyoto had always envisaged. But the industry is pushing governments for much loftier goals. In June, I proposed a vision for the industry to aim for carbon-neutral growth in the medium-term and to develop zero-carbon emissions technology within 50 years. Since then, I have met with aircraft manufacturers, engine makers, fuel-suppliers and airlines. Nobody has all the answers, but no one said our goal was impossible. On the contrary, it is absolutely achievable. Remember, this is the industry that went from the Wright Brothers to the jet age in just five decades. The critical question is: How do we turn the vision into reality? The first part of the answer is efficiency. It is the best way to take us to carbon neutral growth. Airlines are investing billions of dollars in new, more fuel-efficient aircraft. In the last four decades, fuel efficiency increased 70 percent and will improve a further 25 percent by 2020. Better air traffic control, including straightening air routes, and more efficient operations can reduce fuel burn by 18 percent.

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#### Fast-tracking key

NBTA et al 2008 (last date cited) “Equipping Aircraft Will Create Jobs and Achieve Environmental & Safety Benefits Now” Stimulus request, online http://www.gbta.org/SiteCollectionDocuments/NewsReleases/ltrtoCongressreNextGenStimulusfundingJan09.pdf

Environmental Impact: According to FAA, the full implementation of NextGen could reduce greenhouse gas emissions from aircraft by up to 12 percent by 2025. This reduction in CO2 production is roughly equivalent to taking 2.2 million cars off the road for one year. As recently as May, 2008, the Government Accountability Office (GAO) recommended that NextGen technologies and procedures be deployed “as soon as practicable” to realize these environmental benefits. The GAO concluded that NextGen will allow for more direct routing, which will improve fuel efficiency and reduce carbon dioxide emissions, as well as the emission of other air pollutants such as carbon monoxide, sulfur oxides, particulate matter, nitrogen oxides, unburned hydrocarbons, hazardous air pollutants, and ozone. 1 Key pieces of NextGen include “Automated Dependent Surveillance – Broadcast” Out/In (ADSB Out/In). ADS-B Out/In components would provide controllers with much more precise aircraft position information, which safely enables closer separation standards and more efficient use of airspace, improving the passenger experience and economics, while also reducing emissions. Other critical components are performance-based navigation capabilities known as RNAV and RNP (Area Navigation and Required Navigational Performance) that are based on precise satellite navigation, which complements ADS-B benefits. One additional component, the 1 “NextGen and Research and Development Are Keys to Reducing Emissions and Their Impact on Health and Climate,” GAO Report GAO-08-706T, May 6, 2008. NextGen Stimulus Request – page 2 Electronic Flight Bag (EFB), provides an information management platform designed to significantly reduce the likelihood of runway incursions while also providing pilots access to navigation charts, surface moving maps and airport displays.

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#### Aviation is a huge source of emissions – outweighs other sources

Gareth Lacy “Attorney General Brown Calls For Aircraft Greenhouse Gas Emission Limits” December 5, 2007 http://ag.ca.gov/cms\_attachments/press/pdfs/n1501\_brownsdemandsaircraftemissionsrules2.pdf

Calling aviation a “large and rapidly growing source” of greenhouse gas emissions, California Attorney General Edmund G. Brown Jr. today petitioned the United States Environmental Protection Agency to adopt global warming regulations for aircraft. The request comes on the heels of a landmark petition filed last month that asked the EPA to set limits on greenhouse gas emissions from ocean-going vessels. “Aviation is a large and rapidly growing source of greenhouse gases and the EPA should have taken action by now to curb these emissions. Not to do so, ignores the tremendous opportunity for technological innovations that can increase efficiency and reduce emissions,” Attorney General Brown told a news conference at the Los Angeles International Airport. “Aircraft engines burn massive quantities of fossil fuels and inject greenhouse gas pollution at high altitudes—right where these emissions have a heightened negative impact.” According to estimates by the EPA, aircraft in 2005 contributed three percent of the United States’ total carbon dioxide emissions and 12 percent of the transportation sector emissions. The Federal Aviation Administration estimates that emissions from domestic aircraft will rise 60 percent by 2025, primarily due to expected increases in air transportation. Because aircraft release emissions at high altitudes, the impact of aviation on global warming is greater than other major greenhouse gas emission sources. When nitrous oxide, for example, is emitted at high altitudes it generates much greater concentrations of ozone than when it is emitted at ground-level.

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#### Warming is real and human caused- Prefer scientific consensus to their hack deniers

Lewandowsky and Ashley 2011 (Stephan Lewandowsky, Professor of Cognitive Studies at the University of Western Australia, and Michael Ashley, Professor of Astrophysics at the University of New South Wales, June 24, 2011, “The false, the confused and the mendacious: how the media gets it wrong on climate change,” http://goo.gl/u3nOC)

But despite these complexities, some aspects of climate science are thoroughly settled. We know that atmospheric CO₂ is increasing due to humans. We know that this CO₂, while being just a small fraction of the atmosphere, has an important influence on temperature. We can calculate the effect, and predict what is going to happen to the earth’s climate during our lifetimes, all based on fundamental physics that is as certain as gravity. The consensus opinion of the world’s climate scientists is that climate change is occurring due to human CO₂ emissions. The changes are rapid and significant, and the implications for our civilisation may be dire. The chance of these statements being wrong is vanishingly small. Scepticism and denialism Some people will be understandably sceptical about that last statement. But when they read up on the science, and have their questions answered by climate scientists, they come around. These people are true sceptics, and a degree of scepticism is healthy. Other people will disagree with the scientific consensus on climate change, and will challenge the science on internet blogs and opinion pieces in the media, but no matter how many times they are shown to be wrong, they will never change their opinions. These people are deniers. The recent articles in The Conversation have put the deniers under the microscope. Some readers have asked us in the comments to address the scientific questions that the deniers bring up. This has been done. Not once. Not twice. Not ten times. Probably more like 100 or a 1000 times. Denier arguments have been dealt with by scientists, again and again and again. But like zombies, the deniers keep coming back with the same long-falsified and nonsensical arguments. The deniers have seemingly endless enthusiasm to post on blogs, write letters to editors, write opinion pieces for newspapers, and even publish books. What they rarely do is write coherent scientific papers on their theories and submit them to scientific journals. The few published papers that have been sceptical about climate change have not withstood the test of time. The phony debate on climate change So if the evidence is this strong, why is there resistance to action on climate change in Australia? At least two reasons can be cited. First, as The Conversation has revealed, there are a handful of individuals and organisations who, by avoiding peer review, have engineered a phony public debate about the science, when in fact that debate is absent from the one arena where our scientific knowledge is formed. These individuals and organisations have so far largely escaped accountability. But their free ride has come to an end, as the next few weeks on The Conversation will continue to show. The second reason, alas, involves systemic failures by the media. Systemic media failures arise from several presumptions about the way science works, which range from being utterly false to dangerously ill-informed to overtly malicious and mendacious. The false Let’s begin with what is merely false. A tacit presumption of many in the media and the public is that climate science is a brittle house of cards that can be brought down by a single new finding or the discovery of a single error. Nothing could be further from the truth. Climate science is a cumulative enterprise built upon hundreds of years of research. The heat-trapping properties of CO₂ were discovered in the middle of the 19th century, pre-dating even Sherlock Holmes and Queen Victoria.

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#### Not inevitable – even if temporarily over the tipping point, can be brought back down.

Dyer 2009(Gwynne Dyer, MA in Military History and PhD in Middle Eastern History former [Senior Lecturer](file:///C:\wiki\Senior_Lecturer) in War Studies at the [Royal Military Academy Sandhurst](file:///C:\wiki\Royal_Military_Academy_Sandhurst), “Climate Wars,”)

There is no need to despair. The slow-feedback effects take a long time to work their way through the climate system, and if we could manage to get the carbon dioxide concentration back down to a safe level before they have run their course, they might be stopped in their tracks. As Hansen et al. put it in their paper: A point of no return can be avoided, even if the tipping level [which puts us on course for an ice-free world] is temporarily exceeded. Ocean and ice-sheet inertia permit overshoot, provided the [concentration of carbon dioxide] is returned below the tipping level before initiating irre­versible dynamic change .... However, if overshoot is in place for centuries, the thermal perturbation will so pen­etrate the ocean that recovery without dramatic effects, such as ice-sheet disintegration, becomes unlikely. The real, long-term target is 350 parts per million or lower, if we want the Holocene to last into the indefinite future, but for the remainder of this book I am going to revert to the 450 parts per million ceiling that has become common currency among most of those who are involved in climate change issues. If we manage to stop the rise in the carbon dioxide concentration at or not far beyond that figure, then we must immediately begin the equally urgent and arduous task of getting it back down to a much lower level that is safe for the long term, but one step at a time will have to suffice. I suspect that few now alive will see the day when we seriously start work on bringing the concen­tration back down to 350, so let us focus here on how to stop it rising past 450.

#### Unmitigated warming causes extinction

Mazo 2010 (Jeffrey Mazo, Managing Editor of Survival and Research Fellow for Environmental Security and Science Policy at the International Institute for Strategic Studies, March 2010, “Climate Conflict: How global warming threatens security and what to do about it”)

The best estimates for global warming to the end of the century range from 2.5-4.~C above pre-industrial levels, depending on the scenario. Even in the best-case scenario, the low end of the likely range is 1.goC, and in the worst 'business as usual' projections, which actual emissions have been matching, the range of likely warming runs from 3.1--7.1°C. Even keeping emissions at constant 2000 levels (which have already been exceeded), global temperature would still be expected to reach 1.2°C (O'9""1.5°C)above pre-industrial levels by the end of the century." Without early and severe reductions in emissions, the effects of climate change in the second half of the twenty-first century are likely to be catastrophic for the stability and security of countries in the developing world - not to mention the associated human tragedy. Climate change could even undermine the strength and stability of emerging and advanced economies, beyond the knock-on effects on security of widespread state failure and collapse in developing countries.' And although they have been condemned as melodramatic and alarmist, many informed observers believe that unmitigated climate change beyond the end of the century could pose an existential threat to civilisation." What is certain is that there is no precedent in human experience for such rapid change or such climatic conditions, and even in the best case adaptation to these extremes would mean profound social, cultural and political changes.

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#### It also causes huge resource wars and is a conflict multiplier

Klare 2006 (Michael Klare, professor of peace and world security studies at Hampshire College, March 10, 2006, “The Coming Resource Wars,” http://goo.gl/sPH9D)

It's official: the era of resource wars is upon us. In a major London address, British Defense Secretary John Reid warned that global climate change and dwindling natural resources are combining to increase the likelihood of violent conflict over land, water and energy. Climate change, he indicated, "will make scarce resources, clean water, viable agricultural land even scarcer" -- and this will "make the emergence of violent conflict more rather than less likely." Although not unprecedented, Reid's prediction of an upsurge in resource conflict is significant both because of his senior rank and the vehemence of his remarks. "The blunt truth is that the lack of water and agricultural land is a significant contributory factor to the tragic conflict we see unfolding in Darfur," he declared. "We should see this as a warning sign." Resource conflicts of this type are most likely to arise in the developing world, Reid indicated, but the more advanced and affluent countries are not likely to be spared the damaging and destabilizing effects of global climate change. With sea levels rising, water and energy becoming increasingly scarce and prime agricultural lands turning into deserts, internecine warfare over access to vital resources will become a global phenomenon. Reid's speech, delivered at the prestigious Chatham House in London (Britain's equivalent of the Council on Foreign Relations), is but the most recent expression of a growing trend in strategic circles to view environmental and resource effects -- rather than political orientation and ideology -- as the most potent source of armed conflict in the decades to come. With the world population rising, global consumption rates soaring, energy supplies rapidly disappearing and climate change eradicating valuable farmland, the stage is being set for persistent and worldwide struggles over vital resources. Religious and political strife will not disappear in this scenario, but rather will be channeled into contests over valuable sources of water, food and energy. Prior to Reid's address, the most significant expression of this outlook was a report prepared for the U.S. Department of Defense by a California-based consulting firm in October 2003. Entitled "An Abrupt Climate Change Scenario and Its Implications for United States National Security," the report warned that global climate change is more likely to result in sudden, cataclysmic environmental events than a gradual (and therefore manageable) rise in average temperatures. Such events could include a substantial increase in global sea levels, intense storms and hurricanes and continent-wide "dust bowl" effects. This would trigger pitched battles between the survivors of these effects for access to food, water, habitable land and energy supplies. "Violence and disruption stemming from the stresses created by abrupt changes in the climate pose a different type of threat to national security than we are accustomed to today," the 2003 report noted. "Military confrontation may be triggered by a desperate need for natural resources such as energy, food and water rather than by conflicts over ideology, religion or national honor." Until now, this mode of analysis has failed to command the attention of top American and British policymakers. For the most part, they insist that ideological and religious differences -- notably, the clash between values of tolerance and democracy on one hand and extremist forms of Islam on the other -- remain the main drivers of international conflict. But Reid's speech at Chatham House suggests that a major shift in strategic thinking may be under way. Environmental perils may soon dominate the world security agenda. This shift is due in part to the growing weight of evidence pointing to a significant human role in altering the planet's basic climate systems. Recent studies showing the rapid shrinkage of the polar ice caps, the accelerated melting of North American glaciers, the increased frequency of severe hurricanes and a number of other such effects all suggest that dramatic and potentially harmful changes to the global climate have begun to occur. More importantly, they conclude that human behavior -- most importantly, the burning of fossil fuels in factories, power plants, and motor vehicles -- is the most likely cause of these changes. This assessment may not have yet penetrated the White House and other bastions of head-in-the-sand thinking, but it is clearly gaining ground among scientists and thoughtful analysts around the world. For the most part, public discussion of global climate change has tended to describe its effects as an environmental problem -- as a threat to safe water, arable soil, temperate forests, certain species and so on. And, of course, climate change is a potent threat to the environment; in fact, the greatest threat imaginable. But viewing climate change as an environmental problem fails to do justice to the magnitude of the peril it poses. As Reid's speech and the 2003 Pentagon study make clear, the greatest danger posed by global climate change is not the degradation of ecosystems per se, but rather the disintegration of entire human societies, producing wholesale starvation, mass migrations and recurring conflict over resources. "As famine, disease, and weather-related disasters strike due to abrupt climate change," the Pentagon report notes, "many countries' needs will exceed their carrying capacity" -- that is, their ability to provide the minimum requirements for human survival. This "will create a sense of desperation, which is likely to lead to offensive aggression" against countries with a greater stock of vital resources. "Imagine eastern European countries, struggling to feed their populations with a falling supply of food, water, and energy, eyeing Russia, whose population is already in decline, for access to its grain, minerals, and energy supply." Similar scenarios will be replicated all across the planet, as those without the means to survival invade or

### NextGen Airports 1AC

migrate to those with greater abundance -- producing endless struggles between resource "haves" and "have-nots." It is this prospect, more than anything, that worries John Reid. In particular, he expressed concern over the inadequate capacity of poor and unstable countries to cope with the effects of climate change, and the resulting risk of state collapse, civil war and mass migration. "More than 300 million people in Africa currently lack access to safe water," he observed, and "climate change will worsen this dire situation" -- provoking more wars like Darfur. And even if these social disasters will occur primarily in the developing world, the wealthier countries will also be caught up in them, whether by participating in peacekeeping and humanitarian aid operations, by fending off unwanted migrants or by fighting for access to overseas supplies of food, oil, and minerals. When reading of these nightmarish scenarios, it is easy to conjure up images of desperate, starving people killing one another with knives, staves and clubs -- as was certainly often the case in the past, and could easily prove to be so again. But these scenarios also envision the use of more deadly weapons. "In this world of warring states," the 2003 Pentagon report predicted, "nuclear arms proliferation is inevitable." As oil and natural gas disappears, more and more countries will rely on nuclear power to meet their energy needs -- and this "will accelerate nuclear proliferation as countries develop enrichment and reprocessing capabilities to ensure their national security." Although speculative, these reports make one thing clear: when thinking about the calamitous effects of global climate change, we must emphasize its social and political consequences as much as its purely environmental effects. Drought, flooding and storms can kill us, and surely will -- but so will wars among the survivors of these catastrophes over what remains of food, water and shelter. As Reid's comments indicate, no society, however affluent, will escape involvement in these forms of conflict.

## Solvency

### NextGen Feasible

#### The most qualified experts think NextGen is feasible

PhysOrg.com December 16, 2009 “Next-Generation Air Transportation System to Ultimately Succeed, Computer Scientist Predicts” http://phys.org/news180186094.html

The Next Generation Air Transportation System, known as NextGen, is due for implementation across the United States in stages between now and 2018. To implement this new system, the Federal Aviation Administration will undertake a wide-ranging transformation of the entire air transportation system. “It is very well known that the current air transportation system is under increasing stress from gridlocks and delays,” says Dr. David Brown, professor of computer science at The University of Alabama and a nationally recognized expert on using database retrieval technology to help improve highway safety and FAA safety databases. “The recent computer problem in November with the FAA system that collects airlines’ flight plans caused widespread cancellations and delays.” The NextGen system moves from the current ground-based technologies to more dynamic satellite-based technologies. The first phase will be the automatic dependent surveillance-broadcast, which will use Global Positioning System satellite signals, and will begin after the proposed rule is finalized around 2010. “If history is any indicator, I would predict it will be a complete flop because they have tried this recently, but to no avail,” says Brown. “Given that they have to upgrade, however, I would think that perhaps they have learned from their past mistakes and instead of a big bang approach will do some smaller scale prototyping and testing. I also expect them to put a plan into effect to allow the new system to evolve concurrently as the old system is being phased out.” “So, I am predicting ultimate success and a system that will provide a much safer travel environment,” explains Brown.

