## Constellation Aff – Case Neg

[Constellation Aff – Case Neg 1](#_Toc298841816)

[Solvency 1nc 2](#_Toc298841817)

[Space Leadership 1nc 3](#_Toc298841818)

[Space Leadership 1nc 5](#_Toc298841819)

[Space Leadership 1nc 6](#_Toc298841820)

[Space Leadership 1nc 7](#_Toc298841821)

[Space Leadership 1nc 8](#_Toc298841822)

[Ext – Constellation Doesn’t Solve 9](#_Toc298841823)

[Ext – Commercial Fill-In 11](#_Toc298841824)

[Ext – Econ Impact Answers 12](#_Toc298841825)

[Ext – Econ Impact Answers 14](#_Toc298841826)

[Industrial Base 1nc 15](#_Toc298841827)

[Industrial Base 1nc 17](#_Toc298841828)

[Industrial Base 1nc 18](#_Toc298841829)

[Industrial Base 1nc 19](#_Toc298841830)

[Ext – Aerospace Resilient 20](#_Toc298841831)

[Ext – Alt Causes Doom Aerospace 21](#_Toc298841832)

[Ext – Airpower Fails 23](#_Toc298841833)

[A2: North Korea Impact 24](#_Toc298841834)

## Solvency 1nc

### Constellation was a failure – over budget, behind schedule, and lacking in innovation

Len Lyl, Senior staff reporter for the USC Annenberg School for Communication and Journalism Newspaper, 5-26-2011,“NASA Decides on Human Deep Space Vehicle”, http://www.neontommy.com/news/2011/05/nasa-decides-human-deep-space-vehicle

Constellation, started under George W. Bush's presidency, was to establish a human colony on the moon by 2020 in preparation for missions to Mars. The program was developing the next generation of NASA spacecraft―Orion, the Ares 1 rocket to launch Orion and the Ares V rocket to launch cargo-- to succeed the space shuttle program. Elements of Apollo-and-shuttle-period technologies were used in Constellation. \* President Barack Obama canceled Constellation last year in his fiscal 2011 budget request to Congress. Based on an independent panel's review, the program was determined “over budget, behind schedule, and lacking in innovation” and “had drawn funding away from other NASA programs.” Instead, the budget called for investments that would “significantly lower operation costs” and potentially take humans “farther and faster into space.” Central to that approach was NASA would partner with the private sector in a fundamentally new way: In the post-shuttle era, commercial vehicles would be the primary mode of crew transportation to and from the International Space Station, a laboratory in low-Earth orbit.

### Constellation tech fails.

Jeff Foust, aerospace analyst, journalist and publisher, 1-12-2009, “A final defense of Constellation”, The Space Review, http://www.thespacereview.com/article/1285/1

Since then, NASA has made steady progress with Constellation, letting contracts for all the elements of the Ares 1 launch vehicle and Orion spacecraft, and more recently beginning the early stages of the same process with the Ares 5 heavy-lift launcher and Altair lunar lander. However, Constellation has not been without its critics. Some raise technical concerns about the current system, particularly the Ares 1, while others argue that alternative architectures would be faster, less expensive, and/or safer than the current approach (see “Staying the course in a sea of change”, The Space Review, December 22, 2008). And, if anything, this drumbeat of criticism has gotten louder, not softer, in the last year.

### Accelerating Constellation is technologically impossible.

Jeff Foust, aerospace analyst, journalist and publisher, 12-22-2008, “Staying the course in a sea of change”, The Space Review, http://www.thespacereview.com/article/1275/1

Accelerating Constellation Another key issue facing Constellation has been the extended gap between the shuttle’s retirement in 2010 and Constellation’s introduction into service, now planned for late 2014. How much that gap can be shortened, and at what cost, has been the subject of intense scrutiny, including at NASA. Jeff Hanley, Constellation program manager, said in an interview with The Space Review last week that the agency had recently completed a study led by Ralph Roe, director of the NASA Engineering and Safety Center (NESC), and including the deputies for all the line organizations within Constellation, to study various options for accelerating the Ares 1/Orion initial operating capability (IOC). The first part of the study was to look at the shortcomings in the current plan that could prevent the planned IOC of September 2014. “That will require more money to go to that more robust plan to achieve the September 2014 date, on the order of a couple of billion dollars,” Hanley said. Moving the IOC back to the previous IOC date of September 2013, he added, would not cost much additional money: about $2.5 billion over the next two years. He added, though, that the September 2013 date is “very success oriented, but not un-executable.” A third option the study examined was to further accelerate IOC to March 2013. “Based on where we’re at today, and what it takes to develop these very complex systems—the rocket, the spacecraft, and all the ground and mission systems—that accelerating that much is just technically not possible,” Hanley said.

## Space Leadership 1nc

### Space leadership is strong --- Constellation isn’t key

Anatoly Zak, Space Reporter – BBC and IEEE Spectrum and Contributing Editor – Astronomy and Cosmonautics, 2-4-2010, “End of Constellation: It is Not All Doom and Gloom”, Russian Space Web, 2-4, http://www.russianspaceweb.com/sei\_end.html