### NextGen Feasible

#### NextGen is feasible- proven around the world- we have the tech

D.R. Stewart World Staff Writer 6/27/2010 Tulsa World “NextGeneration air traffic system holds new promise for airways” http://www.tulsaworld.com/business/article.aspx?subjectid=45&articleid=20100627\_45\_e1\_thenex600201

Federal authorities and the U.S. aerospace industry are taking significant steps toward implementing the Next Generation Air Transportation System (NextGen). A $40 billion-plus air traffic management system based on satellite navigation technologies, NextGen has been in the talking stages for a generation. But in recent months, two airlines and the Federal Aviation Administration have performed demonstration flights and tests of the new technologies that prove their groundbreaking capabilities, airline and government executives said. In Philadelphia, federal air traffic controllers using satellite-based Automatic Dependent Surveillance-Broadcast (ADS-B) technology are more precisely tracking aircraft, separating them in the sky and on the runways, producing greater efficiencies and increased margins of safety. "This new technology is a tremendous leap forward in transforming the current air traffic control system," said FAA Administrator Randy Babbitt in April at the conclusion of ADS-B tests. "The operational benefits in Philadelphia extend as far as Washington, D.C., and New York, which has some of the most congested airspace in the world." In Miami, Fla., American Airlines and Air France flights originating in Paris in April used NextGen technologies to shorten routes and flight times, reduce fuel consumption and carbon emissions, while lowering aircraft noise levels on final approach and landing. American Flight 63 on a Boeing 767-300 aircraft from Paris Charles De Gaulle Airport to Miami International Airport demonstrated several fuel conservation measures, including single-engine taxi on departure and arrival, continuous climb and descent profiles, optimized routing over water and a "tailored" arrival, American executives said. "It is critical that the aviation industry work with our air traffic control partners to demonstrate the benefits of NextGen technology today," said Bob Reding, American's executive vice president of operations. "Utilizing NextGen technology is also a crucial part of American's overall environmental and fuel savings efforts, which have already yielded annual fuel savings of more than 110 million gallons and a reduction of 2.2 billion pounds of carbon emissions." American Airlines has been a pioneer in the use of NextGen or global positioning satellite navigation systems. In 1990, American published the first area navigation flight procedures for approaches and landings at mountain-ringed Eagle-Vail (Colo.) Airport. "Before NextGen had a name, American Airlines was using similar techniques in Colorado," said Brian Will, a 22-year American pilot who heads the airline's NextGen program. "We were taking delivery of (Boeing) 757 aircraft, which have a great combination of high thrust and dual flight management computers. We looked at some airports that had operational challenges — mostly at high altitude mountain airports. "It started a movement of using on-board avionics to fly these airplanes. American Airlines and other big airlines have been prepared to move forward with NextGen for quite a while." Traditional air navigation systems are based on World War II-era ground-based radar. Radar signals cannot penetrate mountains, bad weather or reach across oceans, so coverage in some instances is limited, industry officials say. ADS-B and other NextGen technologies use global positioning satellite signals along with aircraft cockpit avionics to transmit the aircraft's location to ground receivers. The ground receivers then transmit the information to controller screens and cockpit displays on aircraft equipped with ADS-B avionics. ADS-B allows pilots to see for the first time other aircraft in the sky around them, increasing the margin for safety. It allows air traffic controllers to more precisely identify aircraft locations and their proximity to other aircraft. Aircraft separation distances can be reduced with the use of more accurate NextGen technologies, industry officials say. The U.S. air-traffic system handles 35,000 to 37,000 commercial aircraft flights a day. At any one moment, 5,000 aircraft are in the sky over the United States, said FAA spokesman Paul Takemoto. "With the development of the new technology, we are given a significant amount of new information," Will said. "When all of this technology is working well, it is very very beneficial.

### Investment solvency – 3:1

#### Each dollar invested returns three.

National Aerospace Week, September 11-17, 2011. “Aerospace and Defense: Second to None,”

http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

Every dollar invested in the aerospace industry has a triple effect. It helps retain good jobs in the United States; creates the products that bring significant revenues from other countries and provides security and economic benefits that flow uniquely from America’s civil aviation, defense and space defense leadership. The aerospace and defense industry takes great pride in contributing to our nation’s success, and, with the appropriate policies and resources will remain a source of economic strength for generations to come. After all, this industry in Second to None.

## Economy Adv

### Econ solvency – delays

#### NextGen solves flight delays – multiplier effect on growth.

Balakrishnan 2008. Hamsa Balakrishnan, researcher for MIT and recipient of the 2008 NSF CAREER award for aerospace research. http://www.ee.washington.edu/research/nsl/aar-cps/HamsaBalakrishnan-20081017210834.pdf

The air transportation system, which began in the 1920s as a means of transporting passengers and mail between a handful of airports within the United States, has evolved into a large, complex system which interacts with global and regional economies, and which transports 2.1 billion passengers and 39 million tons of freight per year. The steady increase in both passenger and cargo ﬂights has led to an increase in ﬂight delays, both in terms of the number of ﬂights incurring delays, and the total amounts of delay incurred. The Joint Economic Committee of the US Senate estimates that commercial aviation delays cost U.S. airlines more than $19 billion per year in direct operating costs alone. With air transportation having become the backbone of global commerce, the indirect costs to passengers and businesses are much higher, and are estimated to be about $41 billion annually. The demand for air trafﬁc in the United States is expected to increase to between 2 and 3 times current values by the year 2025. Similar growth in demand is expected in Europe, while emerging markets such as China, the Middle East and India are expected to see even larger increases in air trafﬁc operations. As a result, congestion delays will increase unless new air trafﬁc management solutions are developed and implemented. This realization has motivated research efforts in both the United States (NextGen), and Europe (SESAR).

### Econ solvency – jobs

#### American manufacturers will profit no matter what – selling parts overseas.

National Aerospace Week, September 11-17, 2011. “Aerospace and Defense: Second to None,”

http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

Government policies that advance free and fair trade in global markets are vital to our industry and our country. Aerospace brings in the largest foreign trade surplus of any manufacturing sector — that is American economic growth funded by demand for U.S. aerospace products. 7 The industry’s $51 billion surplus in 2010 came from exporting 50 percent of all aerospace production and 74 percent of civil aircraft and component production. 8 Aerospace exports of $77.5 billion accounted for 6 percent of total U.S. exports and supported 50 percent, or 324,033, of U.S. aerospace jobs. From the smallest supplier to the largest prime, U.S. aerospace manufacturers are world leaders in the global marketplace.

#### NextGen would create 80,000 high-paying jobs across sectors.

NBTA et al 2008 (last date cited) “Equipping Aircraft Will Create Jobs and Achieve Environmental & Safety Benefits Now” Stimulus request, online http://www.gbta.org/SiteCollectionDocuments/NewsReleases/ltrtoCongressreNextGenStimulusfundingJan09.pdf

Approximate Economic and Employment Impacts: Using the FAA methodology for calculating jobs created, it is estimated that an infusion of $4 billion in funding for NextGen would generate 77,000 jobs. The methodology referenced is a multiplier system developed by FAA’s Aviation Policy, Plans and Environment Office, based on Bureau of Labor Statistics figures, which estimates the number of jobs that would be created for each $1 million invested in NextGen: • Aircraft Equipage: 24 jobs per million invested • Construction: 21 jobs per million invested • Research & Development: ranges from 32-36 jobs per million invested In September 2008, passenger airline employment fell to 397,400, marking the first plunge below 400,000 since the Bureau of Transportation Statistics began maintaining these figures in 2003. It also marked a decline of 22,400 jobs from December 2007 and 68,300 jobs since 2003. The jobs created will be high paying jobs - -both manufacturing jobs and jobs created by the installation and maintenance of the equipage. A viable aviation sector enhances economic activity in a wide number of industries outside aviation including, among many others, travel and tourism and industries that rely on just in time global inventories and shipping capability.

### Trade solvency – efficiency

#### American Airlines proves – efficiency is killing the major players in the industry.

Douglas A. McIntyre, 24/7 Wall St. June 21, 2012. “Bye, bye American -- and other brands that likely will be gone In '13,” http://lifeinc.today.msnbc.msn.com/\_news/2012/06/21/12341233-bye-bye-american-and-other-brands-that-likely-will-be-gone-in-13?lite

Each year, 24/7 Wall St. identifies 10 important American brands that we predict will to disappear within a year. This year’s list reflects the brutally competitive nature of certain industries and the reason why companies cannot afford to fall behind in efficiency, innovation or financing. American Airlines will disappear in 2013 because of its inefficiency. It was the premier carrier in the United States for almost 30 years -- even surviving through periods when most other carriers went bankrupt. However, it lost its critical advantage of scale when Northwest merged with Delta and Continental merged with United. Within two years, American became a medium-sized carrier.

#### Next-generation airline reform in the U.S. solves global aviation efficiency.

FAA 2011 Federal Aviation Administration Annual report for Fiscal Year 2011. http://www.faa.gov/about/plans\_reports/performance/quarter\_scorecard/media/detail/NextGen%20Technology.pdf

Global harmonization of NextGen components (influencing others to investigate NextGen solutions) will incrementally elevate global reliance on U.S. aviation ground and airborne technologies and procedures. This will in turn, over time, standardize a higher percentage of the global air traffic control system with that of the U.S. NAS. The result will be a more familiar, safe, efficient and environmentally friendly operating environment around the world for U.S. citizens traveling abroad on U.S. or foreign air carriers.

### Trade solvency – development

#### Aviation efficiency shores up trade ties – attracts small markets and developing economies

Federal Aviation Administration October 2008. “The Economic Impact of Civil Aviation on the US Economy”http://www.faa.gov/about/office\_org/headquarters\_offices/ato/media/2008\_Economic\_Impact\_Report\_web.pdf

Express air cargo is a growth industry that encourages effective networking and collaboration between companies. It has overall increased the standards of living throughout the United States and the world. Many communities within the U.S. strongly promote air cargo development as a means to enhance their ability to attract high-tech industries that prefer to ship their products by air. From 2005 to 2006, the air cargo industry increased by 7.7 percent in its output, earnings change and job change. Air cargo operations can provide a competitive advantage to regional economic development efforts. Efficient air cargo access can provide a tangible marketing tool for attracting new businesses. Developing economies have become major players in the world trade due to growth in the air cargo business. Express air cargo carries high value finished goods quickly from manufacturer to consumer, cutting inventory costs and driving high levels of customer satisfaction. The primary benefit of these cargo services is that they facilitate the success of other parts of the national and global economy. It enables businesses dependent on fast delivery to customers to locate in regions that are not necessarily close to their market. Express delivery services are increasingly important as they continually boost the competitiveness of companies, assist in winning export markets and encourage investment. Today for example, more than 90 percent of all U.S. zip codes are covered by FedEx express air cargo

### Trade Impact Extension

#### Trade Solves conflict- stats prove

Evan E. Hillebrand (Professor of Diplomacy at University of Kentucky and a Senior Economist for the Central Intelligence Agency) 2010 “Deglobalization Scenarios: Who Wins? Who Loses?” Global Economy Journal, Volume 10, Issue 2 2010

A long line of writers from Cruce (1623) to Kant (1797) to Angell (1907) to Gartzke (2003) have theorized that economic interdependence can lower the likelihood of war. Cruce thought that free trade enriched a society in general and so made people more peaceable; Kant thought that trade shifted political power away from the more warlike aristocracy, and Angell thought that economic interdependence shifted cost/benefit calculations in a peace-promoting direction. Gartzke contends that trade relations enhance transparency among nations and thus help avoid bargaining miscalculations. There has also been a tremendous amount of empirical research that mostly supports the idea of an inverse relationship between trade and war. Jack Levy said that, “While there are extensive debates over the proper research designs for investigating this question, and while some empirical studies find that trade is associated with international conflict, most studies conclude that trade is associated with peace, both at the dyadic and systemic levels” (Levy, 2003, p. 127). There is another important line of theoretical and empirical work called Power Transition Theory that focuses on the relative power of states and warns that when rising powers approach the power level of their regional or global leader the chances of war increase (Tammen, Lemke, et al, 2000). Jacek Kugler (2006) warns that the rising power of China relative to the United States greatly increases the chances of great power war some time in the next few decades. The IFs model combines the theoretical and empirical work of the peacethrough trade tradition with the work of the power transition scholars in an attempt to forecast the probability of interstate war. Hughes (2004) explains how he, after consulting with scholars in both camps, particularly Edward Mansfield and Douglas Lemke, estimated the starting probabilities for each dyad based on the historical record, and then forecast future probabilities for dyadic militarized interstate disputes (MIDs) and wars based on the calibrated relationships he derived from the empirical literature. The probability of a MID, much less a war, between any random dyad in any given year is very low, if not zero. Paraguay and Tanzania, for example, have never fought and are very unlikely to do so. But there have been thousands of MIDs in the past and hundreds of wars and many of the 16,653 dyads have nonzero probabilities. In 2005 the mean probability of a country being involved in at least one war was estimated to be 0.8%, with 104 countries having a probability of at least 1 war approaching zero. A dozen countries12, however, have initial probabilities over 3%. model predicts four great power wars in the deglobalization scenario vs. 2 in the globalization scenario.16 The globalization scenario projects that the probability for war will gradually decrease through 2035 for every country—but not every dyad--that had a significant (greater than 0.5% chance of war) in 2005 (Table 6). The decline in prospects for war stems from the scenario’s projections of rising levels of democracy, rising incomes, and rising trade interdependence—all of these factors figure in the algorithm that calculates the probabilities. Not all dyadic war probabilities decrease, however, because of the power transition mechanism that is also included in the IFs model. The probability for war between China and the US, for example rises as China’s power13 rises gradually toward the US level but in these calculations the probability of a China/US war never gets very high.14 Deglobalization raises the risks of war substantially. In a world with much lower average incomes, less democracy, and less trade interdependence, the average probability of a country having at least one war in 2035 rises from 0.6% in the globalization scenario to 3.7% in the deglobalization scenario. Among the top-20 war-prone countries, the average probability rises from 3.9% in the globalization scenario to 7.1% in the deglobalization scenario. The model estimates that in the deglobalization scenario there will be about 10 wars in 2035, vs. only 2 in the globalization scenario15. Over the whole period, 2005-2035, the IV. Winners and Losers Deglobalization in the form of reduced trade interdependence, reduced capital flows, and reduced migration has few positive effects, based on this analysis with the International Futures Model. Economic growth is cut in all but a handful of countries, and is cut more in the non-OECD countries than in the OECD countries. Deglobalization has a mixed impact on equality. In many non-OECD countries, the cut in imports from the rest of the world increases the share of manufacturing and in 61 countries raises the share of income going to the poor. But since average productivity goes down in almost all countries, this gain in equality comes at the expense of reduced incomes and increased poverty in almost all countries. The only winners are a small number of countries that were small and poor and not well integrated in the global economy to begin with—and the gains from deglobalization even for them are very small. Politically, deglobalization makes for less stable domestic politics and a greater likelihood of war. The likelihood of state failure through internal war, projected to diminish through 2035 with increasing globalization, rises in the deglobalization scenario particularly among the non-OECD democracies. Similarly, deglobalization makes for more fractious relations among states and the probability for interstate war rises.

## Aerospace Adv

### NextGen Key to Aerospace

#### Key to aerospace competitiveness

PAUL LOWE 2-1-2012 “AIA: Civil Aircraft Sales Shine in U.S. Aerospace” Aviation International News, Online http://www.ainonline.com/aviation-news/aviation-international-news/2012-02-01/aia-civil-aircraft-sales-shine-us-aerospace

AIA president and CEO Marion Blakey said the association is projecting “a much different year” for 2012. “Looking ahead to [2012], we expect aerospace sales to decrease by about half a billion,” she told more than 300 members of the news media, government and industry at the AIA’s 47th annual year-end review and forecast luncheon in December. “Under sequestration, our industry faces exposure all around,” Blakey said. “Not only are the defense cuts unsustainable, but domestic discretionary programs could be cut by about 7 percent as well, including deeper cuts to NASA, NOAA and critical FAA programs such as NextGen.” AIA expects declines in nearly every product group except civil aviation. Space sales are projected to decrease by about $1 billion, and military aircraft sales are predicted to drop by $1.5 billion. Civil aircraft sales will be driven in large part by rising commercial air traffic and high fuel prices, as both continue to spur world airlines to replace older, less fuel-efficient aircraft with newer models. “These trends, combined with rapid growth in air travel in Asia and the Middle East, continue to create demand,” the former FAA Administrator said. “And that demand continues to call out the need for NextGen, the Next Generation Air Transportation System.” AIA said that preliminary sales figures of $218 billion make 2011 the eighth consecutive year of growth, despite “significant headwinds and under the cloud of recession.” Aircraft and parts orders jumped to an estimated $204.8 billion, an increase of $8 billion over 2010. Backlog rose by $20 billion, to nearly $463 billion, compared with 2010. According to the association, these numbers indicate an ongoing rebound since the downturn seen in 2009.

### NextGen Key to Aerospace

#### NextGen key to aviation leadership – failing now

Marion C. Blakey 30 Apr, 2012 is president and chief executive officer of the Aerospace Industries Association. Ms. Blakey was chair of the National Transportation Safety Board. http://www.tradeandindustrydev.com/Industry/Aerospace%20%2526%20Defense/importance-us-aerospace-and-defense-industry-secon-6402

Sequestration will hit the aerospace/defense industry hard. In addition to cuts to DOD, it will target the non-defense discretionary budget, including NASA and the Federal Aviation Administration, which have both suffered from a lack of long-term financial commitment for important programs. While the recent enactment of a long-term FAA funding bill offers real hope for progress on the Next Generation Air Transportation System, if sequestration kicks in, NextGen will be delayed and we might as well relinquish the keys to U.S. aviation leadership. Sequestration would also cut into an already lean NASA budget, stalling our efforts to develop space exploration programs in the wake of the retirement of the shuttle program. A major recent report that AIA commissioned Deloitte to perform concluded that the aerospace and defense industry “punches above its weight.” The state-by-state analysis of a number of economic measures reports that in 2010 the industry had revenues of $324 billion and employment of 3.5 million workers (direct, indirect and induced). The average salary of an aerospace employee is $80,000 compared to the national average of $44,000. The estimate for all taxes paid is $58 billion, which is on top of a positive trade balance of $42 billion, the largest of any business sector. Indeed, an industry that packs not just a punch, but a pretty strong wallop. Concerned about the impact of sequestration on the industry, AIA also commissioned an analysis by Dr. Stephen Fuller, a noted economist with George Mason University, who with Economic Modeling Specialists, Inc. concluded that more than one million jobs would be lost as a result of defense budget cuts if Congress fails to agree on deficit reduction to replace the scheduled cuts before next January. The one million figure includes 352,000 aerospace and defense and supply chain job losses. The total loss of wages and salaries would exceed $59 billion and .6 percent would be added to our unemployment rate, which today stands at approximately eight percent. In addition, the cuts would likely chop about $86 billion off of GDP in 2013 alone, driving economic growth down by 25 percent. One of the primary concerns is the risk to the defense industrial base. The danger is that cuts will go too deep, and valuable and hard-to-replace capability will be lost. Technologists, engineers and visionaries who will lead the development of the new manned bomber and the cyber, unmanned and ISR capabilities that Secretary of Defense Leon Panetta called for in the nation’s new defense strategy may no longer be there when they’re needed. This important talent pool isn’t sitting in some lab waiting for a call from Congress and the Pentagon. As projects are cancelled and the budget is cut, these talented people will move into other industries.

### NextGen Key to Aerospace

#### NextGen key to aerospace competitiveness

AIN 2006 “Aerospace Industry Responds to GAO Report” Aviation International News Online November 9 http://www.ainonline.com/aviation-news/aviation-international-news/2006-11-09/aerospace-industry-responds-gao-report

“The GAO report recognized the progress NASA has made in the space sector of the industry with the establishment of a national vision to return humans to the moon with the eventual destination of Mars,” said AIA president and CEO John Douglass, who was a member of the commission. “However, as the GAO report points out, restructuring of NASA to support the space vision is threatening the vitality of the aerospace industry with drastic cuts in aeronautics funding, which has plummeted by 40 percent since 1994.” AIA said that continued erosion of aeronautics funding will affect the ability of the nation to build the Next Generation Air Transportation System (NGATS), thereby affecting the competitiveness of the U.S. aerospace industry. AIA believes NASA’s budget should be more robust to allow the agency to accomplish all the activities in its portfolio: space exploration and science and aeronautics research.

### Federal Government Key

#### Federal government action key to leadership

GAO 2006 “Progress in Implementing Aerospace Commission Recommendations, and Remaining Challenges” Page 40 September. http://www.gao.gov/new.items/d06920.pdf

The federal government’s support of R&D has been critical to maintaining the nation’s global leadership in the aerospace industry. For example, government-supported research enabled the development of jet engine technologies that helped U.S. commercial and military aircraft manufacturers achieve global prominence. According to industry statistics, aerospace companies are funding an increasing portion of industrial R&D than they did in the past. 1 In fiscal year 2003, the most recent year for which data are available, federal funds supported 48 percent of industry R&D in the aerospace industry, whereas in 1999 the federal share was 63 percent. Nevertheless, the federal role remains significant. Federal Support of R&D Remains Critical to the Aerospace Industry Industrial R&D tends to focus on technology development that is specific to individual company products. As a result, company funding is significantly lower for basic and applied research than for development. According to aerospace industry statistics, federal dollars fund the majority of the basic and applied research performed by the aerospace industry, whereas most development is funded by companies themselves. In dollar terms, development expenditures, by both companies and the federal government, are much higher than research expenditures. Nonetheless, federal funds provide the dominant share of applied research support, in particular. Aerospace industry experts told us that, if industry is to benefit from federally funded basic and applied research, new technologies must be developed to a relatively high level to be easily applied to product development. Likewise, our prior work has found that technologies with a high level of maturity are more likely to be applied successfully to product development projects. An individual company is unlikely to invest its own money in basic and applied research that offers uncertain payoffs and might benefit competitors.

### Aerospace Key to Air Power

#### A strong aerospace industry boosts airpower – Innovation and supply

Grant 09 [Rebecca Grant, Director of the Marshall Institute for Airpower studies, worked in the operations group of the Chief of Staff of the Air Force, for the Secretary of the Air Force, and for RAND Corp. In 1995 ; “The Vanishing Arsenal of airpower” October 30, 2009]

We really count more than anything else on programs to sustain the aerospace 7industrial base. It is programs that train people across time. I was told that the average age of individuals working on the C-17 is just over 50 years of age, I believe; and the average experience of these individuals is over 20 years. This is not something that you recapture quickly. It's not a level of expertise that you can get quickly by bringing in new people and training them while you're supposed to be working on the production line. It's something that takes program, after program, after program to sustain. We saw this very clearly in the development of the stealth technologies where Lockheed and Northrop contended over a long period of time on different programs, and where government policy deliberately kept them both working on similar requirements to see which one would do best. One would win one competition and then the other would win the next one. What it created was a very fruitful development of the skill set for advanced stealth aircraft design. What we have in this decade I think is simply the end of the road of the program-based production model that has sustained the aerospace industry. So when we hear the larger reports about the defense sector from the Defense Science Board or AIA and others, we're really looking here at a sector that has reached this point of crisis. We simply now do not know whether we have the base to sustain what really matters—people, innovation, the ability to produce to requirement, and on schedule. A friend of mine told me a couple days ago that he and a colleague of his had put together a list of the ten most likely aircraft programs for this decade, and as they looked down them they would simply cross out every one that they thought would probably never go forward. A key example being the next generation bomber. He never really told me what the final number was that they came up with for the number of programs we might see, but I've taken a stab at it here and I'm sure you all have thought of similar things. Perhaps if we were to make this list again several years from now we'd say right we have two tankers and they competed. I think we should all hope we get to the point that we have two tankers that can compete and that there can be a tanker procurement going forward. We may have a light utility aircraft, we may have a light attack aircraft, we may have a stealthy UAV. The Navy has announced plans for a Super Hornet follow-on, but with not a lot of clarity about what that is as yet, and I think probably within their budgets not a lot of sense yet of how they will get there. F-22s probably need a replacement program as well because under the extremely small fleet that we will now have the first retirements of the F-22s are likely to begin shortly after 2020. If you consider that the Navy is looking at 2024 as a milestone in its next fighter program you can see that we are already well inside the point where we need to be thinking about this. But I want to make two points on this chart. One, someone I respect a great deal said yesterday this is the first time that any of us can remember when there have been no new major military fixed wing aircraft programs going forward; no new fighter types; no 8new bomber types. We'll see potentially others with a question mark over what we may or may not see with airlift. The first time anyone can remember that this has been the case. And it simply gets us into a period where the risk is impossible even to assess or calculate. The second point is, I was asked to go up to New York in about ten days from now and speak to an investor's conference on Wall Street. These are always fun because it's fun to see exactly how young all these hedge fund managers really are as they sit there and tap on their I-phones while everyone's briefing. And so I talked to my friend at what used to be Merrill Lynch, and there's great complaining about how it used to be Merrill Lynch and now it's Bank of America. Anyway up we will all go. And I said well what do you want me to talk about? He said well talk about the Air Force and, you know, what they're doing. I had gone to the same conference last year and I started off talking about airpower in Afghanistan because I wanted everyone to understand everyone's really pretty fully engaged in Afghanistan, Iraq around the world. Then my friend says of course you know what these folks want to find out is what's the Air Force going to buy? I said well that could be a very short chart indeed, and I'm struck that even more than this time last year when you could say well we may do some of this or we may do some of that and this may stay and this may go away and F-35 still looks really strong, we don't know what's going to happen in several other areas. The picture now is simply very weak. One cannot in all conscience stand up in front of a group of these late 20 and 30 something's who want to know what is going to get bought so they can rate all the buy and sell of new companies, and say that we expect to buy much of anything. It's simply not in the plan, and how remarkable this is that we have come to this point in time. I think some of it is quite natural; a lot of it is planned. You all have heard me talk before about the crisis in the Combat Air Forces, about the plans to replace larger inventories with smaller but more capable inventories. We all support and believe in that, and yet now it has truly come to a point when there are great questions about how this industry will look going forward.

### Aerospace Key to Air Power

#### Aerospace is key to airpower – Jets

Grant 09 [Rebecca Grant, Director of the Marshall Institute for Airpower studies, worked in the operations group of the Chief of Staff of the Air Force, for the Secretary of the Air Force, and for RAND Corp. In 1995 ; “The Vanishing Arsenal of airpower” October 30, 2009]

For this reason I would say that the Air Force and the Navy particularly should look to take a more active role in working with what remains of the aerospace industry to see where they can best place investments and particularly to consider how they will plan for the future. I think we'd all agree that not enough of that is going on at this point. And finally, to lead into my concluding slide, we do need to invest in technology. Technology for future threats, technology that will help us keep our lead not only for the wars we are in. And I have one great example of why that is so, and that is the jet age. Although the research and the conceptualization of the jet engine was done in the 1930s—quite a lot of it by Mr. Whittle in England—jets did not become a big part of air combat in World War II. Now they were enough of a concern to cause some pretty serious bomber raids to help slow the production of the ME-262, but the early jets just didn't have the performance and the heft and the muscle required to do the air campaigns of World War II. And as it turned out the US managed to fly two early jet demonstrators. The first one here in the middle and the second one down below during the war. Even the ME-262 had a number of production problems generally related to the engine as well as other things. But had we decided to buy what worked in World War II we would have bought more B-51s, more P-38s, more B-36s—a type developed then, who knows how we would have managed reconnaissance, and we might miss the entire development of the jet age. A development that in its earliest years was critical to have the strength of the military research behind it before it became the wonderful expansive commercial market that we know today. Invest just for the wars that you're in and you might miss something of incredible importance to the future. Well the jet age certainly provided a very bright period of time for the aerospace industry and some tremendous military capabilities. One can only hope that whatever comes next in this industry will take us by surprise much as the idea of the initial turbojet did with Mr. Whittle in England. But somewhere it will come out of a brilliant mind or a brilliant program manager's team and that we will see a flourishing future for the aerospace industry. The path to that is very unclear at this point in time. We need to understand the risks and we need to have the impulse to move forward. Thanks for your time.

### Air Power key to Heg

#### Air Power can sustain hegemony – it outweighs sea power and land power

**Douglas 02,** Department of Political Science at Columbia University [Francis "Scott" Colin, ISA Annual Convention in New Orleans, <http://www.isanet.org/noarchive/douglas.html>]

Logically air power should hold pride of place within both the political science and policy-oriented study of coercion. Since aircraft can strike a wider array of targets than land or sea-bound forces, Robert Pape argues the study of air power can cut to the core of the larger coercion debate because it "most cogently reveals the relative effectiveness of different coercive strategies." (Pape Bombing to Win 39) As Pape goes on to argue, Unlike land power, [air power] can reach deep into the enemy's homeland from the outset of a conflict, and it promises to achieve its effects at sharply lower cost in lives than land power. Unlike sea power, bombing can focus on specific categories of targets, attacking either political, economic, population, or military targets in isolation or combination. Given adequate intelligence, air power can also attack selective target sets within these categories, which can be helpful if, for example, there are bottlenecks in key industries.(Bombing to Win 45) Therefore, analyzing the success or failure of air campaigns provides more than policy-relevant answers to a narrow military question; it provides a rigorous test of different coercive theories which have been operationalized for real-world application. Air campaigns also warrant close study because they are becoming the military tool-of-choice for statecraft, particularly for the United States. As Eliot Cohen notes, "air power is an unusually seductive form of military strength, in part because, like modern courtship, it appears to offer gratification without commitment." (Cohen Mystique of US Air Power 109) Raising the stakes even further, Cohen recently argued that air power as seen in its recent incarnation over Kosovo begins to reveal the strengths and limitations of the emerging "New American Way of War." (Cohen Kosovo and the New American Way of War in Bacevich & Cohen)

### Air Power key to Heg

#### Air power is key to deal with irregular opponents – preserves overall power

**Wyne, 8** – Michael W. Wynne, Secretary of the Air Force [“Sovereign Options: Securing Global Stability and Prosperity A Strategy for the US Air Force”, Air University, Strategic Studies Quarterly, <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA508798&Location=U2&doc=GetTRDoc.pdf>]

The most common threats the United States faces, however, come from weaker state and nonstate actors. At least since the fall of the Soviet Union, the most common problems the US military has faced come from oppo­ nents that engage in “salami-slicing” tactics. Our opponents are as familiar as we are with the Weinberger Doctrine. 2 hey know that we prefer to fight wars where political objectives are clear and where vital national interests are unquestionably at stake. hey take advantage of this by nibbling away at the edges of stability. When should the United States have acted against al-Qaeda and its state sponsors? When it began raising money and training killers at its bases in Sudan? When it co-opted the government of Afghanistan? When it bombed US embassies in Tanzania and Kenya? When it attacked the USS Cole? Against a country that has only one military option—all-or-nothing wars—asymmetric tactics are a powerful weapon. In a similar vein, our opponents have become adept at choosing the location and types of conflicts we fight to pit their strengths against our weaknesses. Islamic radicals’ terror bombing of US targets in the United States and around the world before /11 is an example of the enemy choosing where we fight. Iraqi and Afghan rebels’ use of guerrilla warfare in ongoing conflicts is an example of enemies choosing the type of conflict to suit their own strengths. Again, against a country armed with only one option for fighting wars, this strategy can be effective. Nor are al-Qaeda and various rebel groups the only opponents who have attempted to exploit the US preference for all-or-nothing war. The last two decades contain a rogues’ gallery of opponents that have used these methods. Sudanese, Somali, and Rwandan killers have launched genocide cam­paigns within their own borders knowing that their actions would probably not elicit a full-scale US invasion. Leaders in North Korea and Iran have taken advantage of the US global preoccupation to pursue nuclear weapons knowing the United States is unlikely to launch another regime change at­ [ 10 ] Strategic Studies Quarterly ♦ Spring 2008 Wynne.indd 11 2/7/08 8:13:48 AM Sovereign Options tempt aimed at either country. The United States cannot deter them with an option they believe the United States will not employ. One can wonder whether these asymmetric tactics are having an impact on America’s ability to perform its global mission. If not stopped, these tactics could eat away at international stability and wear down US military capabilities and political will. After seven years of the most intense and sustained operations since the Vietnam War, our tactical forces are described as stressed. Our strate­ gic forces are on hold, with minimum modernization and despite our great maintainers, aging and in general decline. After most US forces left Iraq, the Air Force stayed to contain that regime through Operations Northern and Southern Watch. Eighteen years later we are still there. Year after year, we put of recapitalizing our inventory. Today we are lying the oldest equip­ ment in our history. As our opponents modernize their air and space technol­ ogy, we are focusing our investment budgets on fighting current wars. As our strategic margin is whittled away, so is our capability to deter and dissuade our most dangerous competitors. It is our strategic forces, not our tactical forces, that deter our major-power opponents. Unless their general decline can be arrested and modernization efforts restored, the US military will eat into the margin we have enjoyed for decades and risk its ability to perform its most important function.

### Air Power Key to Solve NoKo

US airpower is key to combat the three elements of North Korea’s asymmetric triad – long-range artillery, missiles and special forces  
Bruce **Bechtol Jr**. , Assistant Professor of National Security Studies at Air Command and Staff College, **05** [Air & Space Power Journal, “The Future of US Airpower on the Korean Peninsula”, Fall 2005, http://www.airpower.au.af.mil/airchronicles/apj/apj05/fal05/bechtol.html#bechtol /Ghosh]

Even if all of these systems could operate at peak efficiency and immediately integrate effectively into current or future C4I infrastructures, they would still need heavy augmentation by effective airpower in both their offensive and defensive postures. North Korea simply has more long-range artillery systems deployed along the DMZ than ground-based systems could destroy all at once—particularly in a first-strike scenario. Of course, this is exacerbated by the concerns about C4I, which will probably remain an issue in ROK-US alliance talks for the foreseeable future. Thus, in terms of the first element of North Korea’s asymmetric triad (long-range artillery), airpower will continue to play an essential role in deterring and destroying that threat. Because of the unique and unmatched capability of US fighter and attack aircraft to suppress this type of target, American airpower has become extremely important to countering this growing threat—and will likely remain so for many years as Seoul continues to upgrade its C4I and airborne-strike capabilities. Regarding the second element of the triad (missiles), US airpower is an absolutely vital deterrent, now and in the future, against a first strike by the North Koreans, who have a large number of dispersed missile facilities (as well as mobile launchers, which they have not only deployed but also proliferated to other nations, such as Syria).20 In case of war, ROK-US forces would need to take out Scud missile sites and launchers as well as longer-range missiles because North Korea might use the latter to launch a retaliatory strike at Japan (perhaps at US bases located at Okinawa or elsewhere) (fig. 4). To do so, the US Air Force would use its assets on the Korean Peninsula (Seventh Air Force), in Japan (Fifth Air Force), on Guam (bombers), and elsewhere in Pacific Air Forces, where US airpower possesses unique and vital capabilities for the defense of the Korean Peninsula.21 US airpower will continue to play a key role as well in countering special forces, the third element of North Korea’s asymmetric triad. Clearly, US Air Force aircraft would figure prominently in the suppression and destruction of North Korean airfields, from which platforms (most of them AN-2s) carrying SOF troops would deploy, and in support of the South Korean air force’s aerial interception of enemy transport aircraft conducting paradrop missions into the South. But this represents only part of the story. Because North Korea has far more SOF troops than aircraft to carry them, many of these forces would attempt to infiltrate South Korea through weaker areas of the DMZ. Two such locations include the inter-Korean transportation corridors, where roads and rail lines are being repaired for future transportation routes and where barbed-wire barriers and mines have been cleared away (fig. 5). Airpower would track and kill attempted infiltrations through these zones.