Obviously, for every space enthusiast around the world, it would be sad to see any major space exploration effort to be axed in a budget crunch. The frustration of legislators representing congressional districts with heavy involvement into a discontinued federal project is also understandable. However there is a silver lining. Every failure presents a new opportunity and even more so does the inevitable demise of the Constellation program. NASA still can make it right, make it big, and remain a leader in space, if it chooses to do so. First of all, the Obama administration promised to increase overall NASA funding, which along with recovering economy, puts the US space agency in a very strong position for drawing up an aggressive future strategy in space. The goal of going to the Moon itself has not been abandoned but only postponed, likely for a historically insignificant period of time. In the meantime, NASA and all its international partners will be able to send their astronauts to the [International Space Station](http://www.russianspaceweb.com/iss.html), ISS, to conduct scientific research and built foundation for human ventures beyond the Earth orbit. The fact that US astronauts will temporarily fly to the ISS onboard [Russian spacecraft](http://www.russianspaceweb.com/soyuz.html), should bother no one but isolationists and nationalists. It is much more tragic that under funding restraints of the Constellation program, a brand-new space station -- the largest and most complex man-made structure in orbit -- would have to be dumped into the ocean as soon as [2015](http://www.russianspaceweb.com/2015.html). Perhaps, it still would not be the most unprecedented waste of taxpayers’ money in the history of space program – just ask the developers of the Soviet [N1 moon rocket](http://www.russianspaceweb.com/n1.html) and the [Energia](http://www.russianspaceweb.com/energia.html)-[Buran](http://www.russianspaceweb.com/buran.html) system. (Both were abandoned practically on the launch pad, after years of colossal efforts.) Beyond the station Before the end of this decade, NASA would have a new manned spacecraft, capable of reaching the ISS and, most likely, the same vehicle would be easily adaptable for lunar missions. Although the potential of the so-called “private sector” to build better, cheaper spacecraft is greatly over-hyped, there is little doubt that the US aerospace industry would be fully capable of building a state-of-the-art spacecraft for the federal government. Hysterical cries in the American press about the loss of US capability to launch astronauts into space are completely unfounded.

### Constellation was replaced by more effective exploration plans --- boosting leadership

Frank Mace, “In Defense of the Obama Space Exploration Plan”, 4-7-2011, Harvard Political Review, http://hpronline.org/united-states/in-defense-of-the-obama-space-exploration-plan/

Finally, Obama’s plan deftly prioritizes national inspiration over simple nationalism. He argues “exploration will once more inspire wonder in a new generation—sparking passions and launching careers . . . because, ultimately, if we fail to press forward in the pursuit of discovery, we are ceding our future and we are ceding that essential element of the American character.” And this plan is not lacking in inspiration capability. It calls for innovation to build a rocket at least two years earlier than under the Constellation program. This point alone negates the three astronauts’ criticism that many years will be “required to recreate the equivalent of what we will have discarded.” Crewed missions into deep space by 2025. Crewed missions to asteroids. Crewed missions into Mars orbit by the 2030s. A landing on mars to follow. This plan will truly continue NASA’s history of inspiring the people, especially the youth, of the United States. Armstrong, Lovell, and Cernon assert that the Obama plan will sacrifice American leadership in space. Worthy recipients of the status of national hero, these astronauts nonetheless hail from the space race era. Obama, however, points out that “what was once a global competition has long since become a global collaboration.” I agree with the president that the ambitious nature of his plan will do nothing but “ensure that our leadership in space is even stronger in this new century than it was in the last” as well as “strengthen America’s leadership here on earth.” Obama’s space exploration plan will create jobs, advance science, and inspire a nation, and it will do so not by sacrificing American dominance in space, but by extending that dominance into new areas of research and exploration.

## Space Leadership 1nc

### Commercial fill-in is best --- it allows on balance more effective organizations to take over and spurs structural reforms that are key to NASA’s long-term effectiveness

Joseph N. Pelton, Research Professor – Institute for Applied Space Research at the George Washington University, May 2010, “A New Space Vision for NASA—and for Space Entrepreneurs Too?”, Space Policy, 26(2), p. 78

NASA--now past 50--is well into middle age and seemingly experiencing a mid-life crisis. Any honest assessment of its performance over the past two decades leads to the inexorable conclusion that it is time for some serious review and even more serious reform. National U.S. Space Study Commissions have been recommending major reform for some years and ﬁnally someone has listened. President Obama has had the political and programmatic courage to make some serious shifts in how NASA does its business. It is no longer sufﬁcient to move some boxes around and declare this is the new and improved NASA. One of the key messages from the 2004 Aldridge Commission report, which was quickly buried by NASA, was words to this effect: “Let enterprising space entrepreneurs do what they can do better than NASA and leave a more focused NASA do what it does bestdnamely space science and truly long range innovation” [1]. If one goes back almost 25 years to the Rogers Commission [2] and the Paine Commission [3] one can find deep dissatisfaction with NASA productivity, with its handling of its various space transportation systems, and with its ability to adapt to current circumstances as well as its ability to embark on truly visionary space goals for the future. Anyone who rereads the Paine Commission report today almost aches for the vision set forth as a roadmap to the future in this amazing document. True there have been outstanding scientiﬁc success stories, such as the Hubble Telescope, but these have been the exception and not the rule. The first step, of course, would be to retool and restructure NASA from top to bottom and not just tweak it a little around the edges. The ﬁrst step would be to explore what space activities can truly be commercialized and see where NASA could be most effective by stimulating innovation in the private sector rather than undertaking the full mission itself. XPrize Founder Peter Diamandis has noted that we don't have governments operating taxi companies, building computers, or running airlines, and this is for a very good reason. Commercial organizations are, on balance, better managed, more agile, more innovative, and more market responsive than government agencies. People as diverse as movie maker James Cameron and Peter Diamandis feel that the best way forward is to let space entrepreneurs play a greater role in space development and innovation. Cameron strongly endorsed a greater role for commercial creativity in U.S. space programs in a February 2010 Washington Post article and explained why he felt this was the best way forward in humanity's greatest adventure: “I applaud President Obama's bold decision for NASA to focus on building a space exploration program that can drive innovation and provide inspiration to the world. This is the path that can make our dreams in space a reality” [4].

## Space Leadership 1nc

### Constellation fails --- its technologically infeasible

Joseph N. Pelton, Research Professor – Institute for Applied Space Research at the George Washington University, May 2010, “A New Space Vision for NASA—and for Space Entrepreneurs Too?”, Space Policy, 26(2), p. 78

One might think that, since Musk was seeking to develop his own launch capability, he was exaggerating; but a review of the record suggests otherwise. Today nearly 25 years after the Rogers and Paine Commission reports that followed the Challenger disaster, we ﬁnd that the recommendations for NASA to develop a reliable and costeffective vehicle to replace the Shuttle is somewhere between being a disappointment and a ﬁasco. Billions of dollars have gone into various spaceplane and reusable launch vehicle developments by NASA over the past 20 years. Spaceplane projects have been started by NASA time and again amid great fanfare and major expectations and then a few years later either cancelled in failure or closed out with a whimper. The programs that NASA has given up on now include the Delta Clipper, the HL-20, X-33, the X-34, X-37, X-38, and X-43 after billions of US funds and billions more of private money have been sacriﬁced to the cause [6]. In the ﬁeld of space research NASA has a long and distinguished career. In the area of space transportation and space station construction its record over the past 30 years has largely been a record of failure. The Space Shuttle was supposed to have been an efﬁcient space truck that would ﬂy every two weeks and bring cargo to orbit at a fraction of the cost of early space transportation systems, perhaps a few thousand dollars per pound to low-Earth orbit. In fact, the fully allocated cost of the Shuttle is over $1 billion a flight and it is by far the most expensive space transportation system ever. After the Columbia accident NASA spent years and billions more dollars to correct serious safety problems with the Space Shuttle and still was never able to fulﬁll the speciﬁc recommendations of the Columbia Accident Investigation Board. Yes, that's correct. After grounding the Space Shuttle for some 2.5 years (from February 2004 to August 2006) and expending $1.75 billion dollars in the wake of the CAIB report, NASA was not able to correct the identiﬁed problems and complete the tasks asked of it. Then, after the foam insulation problem re-emerged with Discovery and STS flight 114, hundreds of millions more dollars were spent to solve the problem again, bringing the grand total to over $2 billion [7]. The ﬁrst rendition of a space station was scheduled during the Reagan years to have been completed in 1991 for several billions of dollars. The projected completion date extended to 1994 when the project was redesigned and it became the International Space Station (ISS). Today the ISS is not only late, but its total cost has ballooned to over $100 billion [8]. Project Constellation, with a projected cost of over $100 billion until its recent cancellation by President Obama, seemed to loom as an eerie repetition of the ISS e another mega-project always over budget, always late, and with constantly lowered expectations. Henry Spencer, writing for the New Scientist, has characterized Project Constellation as an “Illusion, Wrapped in Denial.” His speciﬁc observations about the NASA Moon/Mars program were as follows: First, it probably wasn't going to work. Even so early in its life, the programme was already deep into a death spiral of “solving” every problem by reducing expectation of what the systems would do. Actually reaching the moon would probably have required a major redesign, which wasn't going to be funded [9]. Any private company with NASA's record on the Space Shuttle, the ISS deployment and spaceplane development, would have gone bankrupt decades ago. In all three cases the US Congress has been told by NASA essentially what it wanted to hear rather than the grim facts as to cost, schedule and performance. I personally remember when Congress was being told quite unbelievable things about the cost and expected performance of the Space Shuttle. We at Intelsat presented testimony that strongly contradicted NASA's statements on cost and performance.

## Space Leadership 1nc

### Economy’s resilient

Fareed Zakaria, Ph.D. in Political Science – Harvard University and Editor – Newsweek International, 12-21-2009, “The Secrets of Stability”, Newsweek, Lexis

One year ago, the world seemed as if it might be coming apart. The global financial system, which had fueled a great expansion of capitalism and trade across the world, was crumbling. All the certainties of the age of -globalization--about the virtues of free markets, trade, and technology--were being called into question. Faith in the American model had collapsed. The financial industry had crumbled. Once-roaring emerging markets like China, India, and Brazil were sinking. Worldwide trade was shrinking to a degree not seen since the 1930s. Pundits whose bearishness had been vindicated predicted we were doomed to a long, painful bust, with cascading failures in sector after sector, country after country. In a widely cited essay that appeared in The Atlantic this May, Simon Johnson, former chief economist of the International Monetary Fund, wrote: "The conventional wisdom among the elite is still that the current slump 'cannot be as bad as the Great Depression.' This view is wrong. What we face now could, in fact, be worse than the Great Depression." Others predicted that these economic shocks would lead to political instability and violence in the worst-hit countries. At his confirmation hearing in February, the new U.S. director of national intelligence, Adm. Dennis Blair, cautioned the Senate that "the financial crisis and global recession are likely to produce a wave of economic crises in emerging-market nations over the next year." Hillary Clinton endorsed this grim view. And she was hardly alone. Foreign Policy ran a cover story predicting serious unrest in several emerging markets. Of one thing everyone was sure: nothing would ever be the same again. Not the financial industry, not capitalism, not globalization. One year later, how much has the world really changed? Well, Wall Street is home to two fewer investment banks (three, if you count Merrill Lynch). Some regional banks have gone bust. There was some turmoil in Moldova and (entirely unrelated to the financial crisis) in Iran. Severe problems remain, like high unemployment in the West, and we face new problems caused by responses to the crisis--soaring debt and fears of inflation. But overall, things look nothing like they did in the 1930s. The predictions of economic and political collapse have not materialized at all. A key measure of fear and fragility is the ability of poor and unstable countries to borrow money on the debt markets. So consider this: the sovereign bonds of tottering Pakistan have returned 168 percent so far this year. All this doesn't add up to a recovery yet, but it does reflect a return to some level of normalcy. And that rebound has been so rapid that even the shrewdest observers remain puzzled. "The question I have at the back of my head is 'Is that it?' " says Charles Kaye, the co-head of Warburg Pincus. "We had this huge crisis, and now we're back to business as usual?" This revival did not happen because markets managed to stabilize themselves on their own. Rather, governments, having learned the lessons of the Great Depression, were determined not to repeat the same mistakes once this crisis hit. By massively expanding state support for the economy--through central banks and national treasuries--they buffered the worst of the damage. (Whether they made new mistakes in the process remains to be seen.) The extensive social safety nets that have been established across the industrialized world also cushioned the pain felt by many. Times are still tough, but things are nowhere near as bad as in the 1930s, when governments played a tiny role in national economies. It's true that the massive state interventions of the past year may be fueling some new bubbles: the cheap cash and government guarantees provided to banks, companies, and consumers have fueled some irrational exuberance in stock and bond markets. Yet these rallies also demonstrate the return of confidence, and confidence is a very powerful economic force. When John Maynard Keynes described his own prescriptions for economic growth, he believed government action could provide only a temporary fix until the real motor of the economy started cranking again--the animal spirits of investors, consumers, and companies seeking risk and profit. Beyond all this, though, I believe there's a fundamental reason why we have not faced global collapse in the last year. It is the same reason that we weathered the stock-market crash of 1987, the recession of 1992, the Asian crisis of 1997, the Russian default of 1998, and the tech-bubble collapse of 2000. The current global economic system is inherently more resilient than we think. The world today is characterized by three major forces for stability, each reinforcing the other and each historical in nature.