### North Korea = War

#### The threat is real and outweighs all their defense

Bennett ‘8 Bruce W., senior policy analyst at RAND, “A new national strategy for korea: north korea threats require deterrence, reconciliation” Rand institute, Online

For almost six decades, the North Korean threat to invade and conquer the South has driven South Korean military planning and requirements. Throughout this period, Seoul has depended on its alliance with the United States to help deter or defeat this threat. In recent years, South Korea has been pursuing self-reliant military capabilities, hoping to someday fully assume the defense responsibility. Today, many postulate that the North Korean invasion threat has substantially atrophied. South Korean and U.S. conventional forces have made substantial qualitative improvements in recent years. Though the North Korean military capabilities are uncertain, its conventional forces have made few improvements while aging significantly. Deterred from an invasion decades ago, many argue that North Korea should therefore be even more deterred and less of a threat today. There are three basic problems with this depiction of the threat. First, unable to pursue broad military modernization, North Korea has developed a series of asymmetric capabilities designed to challenge South Korea. These capabilities could be used coercively, in limited attacks. For example, North Korean long-range artillery could roll out of its forward underground facilities and begin firing at Seoul at any time. Just one battery of six long-range multiple rocket launchers could cause dozens to even thousands of casualties in northern or central Seoul, especially if North Korea fired chemical weapons. North Korea has dozens of artillery batteries that could damage Seoul, and many hundreds that could affect areas closer to the Demilitarized Zone. Israel faced such an attack from the Hezbollah in Lebanon in 2006. Despite Israeli conventional superiority over Hezbollah, it was unable to stop the rocket launches. Nuclear weapons are North Koreas greatest military threat. One nuclear weapon like that dropped on Hiroshima could kill or incapacitate several hundred thousand people if detonated in Seoul. The resulting economic damage to South Korea could be several hundred trillion won, even before secondary effects are considered. North Korea has already threatened both South Korea and Japan with turning their cities into a sea of fire, an apt depiction of nuclear weapon effects. Second, even if a North Korean invasion of South Korea failed, it would impose a severe price on the Korean people. Over a decade ago, the U.S. commander in Korea estimated that hundreds of thousands could be killed. North Koreas asymmetric capabilities — including nuclear, biological, and chemical weapons and related delivery means — could add substantially to this damage. In the extreme case, these asymmetric threats might allow outdated North Korean conventional forces to achieve some invasion success. Third, North Koreas real intent is difficult to know, and could change rapidly. North Korea is clearly deterred from invading South Korea today. But has North Korea actually abandoned its policy of conquering South Korea, a goal that still pervades its military doctrine? Or is it simply trying to create conditions where the United States will disengage from Korea and leave North Korea free to exercise military coercion against South Korea? If Kim Jong-il suddenly found himself in very desperate, regime-threatening circumstances, might he decide to embrace conflict as a means for gaining the support of rebellious groups in the North? Or if Kim died, could the regime fail and lead to internal chaos into which South Korea and perhaps China would eventually be forced to intervene for humanitarian and security purposes?

### Terrorism = War/Extinction

#### Retaliation following even an unsuccessful terrorist attack would kill hundreds of millions.

Easterbrook 01 Greg, The new republic, November 1, http://www.cnn.com/TRANSCRIPTS/0111/01/gal.00.html accessed 7/10/03

GREENFIELD: Now, finally, Mr. Easterbrook, speaking of ghastly, should a terrorist organization be able to get a nuclear weapon into the United States or Western Europe, Eastern Europe, and blow up something and kill tens of thousands of people, what's the United States response? It's not like attacking a country that bombed us if we don't quite know who this is. What could we possibly do about that? EASTERBROOK: Well, what held through the Cold War, when the United States and Russia had thousands of nuclear weapons pointed at each other, what held each side back was the fact that fundamentally they were rational. They knew that if they struck, they would be struck in turn. Terrorists may not be held by this, especially suicidal terrorists, of the kind that al Qaeda is attempting to cultivate. But I think, if I could leave you with one message, it would be this: that the search for terrorist atomic weapons would be of great benefit to the Muslim peoples of the world in addition to members, to people of the United States and Western Europe, because if an atomic warhead goes off in Washington, say, in the current environment or anything like it, in the 24 hours that followed, a hundred million Muslims would die as U.S. nuclear bombs rained down on every conceivable military target in a dozen Muslim countries.

### Terrorism = War/Extinction

#### It is the stated mission of Bin Laden and Al Qaeda to gain access of WMDs and detonate them on U.S. soil.

John Brennan and Dennis Blair 2009 (Brennan-fmr. CIA official and station chief, Blair- then Director of National Intelligence) "Al Qaeda Seen as the Primary Terrorist Threat for Many Years" <http://www.hstoday.us/content/view/9715/150/>

“Adaptive and highly resilient,” Al Qaeda “remains the most serious terrorist threat we face as a nation,” said former career CIA official John Brennan in a speech last Thursday at the Center for Strategic and International Studies in Washington, DC. A former CIA analyst, Saudi Arabia station chief, the Agency's daily intelligence briefer to the White House in 1994 and 1995, deputy executive director and chief of staff to former DCI George Tenet, Brennan today is President Obama’s principal advisor on counterterrorism. Brennan acknowledged that Al Qaeda’s “intent to carry out attacks against the United States and US interests around the world - with weapons of mass destruction if possible - remains undiminished, and another attack on the US homeland remains the top priority for the Al Qaeda senior leadership.” Brennan stated. And it will for decades to come, Director of National Intelligence Dennis Blair earlier told the Senate Select Committee on Intelligence. “We assess that Al Qaeda and its regional affiliates will continue to plot against the US and its interests abroad over the next twenty years,” Blair stated in his written responses to questions that were posed to him pursuant to the Committee’s February 12 annual hearing on national threats. That Al Qaeda and its fundamentalist jihadist allies will remain a persistent threat to the United States for many years to come is a point that’s been stressed by other past and present federal counterterrorism officials. Blair described the best he could in his unclassified answers to the Committee members’ questions what the Intelligence Community currently believes about Al Qaeda. His answers were obtained in response to a Freedom of Information Act request to the Office of the Director of National Intelligence by Steven Aftergood, director of the Federation of American Scientists’ Project on Government Secrecy. “Al Qaeda has an undiminished intent to attack the US and remains the primary terrorist threat to the US homeland and interests overseas,” Blair told the Committee. “Al Qaeda consistently aspires to conduct a major attack against the US homeland, and to focus resources on conducting attacks against US and Allied interests overseas as well as against perceived ‘apostate regimes.’” Blair said Al Qaeda “has shown interest in recruiting and training Western individuals to execute attacks,” and that “the Intelligence Community continues to look for indications of Al Qaeda having contacts and/or sleeper cells in the US.” Dr. Walid Phares, an adjunct professor at the National Defense University School for National Security Executive Education, director of the Future of Terrorism Project at the Foundation for Defense of Democracies and author of, “Future Jihad: Terrorist Strategies against the West,” and “The War of Ideas: Jihadism against Democracy,” said earlier this month that “there are three models of Jihadists operating in North America: The ones sent by Al Qaeda, the ones who seek Al Qaeda, and those who have no connection to Al Qaeda but act along its goals.” [Editor’s note: Walid Phares wrote the November 2006 Homeland Security Today cover feature, “Education versus Jihad”] The threat of Al Qaeda sleeper cells in the United States, especially cells operationally linked to Al Qaeda in Pakistan and Somalia, two strongholds for the terrorist organization, are particularly worrisome. Blair said “the FBI continues to investigate individuals with ties to militants in Pakistan’s Federally Administered Tribal Areas (FATA), a region that Al Qaeda, the Taliban, and other militant groups have been able to exploit as a safe haven and use as a training ground for internal and external operations programs.” Continuing, Blair told lawmakers that “in years past, Al Qaeda’s adaptable decision-making process, bench of skilled operatives, and operational redundancies have enabled the group to maintain planning efforts, and quickly identify and appoint effective replacements in the event of the death or capture of key individuals.” “Since the beginning of 2008,” Blair explained, “Al Qaeda has weathered the deaths of a variety of highly experienced and long-time operatives, forcing the organization to draw upon younger, less experienced individuals to fill some critical positions. These individuals are probably more untested in the formulation, planning, and execution of attacks and their future effectiveness in these new positions in unclear.” Buttressing what Brennan said about Al Qaeda’s desire to obtain WMDs, Blair told the Committee that “we continue to receive intelligence indicating that Al Qaeda and other terrorist groups are attempting to acquire chemical, biological, radiological and nuclear (CBRN) weapons and materials.” Blair said “we assess Al Qaeda will continue to try to acquire and employ CBRN material, and that some chemical and radiological materials and crude weapons designs are easily accessible. Al Qaeda is the terrorist group that historically has sought the broadest range of CBRN attack capabilities, and we assess that it would use any CBRN capability it acquires in an anti-US attack, preferably against the homeland.” Last January, Charles Faddis, a 20-year veteran CIA officer who was a National Counterterrorism Center department chief overseeing “worldwide operations against the terrorist WMD target” when he retired from the clandestine services last year, told HSToday.us that “biological weapons are the most likely” terrorist WMD threat right now.” Faddis said terrorists are probably more likely to try to use biological weapons in the near future, noting that such an attack would “be devastating and it would totally cause catastrophic casualties.” Speaking at a Washington Institute Special Policy Forum in January, Ken Wainstein, then Assistant to President Bush for Homeland Security and Counterterrorism, stressed that the gravest terrorism threat right now is from “terrorist organizations [acquiring] weapons of mass destruction and [using] them against us, our homeland, or our allies.” Blair said that while “we assess that the death of Al Qaeda’s leading CBRN expert, Abu Khabab Al Masri, last July will cause temporary setback to the group’s efforts … its ability to shift responsibility to other senior leaders and existing trained replacements will enable it to recover.” Al Qaeda leader Usama bin Laden made clear more than a decade ago that it’s the duty of the jihadist organization to use WMDs in catastrophic attacks against the US and its allies if it is able to get its hands on such weapons. Blair said of bin Laden that he “continues to act as the spiritual leader of Al Qaeda and figurehead of the jihadist movement – using Al Qaeda’s media wing Al Sahab to issue statements to followers worldwide – and is vital to Al Qaeda’s ability to remain the self-appointed vanguard of global jihad.” “Despite likely being isolated from much of the group’s day-to-day activity,” Blair said, “he probably offers guidance on overall strategy as much as security precautions allow.” Blair said he was unable to discuss in his unclassified answers what the Intelligence Community knows about bin Laden’s “whereabouts.”

### Terrorism = War/Extinction

#### Nuclear terrorism is the most probable scenario for extinction.

Hellman 2008 [Martin E. Hellman, emeritus prof of engineering @ Stanford, “Risk Analysis of Nuclear Deterrence” SPRING 2008 THE BENT OF TAU BETA PI, http://www.nuclearrisk.org/paper.pdf]

The threat of nuclear terrorism looms much larger in the public’s mind than the threat of a full-scale nuclear war, yet this article focuses primarily on the latter. An explanation is therefore in order before proceeding. A terrorist attack involving a nuclear weapon would be a catastrophe of immense proportions: “A 10-kiloton bomb detonated at Grand Central Station on a typical work day would likely kill some half a million people, and inflict over a trillion dollars in direct economic damage. America and its way of life would be changed forever.” [Bunn 2003, pages viii-ix]. The likelihood of such an attack is also significant. Former Secretary of Defense William Perry has estimated the chance of a nuclear terrorist incident within the next decade to be roughly 50 percent [Bunn 2007, page 15]. David Albright, a former weapons inspector in Iraq, estimates those odds at less than one percent, but notes, “We would never accept a situation where the chance of a major nuclear accident like Chernobyl would be anywhere near 1% .... A nuclear terrorism attack is a low-probability event, but we can’t live in a world where it’s anything but extremely low-probability.” [Hegland 2005]. In a survey of 85 national security experts, Senator Richard Lugar found a median estimate of 20 percent for the “probability of an attack involving a nuclear explosion occurring somewhere in the world in the next 10 years,” with 79 percent of the respondents believing “it more likely to be carried out by terrorists” than by a government [Lugar 2005, pp. 14-15].SPRING 2008 THE BENT OF TAU BETA PI 15 I support increased efforts to reduce the threat of nuclear terrorism, but that is not inconsistent with the approach of this article. Because terrorism is one of the potential trigger mechanisms for a full-scale nuclear war, the risk analyses proposed herein will include estimating the risk of nuclear terrorism as one component of the overall risk. If that risk, the overall risk, or both are found to be unacceptable, then the proposed remedies would be directed to reduce whichever risk(s) warrant attention. Similar remarks apply to a number of other threats (e.g., nuclear war between the U.S. and China over Taiwan). This article would be incomplete if it only dealt with the threat of nuclear terrorism and neglected the threat of fullscale nuclear war. If both risks are unacceptable, an effort to reduce only the terrorist component would leave humanity in great peril. In fact, society’s almost total neglect of the threat of full-scale nuclear war makes studying that risk all the more important. The Cost of World War II The danger associated with nuclear deterrence depends on both the cost of a failure and the failure rate.3 This section explores the cost of a failure of nuclear deterrence, and the next section is concerned with the failure rate. While other definitions are possible, this article defines a failure of deterrence to mean a full-scale exchange of all nuclear weapons available to the U.S. and Russia, an event that will be termed World War III.

## Warming Adv

### NextGen Solves Warming

#### Next Gen key to solve warming

AIAA September 2011 “Aerospace and Defense: Second to None” Aerospace Industries Association of America Online http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

The aerospace industry knows it has an obligation to grow responsibly and it understands that environmentally sustainable growth is not only good for the planet, but also good for the economic health of the industry and the nation. Aviation is working diligently to develop better aircraft, technology and operating procedures to conserve fuel and reduce emissions. NextGen is a key enabler of environmental stewardship. Delays in today’s air traffic control system result in millions of gallons of fuel wasted annually — more than 4.3 million hours of delays in 2007 11 consumed an additional 740 million gallons of jet fuel, costing carriers more than $1.6 billion. 12 The delays produced approximately 7.1 million metric tons of carbon dioxide. NextGen operational procedures and implementing technology can help reduce emissions by enhancing engine and airframe technologies. NextGen will build on aviation’s progress in reducing CO2, which is particularly challenging given projected traffic growth and global concern about aviation’s effect on the environment. Innovative engine design, airframes, avionics and materials together have resulted in 90 percent fewer Americans exposed to significant aircraft noise and a 70 percent improvement in civil aviation fuel efficiency since the late 1960s. Innovation is driven by necessity, as fuel costs are the largest single expenditure for the airlines. Moreover, the industry is leading the way in research on sustainable alternative fuels. Besides the positive impact on the bottom line, there are obvious positive environmental impacts from these efforts.

#### Airline industry causes warming now and will continue to increase emissions without NextGen

Piyush Diwan 08/07/2007 “Aviation Industry is Contributing more to Global Warming – Environmentalists” http://topnews.in/aviation-industry-contributing-more-global-warming-environmentalists

Others NGO’s also identify that boom in the aviation market is a main trouble since global warming is on the increase. "The average plane releases close to one tonne of carbon dioxide for each passenger it carries from London to New York. Scientists say that high-altitude emissions are more damaging to the environment. Nitrogen dioxide from airline engines leads to formation of ozone and they are worried about the impact of cirrus clouds formed because of airline travel, which they believe in turn contribute to global warming," says Sunita Narain, Director, Centre for Science and Environment.

### NextGen Solves Warming

#### NextGen makes aviation far more efficient, saving fuel and reducing emissions

#### GAO, 2008 (Gerald L. Dillingham, Ph.D., Director of Physical Infrastructure Issues, May 26th, “AVIATION AND THE ENVIRONMENT Nextgen and Research and Development Are Keys to Reducing Emissions and Their Impact on Health and Climate”, [http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=732a37f5-b8b5-491c-970a-7ddfd14b2fa2%40sessionmgr11&vid=2&hid=19#](http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=732a37f5-b8b5-491c-970a-7ddfd14b2fa2%40sessionmgr11&vid=2&hid=19))

Two key federal efforts, if implemented effectively, can help to reduce aviation emissions—near-term NextGen initiatives and R&D over the longer term to fully enable NextGen and reduce aircraft emissions. Some NextGen technologies and procedures, such as satellite-based navigation systems, should allow for more direct routing, which could improve fuel efficiency and reduce carbon dioxide emissions. According to FAA, the full implementation of NextGen could reduce greenhouse gas emissions from aircraft by up to 12 percent by 2025. Federal R&D efforts—led primarily by FAA and NASA and often conducted in collaboration with industry and academia—have achieved significant reductions in aircraft emissions over the last 30 years, and FAA and NASA officials and aviation experts agree that such efforts are the most effective means of achieving further reductions in the longer term. As part of the a national plan for aeronautics R&D, issued by the White House Office of Science and Technology Policy, the federal government supports a comprehensive approach to R&D on aviation emissions involving FAA, NASA, and other federal agencies that is intended both to improve scientific understanding of the impact of aviation emissions and to develop new technologies, fuels, and air traffic management approaches. Better understanding of the nature and impact of aviation emissions can inform the development of lower emitting alternative fuels, more efficient air traffic management technologies and procedures, and more fuel-efficient aircraft engines.

### NextGen Solves Warming

#### NextGen takes a layered approach to reduce emissions and develop a sustainable aviation industry

#### **FAA, 2012** (Federal Aviation Administration, February 2012,, “NextGen and the Environment”, <http://www.faa.gov/nextgen/media/nextgenAndTheEnvironment.pdf>)

NextGen will produce environmental benefits. We are developing NextGen capabilities that will guide and track aircraft more precisely and efficiently in the air and on the ground to save fuel, decrease emissions and manage the impact of noise on communities. In addition, we are advancing efforts to reduce aircraft fuel burn, emissions and noise through innovative aircraft technologies and to reduce aviation lifecycle emissions through the development of alternative aviation fuels. FAA is developing the NextGen environmental management System (emS) Framework to identify and manage aviation-related environmental issues and enhance environmental collaboration among aviation stakeholders. EMS will integrate (sic) environmental protection objectives into NextGen plans and facilitate National Environmental Policy Act (NEPA) reviews. EMS aims to ensure that the environmental benefits of NextGen are maximized while constraints are identified and reduced or avoided. The FAA also plans to use the EMS framework to improve NEPA processes and coordination. the Continuous Lower energy, emissions, and Noise (CLeeN) program will reduce the environmental impact of aircraft through new engine and airframe technologies and by advancing the use of sustainable alternative aviation fuels. Our aim is to accelerate development of quieter commercial aircraft that burn less fuel and produce lower emissions than existing technology. the Aviation environmental design tool (Aedt) is a software system that dynamically models aircraft performance in space and time to more effectively evaluate aircraft noise, fuel consumption and emissions. AEDT will allow airspace designers and environmental planners to analyze the environmental impacts of potential airspace changes and use that information to optimize airspace redesign. Fuel-saving Performance Based Navigation (PBN) capabilities and procedures create more direct, fuel efficient routes that will reduce emissions, including greenhouse gas emissions. Enabled by satellite and other technologies, PBN routes and procedures free aircraft from ground-based navigation and can be altered in response to changing conditions, such as bad weather. the FAA sponsors the Commercial Aviation Alternative Fuels initiative (CAAFi), which focuses on enhancing energy security and environmental sustainability for aviation by exploring the use of alternative jet fuels. CAAFI aims to promote the development and deployment of alternative fuels that offer equivalent levels of safety and compare favorably with petroleum-based jet fuel on cost and environmental bases. CAAFI is co-sponsored by the Aerospace Industries Association, Airlines for America and Airports Council International–North America. Its stakeholders include U.S. government agencies, the international commercial aviation industry, fuel suppliers and universities.

### NextGen Solves Warming

#### Next Gen key to solve warming

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### Fast-tracking Key

#### Action now is key—annual CO2 output is set to double before NextGen starts in 2025

Environmental News Service, 2008 (International Daily Newswire, May 7th, “Supressed Aviation Report Forecast ‘Massive Environmental Damage”, <http://www.ens-newswire.com/ens/may2008/2008-05-07-04.asp>)

Calling it a "shock report," the Aviation Environment Federation says that between the years 2000 and 2025 the rapid growth in aviation globally is set to generate "massive environmental damage "Emissions of the greenhouse gas carbon dioxide from aviation are forecast to more than double - from 572 million metric tonnes in 2000 to 1,229 million metric tonnes in 2025. "Aviation emissions on this scale run a severe risk of overwhelming all CO2 reduction targets," said Jeff Gazzard of the Aviation Environment Federation, AEF. But the latest UK Department for Transports projection of future aviation emissions, released in November 2007 contains a 2050 figure for aviation carbon dioxide of 60.3 million tonnes - way below the figures in the suppressed report. Emissions of nitrogen oxides, which cause air pollution around airports and at high altitude, are predicted in the report to more than double - from 2.5 million tonnes to 6.1 million tonnes.

### Airplanes Warm The Earf

#### Causes warming now and will continue to increase emissions without NextGen

Piyush Diwan 08/07/2007 “Aviation Industry is Contributing more to Global Warming – Environmentalists” http://topnews.in/aviation-industry-contributing-more-global-warming-environmentalists

Others NGO’s also identify that boom in the aviation market is a main trouble since global warming is on the increase. "The average plane releases close to one tonne of carbon dioxide for each passenger it carries from London to New York. Scientists say that high-altitude emissions are more damaging to the environment. Nitrogen dioxide from airline engines leads to formation of ozone and they are worried about the impact of cirrus clouds formed because of airline travel, which they believe in turn contribute to global warming," says Sunita Narain, Director, Centre for Science and Environment.

#### Their studies only assume CO2 – but airlines are major emitters of other GHGs

Steven M. Taber is an environmental attorney with the Irvine, California law firm Taber Law Group. Oct 3rd, 2010 “Climate Change Impacts of the Aviation Industry” EHS Journal Online

First, how much aviation contributes to climate change is still open to debate. Several governmental and aviation industry organizations have been reporting a “less than 3 percent” number for quite some time ,while environmental groups, particularly in Europe, claim that the percentage is anywhere from 5 to 9 percent. In examining the claims and counterclaims concerning emissions of GHG, one has to be very careful about the language and the metrics used in determining the impact that any given industry will have on climate change. Many reports and studies focus only on CO2; however, there are other gases and anthropogenic actions that exacerbate climate change. For example, the U.S. Environmental Protection Agency (EPA) recently proposed regulations that would require major emitters of six “greenhouse gases” to report their emissions to the EPA on an annual basis. These six greenhouse gases are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), perfluorochemicals (PFCs), and other fluorinated 20 gases (e.g., nitrogen trifluoride and hydrofluorinated ethers [HFEs]). It also should be kept in mind when discussing climate change, especially with respect to aviation, that water vapor is estimated to contribute anywhere from 36 to 72 percent of the greenhouse effect. This is important because the radiative forcing effect of cirrus cloud formation from the aircraft is a significant contributor to the greenhouse effect. As pointed out above, it is generally accepted that for aviation the GHGs of concern are CO2, nitrogen oxides (NOx), aerosols and their precursors (soot and sulfate), and increased cloudiness in the form of persistent linear contrails and induced-cirrus cloudiness.

### A2 NextGen causes warming

#### No impact to the turn – NextGen is adaptable

JPDO Feb 28 2007 Joint Planning and Development Office “Concept of Operations for the Next Generation Air Transportation System “ p. 7-5 http://www.iata.org/whatwedo/documents/nextgenconopsv12.pdf

The NextGen seeks to create a dynamic and flexible airspace, capable of supporting a tripling in demand by 2025 in all phases of flight in an environmentally sustainable manner. An agile air traffic system based on advanced cockpit avionics, satellite navigation, and dynamic airspace has enhanced ability and flexibility to maximize routings for fuel efficiency and emissions. The NextGen has the ability to address relevant environmental impacts dynamically on a continuing real-time basis, replacing the current more rigid structure of federal review linked to federal actions with respect to the airspace. Environmental performance is embedded in the overall performance of the air traffic system, supported by EMS goals, including the availability of upto-date critical system information. Consistent with EMS principles, a holistic but flexible approach is used to manage key environmental issues as they pertain to specific geographic regions and to the system as a whole. This approach accounts for variations at an individual component level (e.g., airports or air carriers); adaptive frameworks implemented by individual components account for their specific needs while also contributing to system-level requirements. This includes the determination of critical environmental impacts in terminal airspace as well as emerging environmental requirements associated with en route portions of air travel. While environmental impacts and potential constraints of terminal airspace are currently better understood than those associated with en route airspace, there is significant uncertainty associated with 2025 projections for both. Therefore, the primary capability of the environmental management framework is its ability to adapt to the dynamic nature of the air traffic system, which may be affected by unforeseen national or international economic market fluctuations, changes in societal norms, emerging technologies, or other events (e.g., major natural disasters or terrorist attacks). This framework is facilitated by a dynamic airspace structure and includes environmental management embedded into en route flight planning on an ongoing and real-time basis. New technology enables optimized route selection during landing and take-off procedures that are based on minimizing the impact of noise and air emissions, minimizing costs and fuel burn, and maximizing route efficiency and safety. An example consists of the establishment of environmentally friendly operational procedures (e.g., CDA) for all traffic conditions. [R-131]

### Warming Causes Extinction

#### Warming causes extinction

Tickell 2008 (Oliver Tickell, Climate Researcher, The Gaurdian, August 11, 2008, “On a planet 4C hotter, all we can prepare for is extinction”, http://www.guardian.co.uk/commentisfree/2008/aug/11/climatechange)

We need to get prepared for four degrees of global warming, Bob Watson told the Guardian last week. At first sight this looks like wise counsel from the climate science adviser to Defra. But the idea that we could adapt to a 4C rise is absurd and dangerous. Global warming on this scale would be a catastrophe that would mean, in the immortal words that Chief Seattle probably never spoke, "the end of living and the beginning of survival" for humankind. Or perhaps the beginning of our extinction. The collapse of the polar ice caps would become inevitable, bringing long-term sea level rises of 70-80 metres. All the world's coastal plains would be lost, complete with ports, cities, transport and industrial infrastructure, and much of the world's most productive farmland. The world's geography would be transformed much as it was at the end of the last ice age, when sea levels rose by about 120 metres to create the Channel, the North Sea and Cardigan Bay out of dry land. Weather would become extreme and unpredictable, with more frequent and severe droughts, floods and hurricanes. The Earth's carrying capacity would be hugely reduced. Billions would undoubtedly die.

#### Human caused CO2 emissions cause extinction

Brandenburg and Paxon 1999 (John E. Brandenburg (physicist rocket scientist, Mars expert, investigator on MET project, NASA technical advisor, former member of space transport subcommittee) Monica Rix Paxon (writer and scientific editor) Dead Mars, Dying Earth, 1999, p.46 - 47

Gradually, incrementally, we are changing Earth’s atmosphere. But are we slowly altering our atmosphere away from something that supports human life toward something deadly like the atmosphere of Mars? Such an atmosphere would have been very familiar to Joseph Black, who isolated the very first atmospheric gas. Unitarian minister Joseph Priestley would have recognized the atmosphere of Mars as well. So would coal miners from the early part of the 20th century and the canary that lay gasping at the bottom of the cage, for the atmosphere of Mars is made of fixed air. The atmosphere of Mars is made of blackdamp. The atmosphere of Mars is made of carbonic acid gas. The atmosphere of Mars is made of a substance that has over time had many names reflecting the toxic side of its nature. While today we call all of them “carbon dioxide” (which we think of as a benign product of our own bodies and the harmless bubbles in soda pop), this substance has clearly not always been viewed as a harmless gas. Nor should it be in the future, for it is time once again to inform our opinions about this substance and recognize its invisible, dark side. As long as a stylus attached to the monitoring equipment in some lonely station on the top of an inactive volcano in Hawaii continues to etch a line ratcheting upward—showing the increased amounts of carbon dioxide that, year after year, flood our atmosphere, threatening us—then we too must think of it very differently. It isn’t a matter of speculation. It is a matter of hard, cold scientific fact supported by numerous studies conducted by many respected scientists.’7~ In the overwhelming majority they agree: Earth’s atmosphere has far too much of what we now must think of as carbon die-oxide. It is warming our planet to the point where life, human life, is endangered. We are going to have to do something decisive and effective about this killer. No matter how successful or enlightened we think ourselves to be, we are not exempt from the need to act—in the same way that we are not exempt from the need to breathe.

### Warming Causes War

#### Climate change makes war more likely

Shachtman 2008—(Noah. Contributor to the dangeroom.com.“Nation’s Spies: Climate Change Could Spark War.” June 23, 2008. <http://www.wired.com/dangerroom/2008/06/environmental-g/> Accessed: 8/16/09)

Environmental groups have been warning for years that tense parts of the world could get even worse with the advent of global climate change, and even spark whole new conflicts. Now, the nation’s spies are saying pretty much the same thing. The U.S. intelligence community has finished up its classified assessment of how our changing weather patterns could contribute to "political instability around the world, the collapse of governments and the creation of terrorist safe havens," Inside Defense reports. Congress was briefed on the report last week. And on Wednesday, leading spies — including National Intelligence Council chairman Dr. Thomas Fingar and Energy Department intelligence chief Rolf Mowatt-Larsen — will testify on the Hill about the 58-page document, "The National Security Implications of Global Climate Change Through 2030." In addition to examining how weather could add stress to governments with a weak grip on power … the authors mulled a spectrum of second- and third-order consequences for Washington policymakers to consider — including indirect security concerns like impacts on economies, energy, social unrest and migration. Foreign-policy concerns were also weighed, including how flooding, rising water levels or drought might create humanitarian crises. Also examined was how extreme weather events could challenge the response capabilities of governments around the world. "Climate change is a threat multiplier in the world’s most unstable regions," a source familiar with the document tells Danger Room. "It’s like a match to the tinder." Just think about the fights over water already under way in the Middle East and Africa, or the tensions exacerbated by the hurricanes and tsunamis in Asia.

#### More evidence—Will cause wars

Shachtman 2008—(Noah. Contributor to the dangeroom.com.“Nation’s Spies: Climate Change Could Spark War.” June 23, 2008. <http://www.wired.com/dangerroom/2008/06/environmental-g/> Accessed: 8/16/09)

But the nation’s military leadership, at least, is paying closer attention. "Climate change and other projected trends will compound already difficult conditions in many developing countries. These trends will increase the likelihood of humanitarian crises, the potential for epidemic diseases, and regionally destabilizing population migrations," the Army says in its 2008 posture statement. "We are [f]acing challenges from multiple sources: a new, more malignant form of terrorism inspired by jihadist extremism, ethnic strife, disease, poverty, climate change, failed and failing states, resurgent powers, and so on," Defense Secretary Robert Gates told an audience at American University in April.

### AT Ice Age

#### We have already burned enough CO2 to keep us out of an ice age for at least 55,000 years.

Newkerala, 2-11-09 Controlling man made emissions may delay start of next ice age http://www.newkerala.com/topstory-fullnews-91308.html

Ice ages start when conditions at high northern latitudes allow winter snowfall to persist over the summer for enough years to accumulate and build ice sheets. Such conditions depend mainly on summer solar radiation there and atmospheric CO2 concentration. This radiation is modulated on time scales of 20.000, 40.000 and 100.000 years by changes in the Earth's orbit and orientation. Critical summer solar radiation for initiating ice sheet growth can be significantly lower for higher atmospheric CO2 with its greenhouse warming effect. Professor Shaffer made long projections over the next 500,000 years with the DCESS Earth System Model to calculate the evolution of atmospheric CO2 for different fossil fuel emission strategies. He also used results of a coupled climate-ice sheet model for the dependency on atmospheric CO2 of critical summer solar radiation at high northern latitudes for an ice age onset. The results show global warming of almost 5 degrees Celsius above present for a "business as usual" scenario whereby all 5000 billion tons of fossil fuel carbon in accessible reserves are burned within the next few centuries. According to Professor Shaffer, humanity has already increased atmospheric CO2 enough to keep it out of the next ice age for at least the next 55,000 years.

#### We have already burned enough fossil fuels to put off the next ice age; and no impact to ice age, they end abrubtly.

Ike Solem 7 March 2008 at 5:21 PM http://www.realclimate.org/index.php/archives/2008/03/the-global-cooling-mole

The modern picture seems to be that ice ages tend to end abruptly, but the onset of an ice age is gradual, driven by changes in sunlight across the northern land masses and decreasing atmospheric CO2 levels. So, we might have been past the warmest period of this most recent interglacial, and beginning a slow, multi-thousand year descent into a new ice age - until we changed the atmospheric composition.However, we’ve added so much fossilized carbon to the atmosphere that we’re now approaching double anything seen in the glacial CO2 record. The Mauna Loa record shows that we’re currently at 384 ppm, increasing at 2 ppm per year. This carbon may stay in the atmosphere for a very long time. This may very well put off the next ice age entirely:Next Ice Age Delayed By Rising Carbon Dioxide LevelsDr Tyrrell said: ‘Our research shows why atmospheric CO2 will not return to pre-industrial levels after we stop burning fossil fuels. It shows that it if we use up all known fossil fuels it doesn’t matter at what rate we burn them. The result would be the same if we burned them at present rates or at more moderate rates; we would still get the same eventual ice-age-prevention result.’

### AT Ice Age

#### Most studies conclude no natural ice age coming for 10,000 years

Revkin, environment reporter, 2008 Andrew C., “Skeptics on human climate impact seize on cold spell, NEW YORK TIMES, March 02

Despite the recent trend toward global warming, scientists have long wondered whether the Earth is nearing a new ice age, an end to the 12,000-year temperate spell in which civilizations arose. Some have said such a transition is overdue, given that each of the three temperate intervals that immediately preceded this current one lasted only about 10,000 years. But now, in an eagerly awaited study, a group of climate and ice experts say they have new evidence that Earth is not even halfway through the current warm era. The evidence comes from the oldest layers of Antarctic ice ever sampled. Some scientists earlier proposed similar hypotheses, basing them on the configuration of Earth's orbit, which seems to set the metronome that ice ages dance to. Temperature patterns deciphered in sea sediments in recent years backed the theory. But experts say the new ice data are by far the strongest corroborating evidence, revealing many similarities between today's atmospheric and temperature patterns and those of a warm interval, with a duration of 28,000 years, that reached its peak 430,000 years ago. The findings are described Thursday in the journal Nature in a report by the European Project for Ice Coring in Antarctica. The evidence comes from a shaft of ice extracted over five grueling years from Antarctica's deep-frozen innards, composed of thousands of ice layers formed as each year's snowfall was compressed over time. The deepest ice retrieved so far comes from 10,000 feet deep and dates back 740,000 years. The relative abundance of certain forms of hydrogen in the ice reflects past air temperatures. Many ice cores have been cut from various glaciers and ice sheets around the world, but until now none have gone back beyond 420,000 years. "It's very exciting to see ice that fell as snow three-quarters of a million years ago," said Dr. Eric Wolff, an author of the paper and ice core expert with the British Antarctic Survey.