## Space Leadership 1nc

### No impact to economic decline

Morris Miller, Economist, Adjunct Professor in the Faculty of Administration – University of Ottawa, Former Executive Director and Senior Economist – World Bank, Winter 2000, “Poverty as a Cause of Wars?”, Interdisciplinary Science Reviews, p. 273

The question may be reformulated. Do wars spring from a popular reaction to a sudden economic crisis that
exacerbates poverty and growing disparities in wealth and incomes? Perhaps one could argue, as some scholars do, that it is some dramatic event or sequence of such events leading to the exacerbation of poverty that, in turn, leads to this deplorable denouement. This exogenous factor might act as a catalyst for a violent reaction on the part of the people or on the part of the political leadership who would then possibly be tempted to seek a diversion by finding or, if need be, fabricating an enemy and setting in train the process leading to war. According to a study undertaken by Minxin Pei and Ariel Adesnik of the Carnegie Endowment for International Peace, there would not appear to be any merit in this hypothesis. After studying ninety-three episodes of economic crisis in twenty-two countries in Latin America and Asia in the years since the Second World War they concluded that:19 Much of the conventional wisdom about the political impact of economic crises may be wrong ... The severity of economic crisis – as measured in terms of inflation and negative growth - bore no relationship to the collapse of regimes ... (or, in democratic states, rarely) to an outbreak of violence ... In the cases of dictatorships and semidemocracies, the ruling elites responded to crises by increasing repression (thereby using one form of violence to abort another).

## Ext – Constellation Doesn’t Solve

### Constellation won’t restore space leadership.

Roger Handberg, Professor and Chair of the Department of Political Science at the University of Central Florida, 4-25-2011, “Post-Constellation blues”, The Space Review, http://www.thespacereview.com/article/1620/2

Taking another pathway to the future is disturbing when you have a particular model of how to do human exploration in your head. What is happening now is that the United States is being forced to adapt to a situation where it no longer dominates events at least until the United States returns to routine human spaceflight. The reality, not always understood, is that this situation would have arisen even if the Constellation program continued on its projected, albeit delayed, path. Regardless of President Obama’s choices, the US confronted a new situation due to the Constellation program’s failure to keep on track and on budget. Advocates ignore the reality that the bulk of Congress is not terribly driven or excited about the space program because its linkages to their constituents are not concrete and immediate. As a general proposition, most would support an American space program, but the reality is that support is not strong enough to drive them to significantly increase NASA’s budget without some greater sense of where the program is going. Prematurely killing the ISS was a perplexing decision from their perspective since NASA seemed to be throwing away a generation of its work and saying, in effect, “Let’s start over.” The Vision for Space Exploration in one sense was a clean-sheet concept despite the obvious carry forward aspects of the Apollo program, but Congress and the American people seem reluctant to start over without first exploiting what has taken several decades to build.

### The lack of a cooperation plank in the plan means they are likely to inhibit cooperation.

G. Ryan Faith, independent technology consultant and Adjunct Fellow for Space Initiatives at the Center for Strategic and International Studies, 4-26-2010, “President Obama’s Vision for Space Exploration (part 2)”, “The Space Review”, http://www.thespacereview.com/article/1616/1

Further, by cooperating with the State Department, NASA could provide the United States government with a valuable and visible soft-power tool, broadening the political support for space exploration within the US. Granted, this could be rather more difficult than would be the case in something more concrete like the ISS or the establishment of a lunar base, owing to the inherent vagueness of the proposed Flexible Path architecture framework. President Obama did (and still does) have the opportunity to engage foreign leadership at the highest levels to pursue international cooperation, as President Reagan did with his Space Station Freedom project. However, having failed to include strong international language in the rollout of his proposal, and having lost the opportunity for engagement during the rollout of his policy, current trends suggest that it is unlikely that the President Obama will pursue cooperation at this level in the near future.

### Obama won’t pursue international cooperation

G. Ryan Faith, independent technology consultant and Adjunct Fellow for Space Initiatives at the Center for Strategic and International Studies, 4-26-2010, “President Obama’s Vision for Space Exploration (part 2)”, “The Space Review”, http://www.thespacereview.com/article/1616/1

Essentially, President Obama’s plan resets NASA to the period immediately following the unveiling of President Bush’s Vision for Space Exploration in 2004, walking back from most of the major elements of the ESAS architecture developed by the previous NASA administrator, Michael Griffin. As stated

 earlier, the merit of resetting the ESAS architecture and discarding most of the Constellation program will doubtless provide the fodder for many heated space policy debates in future. Likewise, neither this nor the previous presidential plan seemed to be particularly interested in learning how to most effectively leverage international cooperation to help NASA meet its exploration objectives.