#### Ice age not happening for 10000 years – and they are usually over much quicker than they begin.

Bryan Eastin, (science graduate student – New Mexico) April 11 2008 <http://daviddfriedman.blogspot.com/2008/04/global-warming-hidden> assumption.html?showComment=1208174580000

From what I can tell from a quick internet search:There was never widespread concern about the danger of global cooling. Some scientists speculated that an ice age might be on the way soon (where soon meant a few thousand years), but many others disagreed. Not a lot of research effort was directed at the question, and the scientific consensus at the time seems to have been that we didn't really know what would happen.Carbon dioxide released into the atmosphere sticks around for something on the order of 100 years.We've not got enough coal to last more than a few hundred years as our primary energy source (at present rates of energy usage).Our current best guess (and I do mean guess) for the time of arrival of the next ice age is order 10000 years.In the past, ice ages tended to end much more quickly than they began.

### AT Ice Age

#### Myth about global cooling has never been substantiated in scientific literature. Their evidence is based on selective misreading and inaccuracy.

Thomas C. Peterson, William M. Connolley, and John Fleck Sept 2008 The Myth of the 1970s Global Cooling Scientific Consensus (Peterson—NOAA/National Climatic Data Center, Asheville, North Carolina; Connolley—British Antarctic Survey, National Environment Research Council, Cambridge, United Kingdom; Fleck—Albuquerque Journal, Albuquerque, New Mexico) http://ams.allenpress.com/archive/1520-0477/89/9/pdf/i1520-0477-89-9-1325.pdf

Despite active efforts to answer these questions ,the following pervasive myth arose: there was a consensus among climate scientists of the 1970s that either global cooling or a full-fledged ice age was imminent (see the “Perpetuating the myth” sidebar).A review of the climate science literature from 1965to 1979 shows this myth to be false. The myth’s basis lies in a selective misreading of the texts both by some members of the media at the time and by some observers today. In fact, emphasis on greenhouse warming dominated the scientific literature even then. The research enterprise that grew in response to the questions articulated by Bryson and others, while considering the forces responsible for cooling, quickly converged on the view that greenhouse warming was likely to dominate on time scales that would be significant to human societies (Charneyet al. 1979). However, perhaps more important than demonstrating that the global cooling myth is wrong, this review shows the remarkable way in which the individual threads of climate science of the time—each group of researchers pursuing their own set of questions—was quickly woven into the integrated tapestry that created the basis for climate science as we know it today.

### AT Ice Age

#### Ice age argument is based on misquoting of scientific evidence to advance a supposed global cooling consensus that never actually existed.

Thomas C. Peterson, William M. Connolley, and John Fleck Sept 2008 The Myth of the 1970s Global Cooling Scientific Consensus (Peterson—NOAA/National Climatic Data Center, Asheville, North Carolina; Connolley—British Antarctic Survey, National Environment Research Council, Cambridge, United Kingdom; Fleck—Albuquerque Journal, Albuquerque, New Mexico) http://ams.allenpress.com/archive/1520-0477/89/9/pdf/i1520-0477-89-9-1325.pdf

Given that even a cursory examination of Fig. 1reveals that global cooling was never more than a minor aspect of the scientific climate change literature of the era, let alone the scientific consensus, it is worth examining the ways in which the global cooling myth persists. One involves the simple misquoting of the literature. In a 2003 Washington Post op-ed piece, former Energy Secretary James Schlesinger quoted a1972 National Science Board report as saying, “Judging from the record of the past interglacial ages, the present time of high temperatures should be drawing to an end . . . leading into the next glacial age” (Schlesinger2003). The quote repeatedly appeared other places in the political debate over climate change, including the floor of the U.S. Senate where Inhofe (2003) followed up that quote by stating, “That was the same timeframe that the global-warming alarmists are concerned about global warming.” The actual report, however, shows that the original context, rather than supporting the global cooling myth, discusses the full state of the science at the time, as described earlier. The words not extracted by Schlesinger and Inhofe are highlighted with italics: Judging from the record of the past interglacial ages, the present time of high temperatures should be drawing to an end, to be followed by a long period of considerably colder temperatures leading to the next glacial age some20,000 years from now. However, it is possible, or even likely, that human interference has already altered the environment so much that the climatic pattern of the near future will follow a different path. For instance, widespread deforestation in recent centuries, especially in Europe and North America, together with increased atmospheric opacity due to man-made dust storms and industrial wastes, should have increased the Earth’s reflectivity. At the same time increasing concentration of industrial carbon dioxide in the atmosphere should lead to a temperature increase by absorption of infrared radiation from the Earth’s surface. When these human factors are added to such other natural factors as volcanic eruptions, changes in solar activity, and resonances within the hydro-atmosphere, their effect can only be estimated in terms of direction, not of amount (National Science Board 1972). Underlying the selective quotation of the past literature is an example of what political scientist Daniel Sarewitz calls “scientization” of political debate: the selective emphasis on particular scientific “facts” to advance a particular set of political values (Sarewitz2004). In this case, the primary use of the myth is in the context of attempting to undermine public belief in and support for the contemporary scientific consensus about anthropogenic climate change by appeal to a past “consensus” on a closely related topic that is alleged to have been wrong (see “Perpetuating the myth” sidebar).

### AT Ice Age

#### Warming shuts down conveyor belt – by decreasing ocean salinity, causing an ice age

Pearce, environmental consultant, 2007 Fred, With Speed And Violence: Why Scientists Fear Tipping Points In Climate Change, pages 145-147

But the crux of the public debate on Broecker's ocean conveyor remains a very simple question: Could global warming shut the conveyor down? Broecker seems rarely to have doubted it. And the claim has in recent years seemed almost to have a life of its own. This struck me most strongly at a conference on "dangerous" climate change held at the Hadley Centre for Climate Prediction, in Exeter in 2005. There I met Michael Schlesinger, of the University of Illinois at Urbana-Champaign. He is a sharp-suited guy sporting a pastiche of 1950S clothes and hairstyle. But if there were serious doubts in Exeter about whether his style sense would ever come back into fashion, there was no doubt that his ideas about climate change had found their moment. For more than a decade, Schlesinger has been making Broecker's case that a shutdown of the ocean conveyor could be closer than mainstream climate modelers think. Some critics feel that he just doesn't know when to give up and move on. But he has stuck with it, criticizing the IPCC and its models for systematically eliminating a range of quite possible dooms¬day scenarios from consideration. "The trouble with trying to reach a con¬sensus is that all the interesting ideas get eliminated," he said at the conference. Science by committee ends up throwing away the good stuff ¬like the idea of the conveyor's shutting down. But in Exeter, Schlesinger was back in vogue. He had been invited to present his model findings that a global warming of just 3.6°F would melt the Greenland ice sheet fast enough to swamp the ocean with freshwater and shut down the conveyor. The risk, he said, was "unacceptably large." Although he had been saying much the same for a decade, he was now considered mainstream enough to be invited across the Atlantic to ex¬pound his ideas at a conference organized by the British government. And he was no longer alone. Later in the day, Peter Challenor, of the British Na¬tional Oceanography Centre, in Southampton, said he had shortened his own odds about the likelihood of a conveyor shutdown from one in thirty to one in three. He guessed that a 3-degree warming of Greenland would do it. Given how fast Greenland is currently warming, that seems a near certainty. But all this is models. What evidence is there on the ground for the state of the conveyor? The truth is that dangerous change is already afoot in the North Atlantic. And, whatever the skepticism about some of Broecker's grander claims, the conveyor may already be in deep trouble. Since the mid-2000s, says Ruth Curry, of the Woods Hole Oceanographic Institu¬tion, the waters of the far North Atlantic off Greenland-where Wad¬hams's chimneys deliver water to the ocean floor and maintain Broecker's conveyor-have become decidedly fresher. In fact, much of the change happened back in the 1960s, when some 8 billion acre-feet of freshwater gushed out of the Arctic through the Fram Strait. Oceanographers called the event the Great Salinity Anomaly. To this day, nobody is quite sure why it happened. It could have been ice breaking off the great Greenland ice sheet, or sea ice caught up in unusual circulation patterns, or increased flow from the great Siberian rivers like the Ob and the Yenisey. Luckily, most of the freshwater rapidly headed south into the North Atlantic proper. Only 3 billion acre-feet remained. Curry's studies of the phenomenon, published in Science in June 2005, con¬cluded that 7 billion acre-feet would have been enough to "substantially reduce" the conveyor, and double that "could essentially shut it down." So it was a close call. With the region's water still substantially fresher than it was at the start of the 1960s, the conveyor remains on the critical list. Another single slug of freshwater anytime soon could be disastrous. In the coming decades, some combination of increased rainfall, increased runoff from the land sur¬rounding the Arctic, and faster rates of ice melting could turn off the con¬veyor. And there would be no turning back, because models suggest that it would not easily switch back on. "A shift in the ocean conveyor, once initiated, is essentially irreversible over a time period of many decades to centuries," as Broecker's colleague Peter deMenocal puts it. "It would per¬manently alter the climatic norms for some of the most densely populated and highly developed regions of the world." As I prepared to submit this book to the publisher, new research dramat¬ically underlined the risks and fears for the conveyor. Harry Bryden, of the National Oceanography Centre, had strung measuring buoys in a line across the Atlantic, from the Canary Islands to the Bahamas, and found that the flow of water north from the Gulf Stream into the North Atlantic had faltered by 30 percent since the mid-I990S. Less warm water was go¬ing north at the surface, and less cold water was coming back south along the ocean floor. This weakening of two critical features of the conveyor was, so far as anyone knew, an unprecedented event. Probing further, Bryden found that the "deep water" from the Labrador Sea west of Greenland still seemed to be flowing south. But the volume of deep water coming south from the Greenland Sea, the site of Wadhams's chimneys, had collapsed to half its former level. The implication was clear: the disappearing chimneys that Wadhams had watched with such despair were indeed hobbling the ocean circulation. Broecker seemed on the verge of being proved right that the ocean conveyor was at a threshold because of global warming.

### AT Ice Age

Warming causes ice age – disrupts the gulf stream and collapses the north atlantic current

Poling 1999. “Global warming can cause global cooling”. http://www.dinosauria.com/jdp/news/freeze.html

Scientists announced in the July 21, 1999, edition of the journal Nature findings that suggest that global warming can sometimes lead to cold weather or even a worldwide freeze. Scientists have long known that a severe cold spell occurred after the end of the Pleistocene glaciation, approximately 8,200 years ago. The cause, however, has been a mystery. The authors of the Nature article write that the centuries long cold spell might have been caused by meltwater from the disappearing glaciers, cooling the North Atlantic. The Laurentide Ice Sheet covered parts of North America with ice up to two miles thick for more than a million years. When the Earth began to warm 10,000 years ago, it retreated back toward the poles. The ice sheet left in its wake at least two lakes containing more water than the Great Lakes combined. In the Hudson Bay, ice held the water in place like a plug in a bathtub. When the plug finally melted, trillions of gallons gushed into the Labrador Sea, flowing out at 100 times the rate water leaves the Mississippi. The conclusions of the authors are the result of a study by University of Colorado and Canadian researchers who examined evidence of this huge flood in the Hudson Bay region of Quebec and Ontario. Independent research showed that global temperatures dropped significantly within several hundred years of the flood. Until this study, nobody could pinpoint if these two events were connected, said the study's lead author, University of Colorado geologist Don Barber. The scientists used radiocarbon dating of clams in the flood sediment, and other evidence, to correlate the two events. The Atlantic Gulf Stream normally acts like a conveyor belt to deliver warm tropical water to temperate regions. By adding so much cold fresh water in such a short time, the flood shut down the Gulf Stream, said Richard Alley, a climate expert at Penn State University. Temperatures in Greenland and Europe dropped by 6 to 15 degrees for at least 200 years, according to ice core data. The authors conclusions demonstrate how global warming can, paradoxically, provoke a global freeze. If a modern glacier such as the Greenland Ice Sheet melts as a result of rising temperatures in the next century, it could trigger a similar flood and climate fluctuation, the researchers said.

### AT Ice Age

#### Global warming will cause an ice age in the next five years -gulf stream.

Corunna 2008 [Dr. J.C., “Next ice age could be closing in”, SARNIA OBSERVOR, lexis

Intense global warming has increased temperatures in the Gulf Stream and increased heat transfer into the Arctic Ocean. Intense global warming has also greatly increased atmospheric heat transfer into the Arctic.Results from new and improved measurements have shown surprised scientists that enormous amounts of heat are being transferred into the Arctic. The heat is melting the ice in the Arctic Ocean and this will soon result in several months of open water there.Currently, the Arctic Ocean is covered by ice. There can be little water evaporation so the lands surrounding the Arctic Ocean are deserts (four to eight inches of precipitation per annum). Arctic winds are like northeast trades blowing from the pole. With open ocean, evaporation will increase greatly and produce huge snowfalls that will extend far to the south.Currently, insolation (solar heating) on Arctic land masses is barely sufficient to melt the winter's snowfall.With lake-effect snows (ocean-effect snows), there is no possibility of being able to melt the accumulated winter snowfall in the Arctic.Instant ice age.With lakes and swamps covered by ice and snow all year, there is no production of carbon dioxide and methane to effect global warming, so the ice age continues.Glaciations are probably terminated by the heat-caused release of methane from the methane hydrate beds on the continental slopes when sea levels drop more than 150 metres because of water locked up in the continental ice sheets.It is known that at least one of the recent ice ages was generated by an open (ice-free) Arctic Ocean.Because of lag time between generating greenhouse gases and their effects, we cannot reverse global warming in time to ward off this next ice age.It is estimated now that the Arctic Ocean will be ice free in September (month for warmest ocean water) by the year 2013.The irony of the recent intense global warming is that it is accelerating the advent of the next ice age.It could begin in five years; maybe less.

### A2: CO2 Fertilization

#### Warming hurts agriculture – increase in invasive species, long growing seasons, increased pests, diseases, and decreased water. (

Garber 2008—Kent Garber Posted May 28, 2008 How Global Warming Will Hurt Crops Lower yields, more pests, faster-growing weeds will be just some of the effects of climate change http://www.usnews.com/articles/news/2008/05/28/how-global-warming-will-hurt-crops.html?PageNr=2

Historically, the damage to food supplies by bad weather has been regarded as fleeting: catastrophic in the short term but ultimately remitting. Droughts ease, floodwaters recede, and farmers replant their crops. But as a new government report indicates, such views are increasingly narrow and outdated, in that they fail to acknowledge the creeping reach of global climate change.The report, released Tuesday, offers one of the most comprehensive looks yet at the impact that climate change is expected to have on U.S. agriculture over the next several decades. Not surprisingly, the prognosis is grim. Temperatures in the United States, scientists say, will rise on average by about 1.2 degrees Celsius by 2040, with carbon dioxide levels up more than 15 percent. The consequences for American-grown food, the report finds, will most likely be far-reaching: Some crop yields are predicted to drop; growing seasons will get longer and use more water; weeds and shrubs will grow faster and spread into new territory, some of it arable farmland; and insect and crop disease outbreaks will become more frequent. The new report, which was produced by more than a dozen agencies over multiple years and reflects the findings of more than 1,000 scientific studies, offers only predictions, but the predictions reflect a high degree of confidence. In a sense, there is a vein of fatalism among most scientists about what will happen in the next few decades. Government actions, they say, may alter the trajectory of climate change 50 to 100 years from now, but the fate of climate change in the short term has been largely shaped by past behavior, by carbon already released into the atmosphere. The question now is the extent of its impact.Some agricultural changes are already observable. In the central Great Plains, in states known for their grassy prairies and sprawling row crops, there are new neighbors: trees and large shrubs, often clustering in islands in the middle of fields. In the Southwest, perennial grasses have been largely pushed out by mesquite bushes, those long-rooted staples of the desert. And the invasive kudzu vine, formerly a nuisance only to the South, has advanced steadily northward, forming a staggered line stretching from Connecticut to Illinois. Human practices in all three cases have abetted the turnover, but climate change, scientists say, has been a primary driver, as invasive species reproduce more quickly and expand into areas once deemed too cold for their survival. In turn, high-quality pastureland, once ideal for livestock grazing, has become poor-quality brush, and farmland faces competitors for space.In the next 30 years these problems will very likely expand and multiply, as an already taxed food system faces threats on multiple fronts. A rise in temperature—even as little as 1 degree Celsius—could cause many plantings to fail, the report indicates, since pollen and seeds are sensitive to slight temperature changes. Yields of corn and rice are expected to decline slightly. Heat-sensitive fruits and vegetables, such as tomatoes, will most likely suffer. Some of the potential damage will be blunted by higher carbon dioxide levels; soybean yields, for instance, will probably improve, because soybeans (and several other crops) thrive from higher carbon inputs. But if temperatures keep rising, the balance will ultimately tip: At some extreme temperature, cells stop dividing, and pollen dies.High ozone levels, which have risen sixfold in the United States in the past century and are expected to rise further, will suppress yields as well. In fact, ozone levels are already extremely high in the eastern and midwestern regions of the country, rivaled globally only by eastern China (no model of air quality, to be sure) and parts of western Europe. One recent study, for instance, found that high ozone levels significantly suppress yields of soybean, wheat, and peanuts in the Midwest. Eventually, the effects of climate change, far from being limited to individual plants, could percolate throughout entire ecosystems. If springs become warmer, as predicted, the crop-growing season will expand. Insects and pests, thriving in warmer winters, will reproduce more frequently and spread more rapidly. Many, in fact, are proliferating already, as reflected in reports of abnormally high rates of disease outbreaks in the western half of the United States. Higher temperatures also are usually accompanied by declining rainfall, threatening to slowly transform once lush areas into arid expanses. At the same time, droughts and heavy isolated rainfalls could become more numerous.