## Ext – Commercial Fill-In

### Commercial shuttles are better --- multiple examples prove

Joseph N. Pelton, Research Professor – Institute for Applied Space Research at the George Washington University, May 2010, “A New Space Vision for NASA—and for Space Entrepreneurs Too?”, Space Policy, 26(2), p. 78

There are dozens of examples of entrepreneurial space enterprises that have generated innovative ideas that seemed to show us how we could have gotten ourselves into space faster, cheaper and better. - A private, Boulder, CO-based company called the External Tanks Corporation (ETC) suggested in the 1980s that we could just add a little more thrust to the External Tanks for the Space Transportation System (i.e. the Space Shuttle) and lo and behold we could put them into Low-Earth Orbit. Dr. Randolph “Stick” Ware of the ETC explained that one could then strap these tanks together and create the structure of a space station at a fraction of the cost of the ISS, and much more quickly as well. - Bob Zubrin has for years championed the idea of sending methane generators to Mars to produce the fuel for the astronauts' return trip. The cost of a Mars mission with a refueling station on Mars would be dramatically lower. - Burt Rutan's Scaled Composites took a few million dollars of backing from Microsoft's Paul Allen and developed the White Knight carrier craft and the SpaceShipOne spaceplane. This vehicle system, which won the X Prize, set the stage for a space adventures industry that will begin launches in 2011. When this experimental spaceplane landed at Edwards Air Force Base in 2004, a spectator's sign said it all: “SpaceShipOne e NASA Zero”

### Constellation fails --- trades off with more effective commercial exploration

Joseph N. Pelton, Research Professor – Institute for Applied Space Research at the George Washington University, May 2010, “A New Space Vision for NASA—and for Space Entrepreneurs Too?”, Space Policy, 26(2), p. 78

Some have suggested that President Barack Obama's cancellation of the unwieldy and expensive Project Constellation to send astronauts back to the Moon for a few exploratory missions was a blow to NASA and the start of the end of the US space program. The truth is just the reverse. Project Constellation, accurately described by former NASA Administrator Michael Grifﬁn as “Apollo on Steroids” provided little new technology or innovation and had an astronomical price tag. It was clearly too much for too little. If the opportunity costs of Project Constellation are examined (i.e. if we think what could have been done with an extra $100 billion of space funds), dumping it deﬁes argument. With much less invested in a questionable Project Constellation enterprise we can do much more in space astronomy. We can invest more wisely in space science to learn more about the Sun, the Earth and threats from Near Earth Objects. David Thompson, Chairman and CEO of Orbital Sciences said the following in a speech that endorsed the new commercial thrust of the NASA space policies on Nine February 2010: “Let us, the commercial space industry, develop the space taxis we need to get our Astronauts into orbit and to ferry those wanting to go into space to get to where they want to go. We are in danger of falling behind in many critical areas of space unless we shift our priorities” [10].

## Ext – Econ Impact Answers

### No great power war

Thomas Barnett, Senior Strategic Researcher – Naval War College, 5-25-2009, “The New Rules: The Good News on the Global Financial Downturn”, World Politics Review, http://dan92024.blogstream.com/v1/date/200905.html

When the global financial contagion kicked in last fall, the blogosphere was quick to predict that a sharp uptick in global instability would soon follow. While we're not out of the woods yet, it's interesting to note just how little instability -- and not yet a single war -- has actually resulted from the worst global economic downturn since the Great Depression. Run a Google search for "global instability" and you'll get 23 million hits. But when it comes to actual conflicts, the world is humming along at a level that reflects the steady decline in wars -- by 60 percent -- that we've seen since the Cold War's end. As George Mason University's Center for Systemic Peace (CSP) notes, that trend applies within the Muslim world, too, so even America's "war on terror" has not quite lived up to the pessimists' expectations. Wikipedia's page for "ongoing conflicts" cites a whopping seven wars with annual death rates of 1,000-plus. And they're all familiar situations: Arabs-Israel, Somalia, Afghanistan, Pakistan, Iraq, Sudan and Mexico. None have been helped by the financial crisis, but all predate it. Iraq's internal situation has actually improved, despite slumping oil revenue. And as for fears that Mexico might soon become a "failed state," that government's recent response to the swine flu indicates otherwise. The CSP's database lists only three new conflicts since 2008 -- Russia-Georgia, Kenya and southern Sudan. None can be blamed on the global economy. Meanwhile, Colombia's internal security has improved dramatically, and Sri Lanka's stubborn separatist movement just collapsed. Yes, we suffer from Somali piracy, and American and Chinese subs continue their cat-and-mouse games off China's otherwise quiet coast. Still, many expected more from a financial panic that, according to the IMF, erased roughly 6 percent of global GDP: Beijing and Washington locking horns, for instance, instead of letting Taiwan negotiate peace with the mainland. But disappointment abounds for the doom-and-gloomers: - Instead of coming apart at the seams, China implemented a stimulus package that seems to be working at home and abroad (see America's construction industry exports). Beijing's flagship companies have exploited the crisis for the extraordinary buying opportunities it has created, locking in long-term commodity and energy contracts in exchange for much-needed cash. Meanwhile its central bank has swapped $100 billion worth of currency with major trade partners. - Asia's big powers should be at each other's throats over sea-based energy deposits, or at least over North Korea. And yet recently we've witnessed the first China-Japan-South Korea summit, followed soon after by the creation of a $120-billion liquidity fund to help out their smaller neighbors. - India's Congress Party just won a decisive victory in national elections, allowing it to rule without relying on anti-globalizing elements like its native Communist party. Expect another young Gandhi to champion India's next round of reforms. - The EU definitely regrets its fast integration of all those now-shaky Eastern European economies. And yet, as Washington Post economic columnist Steve Pearlstein recently noted, ". . . the real story in Europe may be how firmly market liberalization seems to have taken hold. Not only have there been few, if any, calls for renationalizations, but some countries are still moving toward privatization and reregulation. Instances of protectionism are outweighed by the examples of cross-border mergers and acquisitions that have been accepted as a matter of course . . ." - In the Middle East, the Arab world's biggest state, Egypt, remains committed to opening up its state-heavy economy even more, while Arab sovereign wealth funds continue their aggressive investment in Africa, where China and India's portfolios also grow. - In Latin America, market-friendly forces (e.g., Brazil's Lula) are gaining steam, while market-hostile ones (e.g., Venezuela's Chávez) lose traction. - Even "axis of diesel" Russia has quieted down considerably over the past nine months, with Vladimir Putin's hand-picked successor, Dmitry Medvedev, slowly emerging as a force of level-headed moderation. Add it all up and it's clear that assessments such as "the world is in chaos" -- a David Rothkopf beauty -- just don't fly. Periodic riots do not an Armageddon make. Instead, this crisis has elicited unprecedented cooperation among the world's great powers on both coordinated stimulus spending and making intermarket financial flows more transparent (keep an eye on the IMF). It's also triggered awareness of the need for an additional global reserve currency to help the euro balance the dollar (a convertible renminbi would help).