### A2: CO2 Fertilization

#### Global warming will decimate agriculture because of rising temps and falling precipitation. Adaptation isn’t possible. Previous studies that proved CO2 was good for crops have been disproven – our ev is comparative

Mittelstaedt 2007—Martin Mittelstaedt How Global Warming Goes Against the Grain The Globe and Mail Saturday 24 February 2007 http://www.truthout.org/article/how-global-warming-goes-against-grain

Perhaps the best-known worrier about climate change and its impact on agriculture is Lester Brown, founder of the Earth Policy Institute, a U.S. environmental think tank, and proponent of the view that global warming and agriculture are on a collision course. "It certainly looms large," Mr. Brown says of the threat posed to farming by a warmer world. Mr. Brown says the global food ladder is already so bare that the impact of global warming could be felt at any time - even as early as this summer - if it causes rising temperatures or changing precipitation patterns that lead to a crop failure in any major agricultural region. The food surpluses of yesteryear have been nibbled down to the point where practically nothing is left in the bin for coping with even one disappointing harvest, he says. "The unfortunate reality is that the cushion for dealing with climate change now is less than it's been for 34 years, because in six out of the last seven years world grain production has fallen short of consumption." Furthermore, one of the solutions to global warming - using crops to produce clean-burning bio-fuels such as ethanol - would accentuate any harvest shortfalls because so much corn, sugar, and soybeans is now being diverted from the dinner plate to the gas tank. The Earth Policy Institute tracks the world's stockpile of grain - the amount available in storage after accounting for annual use and production - and says it's down to only 57 days of consumption. This is close to the modern nadir, a period in the early 1970s of poor harvests when levels fell so low there was only enough for 56 days. That earlier period of short supply prompted a doubling of world grain prices - an indication of the possible consequences if global warming takes a bite out of harvests. Even North America's prime piece of agricultural real estate, the continent's equivalent of the Indo-Gangetic Plain, is in the gunsights of climate change. The models that simulate the likely effects of climate change show that the regions warming the most are at mid to high latitudes, and in mid-continental areas far from the moderating effects of oceans. "Those conditions sort of describe the U.S. corn belt and the Great Plains, the wheat-growing Great Plains of the U.S. and Canada," Mr. Brown says. "Since we are the world's bread basket, if we start losing wheat production and corn production, it's going to affect the entire world." The study released by CGIAR did find that rising temperatures would cause a remarkable northward shift of the wheat belt. The crop could theoretically be cultivated in a band across the top of North America - from Cape Harrison, about midway up the coast of Labrador, to Ketchikan, on the Alaskan panhandle, in the west. But agricultural experts say don't bother hoping for northern regions to become replacement granaries for losses in the tropics. Trading the rich soils of the Punjab or the U.S. Midwest for the thin soils of Labrador and the north coast of Lake Superior, in other words, is a bit like a gambler discarding an ace for a two. It's probably an unwise bet."The northward movement of a climate zone into an area where crops generally have not been grown does not necessarily mean crops like wheat will do well there," says Dr. Hans Braun, director of the global wheat program at CIMMYT, the Mexico-based crop research institute that conducted the wheat study. Scientists have made another worrisome discovery, this time about carbon dioxide itself, the main greenhouse gas, which is vital for plant development. It had been assumed in the 1980s, based on greenhouse experiments, that an atmosphere richer in carbon dioxide would stimulate plant growth, raising some crop yields by as much as 30 per cent. That is part of the reason why, up until now, few people worried much about agriculture and global warming. It was thought that, while climate change might wreak havoc on ice-dependent polar bears and low-lying coastal cities, it held a verdant lining for farmers. But new research published last year based on experiments in the U.S., Japan, Switzerland and New Zealand found the beneficial effects of carbon dioxide were vastly overrated when crops were grown in the more realistic setting of open farm fields, rather than in greenhouses. Corn yields didn't rise at all, and the rise in wheat and rice yields was less than half previous estimates.

## Add On

### Space Debris add-on

#### Aerospace structure modernization helps track space debris

National Aerospace Week, September 11-17, 2011. “Aerospace and Defense: Second to None,”

http://www.nationalaerospaceweek.org/wp-content/uploads/2010/04/whitepaper.pdf

Space is certainly becoming more contested, congested and competitive. More than 60 nations are engaged in space efforts and tens of thousands of man-made objects orbit the Earth. In January 2007, the Chinese used a ballistic missile to destroy an aging weather satellite. This anti-satellite test demonstrated the very real ability of a foreign power to attack and destroy space assets and resulted in a dangerous debris cloud. In addition, the February 2009 collision of a commercial U.S. satellite and Russian satellite showed that space systems not only face disruption from intentional attack, but are also at risk from unintentional events in an increasingly crowded environment. Using systems developed by America’s aerospace industry, the Defense Department currently tracks more than 21,000 man-made objects in the Earth’s orbit — many of which could threaten civil and national security space systems, as well as our nation’s efforts to increase the commercial use of space. 16 In such an environment, investments in rapid reconstitution, sensors, tracking, threat assessment and other space protection and situational awareness capabilities are needed to mitigate the impacts of an unexpected catastrophic space system failure. The cost and difficulty involved in developing and deploying space systems as well as the severe consequences of their loss necessitates that our nation’s space infrastructure be adequately protected. Part of ensuring robust space capabilities means that America must routinely replace and update its space infrastructure. It is highly problematic — if not infeasible — to perform maintenance or even refuel them. Space systems have limited life spans and, at today’s pace of technology, can quickly become obsolete. Critical space systems that provide missile warning, global communications, positioning, navigation and timing and weather are in need of upgrade at a time when other nations are rapidly modernizing their own space infrastructure. The United States must remain a leader in human and robotic space — a position that is perishable if not properly supported. Research aboard the International Space Station and human and robotic exploration beyond low Earth orbit must remain national priorities. These activities demonstrate global leadership, sharpen our expertise for future long-range space travel, add to our scientific knowledge and inspire our youth to pursue engineering and science disciplines.

#### Collision of space debris with sensitive military satellites could spark miscalculation and accidental war.

Jakhu, 1997 (McGill Univ. Professor, 07 Ram, “Legal Issues of Satellite Telecommunications, the Geostationary Orbit, and SpaceDebris,” Astropolitics, Volume 5, Issue 2, accessed 5-9-11, p. EBSCO)

There have been several recorded close encounters with space debris and one confirmed collision, in which thespent third stage of Ariane Flight 16 collided with and disabled the French military micro-satellite CERISE on24 July 1996. Several Space Shuttle flights, the Hubble Space Telescope, the Long Duration Exposure Facility,and the International Space Station (ISS) have suffered numerous times damage due to space debris. In 1985, aU.S. kinetic energy ASAT test produced over 250 pieces of catalogued debris, some of which came within1.3km of the ISS. The last piece of debris generated from this test de-orbited almost twenty years later in2002. A collision of a piece of space debris with an active military satellite , such as the CERISE accident, during a period of high tension could have very serious implications between the concerned states. Debrisnot only pose a threat to active satellites in orbit, but can also cause damage on the surface of the Earth. For example, the Soviet satellite COSMOS 954 disintegrated in 1978 and scattered radioactive debris over a largearea in Northern Canada.

### A2 Tracking solves debris

#### NASA doesn’t have the capability to track and predict debris.

Heller, 1990 [Jean Heller, May 9, 1990, “Junk in orbit puts shuttles in danger”, St. Petersburg Times, LexisNexis)

At orbital speeds, a piece of debris the size of an aspirin could harm a shuttle. There have already been close calls. Defense Department officials tracking space junk on radar warned NASA at least eight times in the last 18 months that potentially dangerous debris would pass close to space shuttles. On one occasion, according to a federal report, debris was so close to the shuttle Atlantis that NASA flight rules would have called for an evasive maneuver. The warning came too late for the shuttle to move. The incident was chalked up as a celestial near hit. A report by the General Accounting Office (GAO), the auditing and investigative arm of Congress, says that in the 1990s, potential risks to the shuttle and to the space station, on which construction is scheduled to begin in 1995 will increase dramatically. "Experts estimate that more than 3.5-million man-made objects are orbiting the Earth," a new GAO report says. "These objects space debris include whole and fragmentary parts of rocket bodies and other discarded equipment from space missions. About 24,500 of these objects (those one centimeter or larger) can cause catastrophic damage upon impact and could pose a threat to future space shuttle missions and the planned space station." Each new space mission creates new space junk, and collisions between pieces of junk fragment them into more pieces. Although no shuttle missions have been destroyed by space debris, two windows on one shuttle were damaged by tiny particles of space junk, and a heat tile on another shuttle showed evidence of a hit. The GAO estimates that a one-centimeter aluminum sphere (about the size of an aspirin tablet) traveling at an average orbital speed of 22,000 mph would strike a spacecraft with approximately the same energy as a 400-pound safe traveling at 60 mph. Shuttle hulls are built to withstand hits from particles of 0.4 centimeters (about one-sixth of an inch) or smaller. The eight debris warnings cited by the GAO came during the first five missions flown by the shuttle after the Challenger disaster. The shuttle fleet was grounded until 1988 after the Challenger exploded in January 1986. In seven of the cases, the Defense Department gave NASA running accounts of the trajectories of the debris being tracked. In none of these seven cases did NASA consider the debris close enough to warrant shifting the shuttle. The near hit occurred during a mission that began on Dec. 3, 1988, to deploy a spy satellite. "NASA only had 15 minutes' warning that debris would pass dangerously close to the shuttle, and they needed 45 minutes to make the evasive maneuver," Ron Beers, GAO's assistant director for defense and security information systems, said Tuesday. Beers headed the space-debris study. He said he did not know how close the debris came to the Atlantis. "The dangerous thing about this debris is that it changes orbit and velocity all the time, and it's very difficult to predict," Beers said. "It's also very tough to track, and the Defense Department can lose pieces of it for days at a time. NASA can predict reliably what the shuttle's position will be at any given time, but you can't always predict the position of debris." That NASA had a procedure to respond to space-junk threats represented a major step forward in safety, according to Beers. "I'd have to call it significant progress," he said. "Before Challenger, there weren't any flight rules pertaining to safety from space debris. NASA just ignored it. In the interim, during that period when the shuttle was down, they had a chance to reassess their operations from the ground up, and they began to take space debris into account." The danger from space junk will be even greater to the space station than it is to the shuttle, Beers said. The space station would be an outpost from which astronauts would conduct scientific studies and also would be a launch platform for interplanetary missions. "It will be a much bigger target," Beers said. "We asked NASA to estimate how many times a year it would have to move out of the way of debris, and they said anywhere from 24 to 36 times. There will always be a number of activities going on aboard the station and outside it that would be affected by evasive maneuvering. So when you're talking about the need to move the station several times a month, you're talking about a big problem." The GAO report also criticized the nature of the space-junk data on which NASA is basing the design of the space station. "Any plan to protect the space station from debris must hinge on NASA's estimate of the amount of debris likely to be encountered, and the estimate's accuracy, recency and reliability," the report said. "The 1984 model that NASA is now using to design the space station significantly underestimates the amount of debris." NASA officials acknowledge that they have updated data "that reflect a much more severe environment," the GAO report said, but documents used to guide contractors in designing the station haven't been revised to reflect that. Space station program directors initially rejected the new data because it could have increased the cost of the space station, already estimated at nearly $ 30-billion, and because they wanted to study the problem more. They have until 1992 to make decisions affecting the design of the station, if it is to stay on schedule. Responding to the GAO report, NASA's assistant deputy administrator, John O'Brien, said NASA has been aware of the dangers posed by debris and meteoroids and has performed debris risk-and-hazard assessments for every manned space mission since 1962. GAO disagreed. "Although meteoroid dangers have been studied, NASA representatives confirmed that debris risk-and-hazard analyses have never been performed for the shuttle," the GAO report concluded. Since the end of the GAO investigation last month, Beers said, NASA has initiated a risk-and-hazard assessment for shuttle missions.

## Disad Answers

### Plan Popular

#### Already bipartisan support for NextGen – has the support of the committee chairman

Avionics Today February 7, 2012 “Congress Passes Long-Awaited FAA Reauthorization”

Congress passed long-awaited, long-term FAA funding authorization on Monday, funding the agency through 2015 and giving a big boost to the agency's multi-billion-dollar Next Generation Air Transportation (NextGen) initiative. The four-year, $63.4 billion "FAA Air Transportation Modernization and Safety Improvement Act" passed the Senate on Monday by a 75-20 vote; the House passed the measure by a 248-169 vote on Friday. The bill now moves to President Obama's desk for signature. FAA has been operating under a series of nearly two dozen short-term funding reauthorizations since the last measure expired in 2007. Political wrangling over funding measures partially shutdown the agency last year. “This bill is a huge win for America’s economy, for passenger safety, and for the aviation industry,” said Sen. Jay Rockefeller, chairman of the Senate Commerce, Science and Transportation committee. “From the start, our goal was preserving the safest, most efficient, and modern aviation system in the world. And we know a healthy and growing aviation industry is fundamentally important for the economic future of our country. I’m proud that Congress has passed comprehensive, bipartisan legislation that will support jobs and consumers.”

### Winners Win - Aff

#### Winners win outweighs everything

(compromises look weak)

Norman Ornstein (resident scholar, American enterprise institute) 9/10/2001 Roll Call

In a system where a President has limited formal power, perception matters. The reputation for success - the belief by other political actors that even when he looks down, a president will find a way to pull out a victory - is the most valuable resource a chief executive can have. Conversely, the widespread belief that the Oval Office occupant is on the defensive, on the wane or without the ability to win under adversity can lead to disaster, as individual lawmakers calculate who will be on the winning side and negotiate accordingly. In simple terms, winners win and losers lose more often than not.

#### FIATING the win subsumes all links – if the process of plan is perceived, the President will get their agenda, in advance

Norman Ornstein (resident scholar, American enterprise institute) 5/27/1993 “Clinton Can Still Emerge a Winner,” Roll Call

Winning comes to those who look like winners. This only sounds redundant or cliche-ish. If power is the ability to make people do something they otherwise would not do, real power is having people do things they otherwise wouldn't do without anybody making them - when they act in anticipation of what they think somebody would want them to do. If a president develops a reputation as a winner, somebody who will pull out victories in Congress even when he is behind, somebody who can say, "Do this!" and have it done, then Members of Congress will behave accordingly. They will want to cut their deals with the president early, getting on the winning team when it looks the best and means the most. They will avoid cutting deals with the opposition.

#### We control the results of unpopularity.

Norman Ornstein (resident scholar, American enterprise institute) 5/15/2001 “How is Bush Governing,” Transition to Governing Project, www.aei.org/research/tgp/events/eventID.281,projectID.12/transcript.asp

What flows from that as well is, use every bit of political capital you have to achieve early victories that will both establish you as a winner, because the key to political power is not the formal power that you have. Your ability to coerce people to do what they otherwise would not do. Presidents don't have a lot of that formal power. It's as much psychological as it is real. If you're a winner and people think you're a winner, and that issues come up and they're tough but somehow you're going to prevail, they will act in anticipation of that. Winners win.

### Winners Win – Aff 1AR

#### Prefer our evidence because Ornstein is qualified whereas their assumptions about the political process are based in the ramblings of contemporary political-entertainment media.

#### Capital is replenished quickly—legislative success overwhelms controversy.

Mitchell, 2009 (Lincoln Mitchell, Assistant Professor in the Practice of International Politics, Columbia University, “Time for Obama to Start Spending Political Capital” June 18, google)

Throughout his presidential campaign, but more notably, during his presidency, President Obama has shown himself to have an impressive ability to accumulate political capital. During his tenure in the White House, Obama has done this by reaching out to a range of constituencies, moderating some of his programs, pursuing middle of the road approaches on key foreign policy questions and, not insignificantly, working to ensure that his approval rating remains quite high. Political capital is not, however, like money, it cannot be saved up interminably while its owner waits for the right moment to spend it. Political capital has a shelf life, and often not a very long one. If it is not used relatively quickly, it dissipates and becomes useless to its owner. This is the moment in which Obama, who has spent the first few months of his presidency diligently accumulating political capital, now finds himself. The next few months will be a key time for Obama. If Obama does not spend this political capital during the next months, it will likely be gone by the New Year anyway. Much of what President Obama has done in his first six months or so in office has been designed to build political capital, interestingly he has sought to build this capital from both domestic and foreign sources. He has done this by traveling extensively, reintroducing to America to foreign audiences and by a governance style that has very cleverly succeeded in pushing his political opponents to the fringes. This tactic was displayed during the effort to pass the stimulus package as Republican opposition was relegated to a loud and annoying, but largely irrelevant, distraction. Building political capital was, or should have been, a major goal of Obama's recent speech in Cairo as well. Significantly, Obama has yet to spend any of his political capital by meaningfully taking on any powerful interests. He declined to take Wall Street on regarding the financial crisis, has prepared to, but not yet fully, challenged the power of the AMA or the insurance companies, nor has he really confronted any important Democratic Party groups such as organized labor. This strategy, however, will not be fruitful for much longer. There are now some very clear issues where Obama should be spending political capital. The most obvious of these is health care. The battle for health care reform will be a major defining issue, not just for the Obama presidency, but for American society over the next decades. It is imperative that Obama push for the best and most comprehensive health care reform possible. This will likely mean not just a bruising legislative battle, but one that will pit powerful interests, not just angry Republican ideologues, against the President. The legislative struggle will also pull many Democrats between the President and powerful interest groups. Obama must make it clear that there will be an enormous political cost which Democrats who vote against the bill will have to pay. Before any bill is voted upon, however, is perhaps an even more critical time as pressure from insurance groups, business groups and doctors organizations will be brought to bear both on congress, but also on the administration as it works with congress to craft the legislation. This is not the time when the administration must focus on making friends and being liked, but on standing their ground and getting a strong and inclusive health care reform bill. Obama will have to take a similar approach to any other major domestic legislation as well. This is, of course, the way the presidency has worked for decades. Obama is in an unusual situation because a similar dynamic is at work at the international level. A major part of Obama's first six months in office have involved pursuing a foreign policy that implicitly has sought to rebuild both the image of the US abroad, but also American political capital. It is less clear how Obama can use this capital, but now is the time to use it. A cynical interpretation of the choice facing Obama is that he can remain popular or he can have legislative and other policy accomplishments, but this interpretation would be wrong. By early 2010, Obama, and his party will, fairly or not, be increasingly judged by what they have accomplished in office, not by how deftly they have handled political challenges. Therefore, the only way he can remain popular and get new political capital is through converting his current political capital into concrete legislative accomplishments. Health care will be the first and very likely most important, test.