## Ext – Econ Impact Answers

### History proves no war

Niall Ferguson, Professor of History – Harvard University, Spt/Oct 2006, Foreign Affairs, 85(5), Lexis

BLAME GAME There are many unsatisfactory explanations for why the twentieth century was so destructive. One is the assertion that the availability of more powerful weapons caused bloodier conflicts. But there is no correlation between the sophistication of military technology and the lethality of conflict. Some of the worst violence of the century -- the genocides in Cambodia in the 1970s and central Africa in the 1990s, for instance -- was perpetrated with the crudest of weapons: rifles, axes, machetes, and knives. Nor can economic crises explain the bloodshed. What may be the most familiar causal chain in modern historiography links the Great Depression to the rise of fascism and the outbreak of World War II. But that simple story leaves too much out. Nazi Germany started the war in Europe only after its economy had recovered. Not all the countries affected by the Great Depression were taken over by fascist regimes, nor did all such regimes start wars of aggression. In fact, no general relationship between economics and conflict is discernible for the century as a whole. Some wars came after periods of growth, others were the causes rather than the consequences of economic catastrophe, and some severe economic crises were not followed by wars.

### No resources to fight

Daniel Duedney, Hewlett Fellow in Science, Technology, and Society – Princeton University, April 1991, “Environment and Security: Muddled Thinking?”, Bulletin of the Atomic Scientists

Poverty wars. In a second scenario, declining living standards first cause internal turmoil, then war. If groups at all levels of affluence protect their standard of living by pushing deprivation on other groups, class war and revolutionary upheavals could result. Faced with these pressures, liberal democracy and free market systems could increasingly be replaced by authoritarian systems capable of maintaining minimum order.9 If authoritarian regimes are more war-prone because they lack democratic control, and if revolutionary regimes are war-prone because of their ideological fervor and isolation, then the world is likely to become more violent. The record of previous depressions supports the proposition that widespread economic stagnation and unmet economic expectations contribute to international conflict. Although initially compelling, this scenario has major flaws. One is that it is arguably based on unsound economic theory. Wealth is formed not so much by the availability of cheap natural resources as by capital formation through savings and more efficient production. Many resource-poor countries, like Japan, are very wealthy, while many countries with more extensive resources are poor. Environmental constraints require an end to economic growth based on growing use of raw materials, but not necessarily an end to growth in the production of goods and services. In addition, economic decline does not necessarily produce conflict. How societies respond to economic decline may largely depend upon the rate at which such declines occur. And as people get poorer, they may become less willing to spend scarce resources for military forces. As Bernard Brodie observed about the modern era, “The predisposing factors to military aggression are full bellies, not empty ones.” The experience of economic depressions over the last two centuries may be irrelevant, because such depressions were characterized by under-utilized production capacity and falling resource prices. In the 1930s increased military spending stimulated economies, but if economic growth is retarded by environmental constraints, military spending will exacerbate the problem.

## Industrial Base 1nc

### Constellation trades-off with private sector shuttle --- *net-damages* job growth

Frank Mace, “In Defense of the Obama Space Exploration Plan”, 4-7-2011, Harvard Political Review, http://hpronline.org/united-states/in-defense-of-the-obama-space-exploration-plan/

Last April, President Obama unveiled a comprehensive overhaul of NASA’s future and cancelled much of the Bush-era Constellation plan to return to the moon. Obama’s plan looked to add $6 billion to the NASA budget over the next five years, renew the focus on scientific discovery, lengthen the lifespan of the International Space Station, and most importantly, dramatically increase the role of private contractors in NASA missions. Obama rightly prioritized jobs, science, and national inspiration with his new direction for NASA. This plan drew immediate criticism from, among others, Apollo 11 Commander Neil Armstrong, Apollo 13 Commander James Lovell, and Apollo 17 Commander Eugene Cernan, who jointly wrote in a [letter](http://www.msnbc.msn.com/id/36470363/ns/nightly_news/) to President Obama: “It appears that we will have wasted our current $10-plus billion investment in Constellation and, equally importantly, we will have lost the many years required to recreate the equivalent of what we will have discarded. For The United States, the leading space faring nation for nearly half a century, to be without carriage to low Earth orbit and with no human exploration capability to go beyond Earth orbit for an indeterminate time into the future, destines our nation to become one second or even third rate stature.” The three commanders, however, overvalue pure nationalism at the expense of the NASA roles in job creation, science, and national inspiration. In today’s economic climate, our first consideration should be jobs. The Obama Plan would add 2,500 more jobs to the American economy than the Bush-era plan. Additionally, the increased private sector involvement in the space program could generate upwards of 10,000 jobs. Conservative critics of Obama’s plan should take note of this increased reliance on the private sector for innovation—after all, a belief in the efficiency of the private sector is a central Republican tenet.

### Aerospace is rebounding

Ramon Lopez, Editor-in-Chief – Air Safety Week, 2-8-2010, “Rebound for Aerospace Industry in 2010”, Aviation Today, http://www.aviationtoday.com/regions/usa/Rebound-for-Aerospace-Industry-in-2010\_66262.html

A new study by the Center for Aviation and Aerospace Leadership (CAAL) at Embry-Riddle Aeronautical University predicts that the aerospace industry will recover in 2010 – and the rate of recovery could be relatively quick. In fact, the study, titled the Aerospace Economic Report and Outlook for 2010 (the AERO 2010 Report), goes even further by suggesting that the recovery in aerospace manufacturing may help lead the U.S. economy out of the recession. “It may take some time to return to the pre-recession levels of output and employment in our economy, but we anticipate that the rate of growth in aerospace manufacturing will be better than other sectors,” said Dr. Saul “Sonny” Barr, a senior aerospace economist at CAAL and primary author of the study. However, the study also revealed a subtle but ominous trend. More specifically, the data indicates that there is a strong long-term trend toward the importation of aerospace components and parts. Even though the United States continues to lead the world in the export of assembled aircraft, it is clear that a growing percentage of the components that go into the assembled aircraft are being produced overseas. “The vast network of U.S. manufacturers that are so critical to the production and support of both civilian and military aerospace products may be at risk if this trend continues,” said retired USAF Brig. Gen. Robert Mansfield, an aerospace executive in residence at Embry-Riddle and co-author of the study. Dr. Robert Materna, director of CAAL, echoed Mansfield’s concern and notes that the U.S. aerospace industry is unique because it plays a critical role in our economy as well as our national defense.

### Aerospace resilient

Wharton Aerospace & Defense Report, 12-18-2008, “[Despite Economic Turbulence, U.S. Aerospace Industry Shows Resilience](http://executiveeducation.wharton.upenn.edu/wharton-aerospace-defense-report/Economic-Turbulence-1208.cfm)”, http://executiveeducation.wharton.upenn.edu/wharton-aerospace-defense-report/Economic-Turbulence-1208.cfm

The aerospace industry is showing resiliency navigating through turbulent economic times — even ending 2008 with modest growth and showing some strength in important areas such as its foreign trade balance and employment levels, the [Aerospace Industries Association](http://www.aia-aerospace.org/) (AIA) announced. AIA, based in Arlington, Va., noted that while the industry is not immune to the effects of the ongoing global financial crisis, it is showing relative strength. Aerospace sales are on pace to reach $204 billion for 2008, according to AIA. This is an increase of 2.1% — a lower rate than in recent years, but still a record for the fifth consecutive year. The industry will also continue to post strong export numbers, reaching $99.2 billion for the year. That fuels an important foreign trade surplus of about $61 billion, the largest of any U.S. manufacturing sector (though the surplus remained flat compared to 2007). Employment in the sector also remained strong, with an average workforce that will reach 655,500 for the year — about 10,000 more than the average for 2007.

## Industrial Base 1nc

### Multiple alt causes to aerospace decline

Robert Walker, Chair – Commission on the Future of the U.S. Aerospace Industry, Nov 2002,“Final Report”, http://www.trade.gov/td/aerospace/aerospacecommission/AeroCommissionFinalReport.pdf

The U.S. aerospace sector, most notably the commercial air sector, is seen increasingly as a mature industry lacking in capital investment, innovation, and capacity for growth. Aerospace sector market capitalization, research and development investments and return on investments/assets are down and consolidations are up. The U.S. is losing global market share and its positive balance of trade in aerospace manufacturing is eroding. Jobs are going overseas. The U.S. economic downturn, coupled with the additional security costs resulting from the September 11 terrorist attacks, is crippling the airlines and causing massive layoffs. Meanwhile, today’s air transportation system—based on 1960s technology and operational concepts—is reaching capacity, resulting in increasing delays and costs for both passengers and shippers. At the same time, government investments in longterm civil aerospace research are static, if not declining in real terms. The lack of sustained, long-term investment is stifling innovation and preventing the establishment of new economic growth curves for air transportation and space. While the military has recently received significant increases, both in research and development and in procurement accounts, those increases focus on near-term counter-terrorism and homeland security problems and may be short-lived. The aerospace workforce and infrastructure are aging, and there is a lack of compelling vision or robust financial outlook to draw our youth into this important business sector.

### Export controls --- Obama will restructure them --- solves aerospace

Amulya Nagaraj, 9-1-2010, “Obama to Loosen Export Control Policies; Could Benefit Defense Companies”, International Business Times, http://www.ibtimes.com/articles/48142/20100901/defense-obama-export-control-regulation-policies-munitions-list-aerospace.htm

In a bid to tighten national security, U.S. President Barack Obama announced a restructuring of export control policies that would prune one-third of the items in the current control list. In a speech at the Commerce Department's annual conference, Obama said the current control system is "overly complicated, contains too many redundancies, and, in trying to protect too much, diminishes our ability to focus our efforts on the most critical national security priorities." The government will restructure the control lists into a single, cohesive "positive list" and said it may decontrol about one third of the total Munitions list, which contains articles, technology and services related to defense. A preliminary analysis conducted by technical experts states that about 74 percent of the 12,000 items licensed last year in the Munitions List category will be moved the Commerce Control List or will be decontrolled altogether, the government said in a statement. "Of 26 percent of items that remain on the Munitions list, none were found to be in the highest tier of control, about 18 percent are in the middle tier and the remaining 8 percent in the lowest tier," the government said. A new "Export Enforcement Coordination Center" will be established to help with enforcing these lists. The U.S. government will also transition to a single information technology system to administer to export control systems by the next year. This will open up immense export possibilities for companies that export defense materials, technology or aerospace-related goods.

## Industrial Base 1nc

### Air power fails

John Guardiano, Marine– Army’s Future Combat Systems, 8-12-2009, “Air Power Alone Cannot Win Wars”, New Majority, http://www.newmajority.com/air-power-alone-cannot-win-wars