### Fiat = Winners win > Political capital

#### Our Galderisi and Ornstein evidence illustrate that fiat is just different. Our evidence speaks more to the power of fiat than theirs. Their arguments about how “Obama can’t win” assume lost political capital from Congressional debate. Their link turns will be more of the same – a WATERED down agenda item or policy failure. Radical leadership is key – their evidence shows that the political capital strategy self-destructs in the process of compromise. Try winners win or the agenda dies.

### Political capital—myth - Aff

#### Political capital doesn’t spillover – presidential lobbying wont affect votes.

Dickinson, 2009 (Matthew Dickinson, professor of political science at Middlebury College and taught at Harvard University, where he also received his Ph.D., “Sotomayor, Obama and Presidential Power” May, google)

What is of more interest to me, however, is what her selection reveals about the basis of presidential power. Political scientists, like baseball writers evaluating hitters, have devised numerous means of measuring a president’s influence in Congress. I will devote a separate post to discussing these, but in brief, they often center on the creation of legislative “box scores” designed to measure how many times a president’s preferred piece of legislation, or nominee to the executive branch or the courts, is approved by Congress. That is, how many pieces of legislation that the president supports actually pass Congress? How often do members of Congress vote with the president’s preferences? How often is a president’s policy position supported by roll call outcomes? These measures, however, are a misleading gauge of presidential power – they are a better indicator of congressional power. This is because how members of Congress vote on a nominee or legislative item is rarely influenced by anything a president does. Although journalists (and political scientists) often focus on the legislative “endgame” to gauge presidential influence – will the President swing enough votes to get his preferred legislation enacted? – this mistakes an outcome with actual evidence of presidential influence. Once we control for other factors – a member of Congress’ ideological and partisan leanings, the political leanings of her constituency, whether she’s up for reelection or not – we can usually predict how she will vote without needing to know much of anything about what the president wants. (I am ignoring the importance of a president’s veto power for the moment.) Despite the much publicized and celebrated instances of presidential arm-twisting during the legislative endgame, then, most legislative outcomes don’t depend on presidential lobbying. But this is not to say that presidents lack influence. Instead, the primary means by which presidents influence what Congress does is through their ability to determine the alternatives from which Congress must choose. That is, presidential power is largely an exercise in agenda-setting – not arm-twisting. And we see this in the Sotomayer nomination. Barring a major scandal, she will almost certainly be confirmed to the Supreme Court whether Obama spends the confirmation hearings calling every Senator or instead spends the next few weeks ignoring the Senate debate in order to play Halo III on his Xbox. That is, how senators decide to vote on Sotomayor will have almost nothing to do with Obama’s lobbying from here on in (or lack thereof). His real influence has already occurred, in the decision to present Sotomayor as his nominee.

### Political capital—myth – Aff- 1AR

#### Once legislation hits the floor the president has no influence

George C. Edwards III and Andrew Barrett Texas A&M University “Presidential Agenda Setting in Congress” presentation at the Congress and the President in a Partisan Era Conference sponsored by the Program in American Politics in the Center for Presidential Studies February 5-6, 1999 http://www-polisci.tamu.edu/upload\_images/9/SP13Agenda.pdf

At the floor stage of the legislative process, the most important influences on congressional voting are party, ideology, and constituency (Bond and Fleisher 1990, Edwards 1989). These factors are largely beyond the president’s control, especially in the short run. The president’s legislative skills have little impact at this stage of the consideration of legislation (Edwards 1989, chap. 9; Bond and Fleisher 1990, chap. 8). The burdens of leadership are considerably less at the agenda stage. On the floor, the president must try to influence decisions regarding the political and substantive merits of a policy. At the agenda stage, in contrast, the president only has to convince members that his proposals are important enough to warrant attention. The White House can employ three principal sources of influence on behalf of agenda setting: service, incentives, and persuasion.

#### No PC spillover

Steven E. Schier is Dorothy H. and Edward C. Congdon Professor of Political Science at Carleton College in Northfield, Minnesota Presidential Studies Quarterly December 1, 2011 “The contemporary presidency: the presidential authority problem and the political power trap” lexis

The evidence presented here depicts a decline in presidential political capital after 1965. Since that time, presidents have had lower job approval, fewer fellow partisans and less voting support in Congress, less approval of their party, and have usually encountered an increasingly adverse public policy mood as they governed. Specifically, average job approval dropped. Net job approval plummeted, reflecting greater polarization about presidential performance. The proportion of fellow partisans in the public dropped and became less volatile. Congressional voting support became lower and varied more. The number of fellow partisans in the House and Senate fell and became less volatile. Public issue mood usually moved against presidents as they governed. All of these measures, with the exception of public mood, correlate positively with each other, suggesting they are part of a broader phenomenon. That "phenomenon" is political authority. The decline in political capital has produced great difficulties for presidential political authority in recent decades. It is difficult to claim warrants for leadership in an era when job approval, congressional support, and partisan affiliation provide less backing for a president than in times past.

### A2 Spending

#### Try or die – jet fuel costs will eventually crush the economy - NextGen solves, extend the Lee evidence we save a billion gallons of airplane gas.

Reed Business Information 8/1/2008. “Airline Woes Could Cut Deep,” HOTELS

http://www.hotelsmag.com/article/CA6583066.html

The cost of jet fuel is skyrocketing, causing serious economic woes for airlines—especially in the United States—and higher ticket prices, along with onerous fuel surcharges. The International Air Transport Association (IATA) predicts airline losses in 2008 could reach US$6.1 billion. “The situation is desperate and potentially more destructive for the industry than our recent crises—SARS, terrorism and war—combined,” says Giovanni Bisignani, director general and CEO of IATA. “Large parts of the industry are being re-shaped. In the last six months 24 airlines went bust. To keep this vital part of the global economy functioning, governments, industry business partners and labor all have a critical role to play.”

#### Their spending turns are propaganda – government action on jobs is the only path to recovery.

Danny Thompson, Where I Stand Guest Columnist, “Jobs are key to getting economy on track” Aug. 12, 2011 http://www.lasvegassun.com/news/2011/aug/12/jobs-are-key-getting-economy-track/

Some politicians would like us to believe that the root of our economic problem — whether it’s our state budget or our national economic crisis — is one of too much spending. These politicians tell us the simple solution is to drastically cut spending — even if it means cutting programs such as Medicare that families increasingly depend on to get by in this stagnant economy. Yet days after Congress passed the debt-ceiling deal, the Dow Jones industrial average continued to plunge. What Wall Street knows is that the solution to strengthening our economy isn’t in partisan stances or sound bites. What our economy needs is to get Americans back to work. How we get there in this state requires our elected officials to put aside politics and show real leadership and address Nevada’s primary obstacles to creating jobs: much-needed tax reform, investing in education and stopping the outsourcing of Nevadan jobs to out-of-state workers.

## CP Answers

### A2: Private CP

#### Federal intervention and fast tracking are key

Stephen Goldsmith et al. Harvard Kennedy School Zachary Tumin Harvard Kennedy School Fred Messina Booz Allen Hamilton March 2010 “Assuring the Transition to the Next Generation Air Transportation System A New Strategy for Networked Governance” Harvard Kennedy School Ash Center for Democratic Governance and Innovation http://www.ash.harvard.edu/extension/ash/docs/nextgen.pdf

Findings and Discoveries. Significant progress has been made, but there is still distance to go. All share a passion and commitment to the success of NextGen, but disagree on how to get there. Issues remain, for example, regarding who should pay as infrastructure moves from the ground to the plane, perhaps challenging the long-established practice of “government pays for infrastructure, airlines for planes.” Although the nation’s cupboard may be bare in such dire fiscal times, the airlines too, are stressed. Moreover, they are skeptical of the government’s ability to move fast enough to undertake needed reforms sufficient to generate the returns industry needs on any NextGen investment it might make. There is a prospect that government could demonstrate its resolve and prove the benefits by the Transition to the Next Generation Air Transportation System implementing elements of a new best equipped, best served strategy; but, such a roll-out itself raises thorny issues of handling mixed equipage operations, altering flight paths, and changing procedures. It is by no means assured, either. These issues are among the complexities confronting NextGen—a series of “Yes….but” dilemmas that seem to thwart every good move forward. How then to make progress? Some argue that what is needed is a new strong central authority directing traffic on NextGen—clarifying and resolving governance issues internal to the Federal Aviation Administration (FAA), and clearing the path ahead for the tough choices that must be made.

### A2: Private CP

#### Private sector incentives fail- we are in the show me state son

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Currently, there are obstacles in the path. Because the system currently works “below its common denominator,” as one participant put it, “there’s no operational advantage to actually equipping.” With respect to separation standards, for example, “the control function is exceedingly inefficient,” the participant said. “We’re currently legal to separate airplanes 3 miles within 40 miles of the airport, and 5 miles through the remainder of the whole US airspace. The typical control is about double those measures. A lot of it is just simply lack of any sort of incentive to do any better.” As a result, “It’s hard for airlines to monetize operational benefit,” a participant observed. “When you get on a plane the customer is not making a decision based on whether it has ADS-B or not.” Breaking the logjam is hard. The air transportation system is currently functioning at extremely high levels of safety, for example. In fact, there has been a “ratcheting up” of “target levels of safety” as subsystems have gone through cycles in which the many subsystem owners have added technical requirements, making the cumulative safety requirements for new systems “almost unattainable,” one participant asserted. “Nobody gets criticized for over-specifying the safety requirements for their subsystem,” he said, “But it makes it extremely difficult to make the type of changes that will be necessary—precisely because we cannot actually get most of NextGen through the safety approvals process fast.” This construct translates to balking by airlines that are uncertain they will realize return on their investment—in time, or at all. Making the argument to a Chief Financial Officer even on the basis of a 5-year return on investment (ROI) when his or her investment ROI timescale is between 18 and 24 months, for example, is “an impossible sell,” one executive said. The deal is “dead on arrival” once coupled, further, with the lack of credibility of any benefit analysis. Many prior investments in technology have not yielded promised operational benefits. “The urge to invest again is not overwhelming,” one participant said. Government’s past failure to make good on promises of collateral changes in policies and procedures rings loudly. “Risk needs to be apportioned differently this time around,” he said. If current market forces seem too weak to incent first movers on this round, how then to ensure change, when there is no rush to be first—and no downside to being last? Mandates. From FAA’s perspective, mandates are appropriate only when there is not—or never will be—sufficient incentive for operators to equip. However, mandates have the effect of reducing business uncertainty—which some operators might prefer, if intelligently applied and matched by government action. If, for example, FAA mandated the purchase of equipment of a certain level in order to operate in New York Class B airspace, this would be—according to one observer—“a no brainer. I can walk into my board meeting and get approval in 15 minutes.” Managing the Mixed Equipage Environment. Demonstrating capability to roll out and manage a mixed-equipage environment may well provide strong incentive, demonstrating the value of investing in best equipped, best served-enabling equipage. “Best-equipped, best served is a systematic reward for NextGen upgrades,” a participant observed, a “pure competitive market system.” FAA could then mandate the remainder much more easily— limiting it to those who do not voluntarily equip. “But we need to prove our way into this,” a government participant observed. “We’ve got to prove that we are going to burn less fuel, that we can space our planes closer together, that we can fly more efficiently, that we can fly more direct routes.” Industry takes a “show me” attitude. To be meaningful for business case purposes, especially, and attract investment, these results must be measurable. “The only way government can really prove out the true benefit is to get enough of the fleet equipped to actually try it,” one industry participant said. “It cannot be done on paper and proved.”

### A2: Private CP

#### Have a high threshold for solvency claims- there is no impetus in the private sector to change things

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At its heart, NextGen is a major cross-boundary change initiative requiring deep consensus, broad alignment, and shared risk taking. Yet the classic “burning platform” that would mobilize support and action is absent—no 9/11, for example. “We don’t have a strong external driver on the capacity issue. When you have a slow degradation in performance of an infrastructure, it’s the ‘boiled frog’ problem,” one participant stated. “The urgency is not there to say that we have to solve this problem today.” “It’s a very interesting marketing challenge because you’re not selling NextGen as it’s going to save lives—that bar is now set very high,” another participant observed. “You’re selling NextGen on the basis it’s going to save dollars, and it’s going to save time, and it’s going to save the environment.” Absent a nationally felt crisis like 9/11, the move to NextGen is prone to being slowed or derailed by a diverse public on many issues. Moreover, the Session also learned of research that points to the inherent difficulty of new product adoption under the best of circumstances. “Losses loom larger than gains,” research shows—meaning that any new product must be more than simply a little bit better than the old to ensure adoption. It may need to be up to 10 times better to be felt. Where old ways must give way to new ways, users’ familiarity with the old, combined with the uncertainty of the new, means users are loath to part with the old (and well-known) only for some modest gains from the new (and unknown).

#### Market forces cannot work without investment by the government.

Tony Tyler, State of the Industry Speech, 68th Annual General Meeting, Beijing “Tony Tyler, IATA: Aviation is a complex global business. It’s not an easy one to manage,” Wednesday, June 13, 2012 http://www.traveldailynews.com/pages/show\_page/49882-Tony-Tyler,-IATA:-Aviation-is-a-complex-global-business-It%E2%80%99s-not-an-easy-one-to-manage

Directing punitive measures towards airlines shows that governments misunderstand the problem. Airlines don’t want delays. And fines don’t address their root causes-bad weather, insufficient airport and airway capacity, strikes, third party technical problems and the like, many of which are influenced by governments themselves. The market forces of choice and competition empower passengers and are the best way to drive up service levels so long as governments also do their part. Of course, investment to unclog airports and airspace is the best long-term solution to the root cause of many delays and to facilitate growth. But Europe is trying to solve its growing airport capacity problem by tinkering with slot allocation rules. The globally accepted 80:20 use-it-or-lose it rule achieves over 95% utilization at key hubs. Europe wants to change it to 85:15. That would perversely incentivize airlines to fly empty planes just to hold on to slots. Noise and emissions will rise unnecessarily-an unintended consequence. Europe will be going it alone-again-and ignoring global standards. And the capacity challenge will remain unaddressed.

### Private CP Links to Politics

#### Privatization links to politics

Barkowski, Justin T. (2010) "Managing Air Traffic Congestion Through the Next Generation Air Transportation System: SatelliteBased Technology, Trajectories, and - Privatization?," Pepperdine Law Review: Vol. 37: Iss. 1, Article 3. http://digitalcommons.pepperdine.edu/plr/vol37/iss1/3

Though the mixed private-public corporation bears similarities to the current ATO, the main differences are precisely what the ATM system needs for successful implementation of NextGen. In a USATSC, the FAA would retain protection over ATM security functions and raise alternative forms of financing for NextGen, operating as much like a "business-run enterprise" as possible. 2 2 1 Although theoretical observations could arguably overestimate the benefits of increased efficiency for implementing new technologies, the above stated benefits certainly outweigh the current system, which is funded by passengers and a trust fund with limited accountability from its users. But along with nearly any policy recommendation, the biggest obstacle for ATC commercialization is Congress. 222 Indeed, the public tends to disfavor privatization efforts when there has been a backlash in the private sector, especially one as remarkable as the recent economic recession.

### Private CP Perm

#### Private CP perm card

NITRD 2011 Networking and Information Technology Research and Development Program, last date cited. “Winning the Future with Science and Technology for 21 st Century Smart Systems” http://www.nitrd.gov/subcommittee/hcss/documents/CPS\_OSTP\_ResponseWinningTheFuture.pdf

The FAA’s Next Generation Air Transportation System (NextGen) 17 is a future system concept for substantial and long-term change in the management and operation of the national air transportation system. In the future, it is envisioned that all airports and aircraft in the US airspace will be connected to NextGen’s advanced infrastructure and will continually share information in real-time. This “Net Centric” framework has the potential to improve air transportation’s safety, speed, efficiency, and environmental impacts, while enabling increased capacity levels and convenience for passengers. NextGen represents a comprehensive vision that involves not only the development of new technology, but also the leveraging of existing technologies. It includes satellite navigation and control of aircraft, advanced digital communications, and enhanced connectivity between all components of the national air transportation system. Progress in cyber-physical systems research will address key risks of the NextGen concept and aviation safety in general: how to design and build highly functional, yet verified and validated complex systems. These NextGen challenges include: a changing balance of human vs. automated operation, a shift in authority between (hence new architectures for) air and ground control, the potential for failure modes arising from poorly-understood interaction of cyber and physical components, and growing need for automated flight control systems to cooperate and adapt to adverse conditions. In addition, aviation safety compels us to find new ways to improve effectiveness of safety and security certification, and to create new capabilities for in-flight management of system health and air-worthiness that can assure safe flight under increasingly complex conditions. NextGen-capable innovation in autonomous as well as human-piloted but highly-automated air vehicles and the infrastructure systems that support them will require advances to unify digital and physical (cyberphysical) engineering capability. No single entity – industry sector or government agency -- can accomplish this. A shared investment is needed to obtain the core high-confidence system architecture, design, and hardware/software/system implementation technology that will be required to produce and operate safe, secure, energy-efficient, and dependable systems for the 21 st century. The future competitiveness of the US aviation industry, including aircraft manufacturers, commercial aviation, and general aviation companies (including many small businesses), is a central element of this puzzle. With a skilled cyber-physical systems workforce capable to build, maintain, and operate these systems, America can keep these crucial value-producing (hence high-value) jobs to sustain a robust, productive, and competitive U.S. aviation sector.