One of the great lessons of recent military history is that wars cannot be won through air power alone; you need boots on the ground. Recall, for instance, the exaggerated claims of “shock and awe” prior to the 2003 liberation of Iraq. Exponents of air power had assured us that the decisive exercise of military power, principally through aerial bombardment, could paralyze the enemy, destroy his will to fight, and render him impotent. In fact, it was only after U.S. soldiers and Marines engaged the enemy in close combat that Iraqi government and Fedayeen forces surrendered and Iraq was liberated. Even then it took additional close combat over several years ─ in Fallujah, Mosul, Najaf, Baghdad, and elsewhere ─ before the military component of the Iraq War was truly won. And Iraq is hardly the only example that proves the crucial necessity of ground forces in modern-day conflicts. In Afghanistan, for instance, U.S. Marines are today engaging the enemy in close-quarters combat to protect the Afghan citizenry. Jets and air ordinance can’t do this; only soldiers and Marines can. The Israelis, too, have learned the hard way that ground forces are integral to victory. Indeed, their 2006 battle against Hezbollah made heavy use of air, naval, and rocket attacks, but to little avail. Israeli tanks, moreover, were destroyed by Hezbollah guerillas, who made effective use of advanced technology to fight the powerful Israeli military to a standstill.The lesson then and now is clear: In significant respects, air power is irrelevant to modern-day conflicts. Military success today requires small-scale infantry units who can fight lethally and with precision in populated areas filled with civilian non-combatants. And our infantry units had better be equipped with the latest and greatest technology: because our enemies certainly are, thanks to the internet, eBay, and other virtual bazaars. Yet, old habits die hard; the siren song of air power ─ the false allure of “shock and awe” ─ lives on. Its latest manifestation occurred last week in the Wall Street Journal, where retired Air Force General Chuck Wald argues that an American military “bombing campaign would set back Iranian nuclear development…”

### Air power is strong --- no risk of collapse

Roscoe Bartlett, House Representative (R-MD), 3-11-2008, Testimony before the Joint Hearing on Fiscal Year 2009 Budget Request for Tactical Aviation Programs, Congressional Documents and Publications, Lexis

"Today, the United States' airpower is unrivaled. It allows us to hold virtually any fixed surface target and many moving or buried targets on the planet at risk. While we used to require many planes to service a single target-or at least one plane per target-now a single aircraft can perform multiple missions. Indeed, we are no longer constrained by the physical location of the pilot. With the advent of unmanned aerial vehicles, which, of course, cannot replace manned aircraft in all circumstances, we are able to command and control aircraft around the world from air bases in the United States. In fact, it is these very advances which have led me to question, as have Admirals Stansfield Turner and Art Cebrowski, if the day of the aircraft carrier has come and gone.

## Industrial Base 1nc

### No permanent job loss – cancellation sets the foundation for a stronger civilian industry

Emelie Rutherford, congressional reporter at Defense Daily with a graduate degree in print journalism at Boston University, 2010, “Obama Set To Sign NASA Plan That Keeps Some Constellation Aspects”, Lexis

Overall, the NASA authorization bill lawmakers sent to Obama moves away from Constellation, but keeps alive aspects of it, including Orion. The legislation calls on NASA Administrator Charles Bolden to "continue the development of a multi-purpose crew vehicle to be available as soon as practicable, and no later than for use with (a new) Space Launch System." It adds: "The vehicle shall continue to advance development of the human safety features, designs, and systems in the Orion project." In addition, for the new heavy-lift rocket, the bill calls for building on working done on Ares I and the space shuttles that are being retired. The measure says Bolden should use, "to the extent practicable," "Ares 1 components that use existing United States propulsion systems, including liquid fuel engines, external tank or tank-related capability, and solid rocket motor engines; and...associated testing facilities, either in being or under construction as of the date of enactment of this Act." Some lawmakers who previously pushed back on Obama's controversial plan to cancel Constellation and instead invest in private companies to send astronauts to low-Earth orbit applauded the new bill, which is a compromise hashed out with the White House. Those former critics include Sen. Orrin Hatch (R-Utah). More than 1,600 people were laid off at ATK and other solid-rocket-motor companies in Utah after Obama called in February for eliminating Constellation. The "book is not closed on northern Utah's storied solid rocket motor industry," Hatch said after the House passed the NASA bill. "Though we will have hurdles to face in the future, the House passage of the Senate bill builds a foundation for the future of the civilian solid rocket motor industry in Utah," Hatch said in a statement. The bill includes language creating payload requirements for the heavy lift space-launch system that would nearly ensure Utah-built solid-rocket motors are used in them, Hatch said. The newly passed legislation has been touted by both Bolden and the Aerospace Industries Association. Constellation contracts will continue with the new fiscal year, because the FY '11 NASA appropriations bill has not yet been passed, Garver said. Contracts from FY '10 cannot be terminated and new programs cannot start until that legislation is signed into law.

## Ext – Aerospace Resilient

### No risk of collapse --- long-term contracts, defense spending, and commercial airlines ensure aerospace growth

Deloitte, 5-11-2010, “2009 Global Aerospace & Defense Industry Performance Wrap-Up”, http://www.deloitte.com/ assets/Dcom-UnitedStates/Local%20Assets/Documents/us\_ad\_2009%20Global%20Aerospace%20Defense%20Ind ustry%20Performance%20Wrap-up\_051110.pdf

Deloitte conducted a study of the 2009 financial performance of the Global Aerospace & Defense (A&D) Industry by evaluating the performance of 91 companies. Since revenues of companies in this study represent most of the overall A&D Industry revenue, we believe the results of our study are indicative of the A&D Industry as a whole, and use the term “Industry” throughout this report in representing our findings. Although impacted by the 2009 worldwide economic recession, the Industry has continued to demonstrate its resilience by posting stable revenue and less impactful reductions in operating earnings and operating margins compared to many industries in 2009. This is because the Industry generally relies on long term contracts not greatly impacted by short-term economic events, an increasing requirement for global defense, security and humanitarian aid, as well as the need for increasing commercial airline travel especially in growing non-Western economies. In summary, global Industry revenue remained flat, with a modest 1.3% increase to $635.0 billion. At the same time, operating earnings decreased 15.3% to $47.9 billion while operating margins fell by 16.4% to 7.6%. However, were it not for the program writeoffs principally at Boeing, EADS, and BAE Systems, Industry operating earnings would have also remained essential flat. Financial performance varied by subsector and region-specific factors, impacting key metrics. Key study findings are as follows: • The global A&D Industry slowed in 2009 compared to the record performance of the Industry in 2008 and several years of compounded growth. • Sales bookings (Book-to-Bill ratio) fell significantly from 1.40x in 2008 to 0.89x in 2009, a substantial 36.9% decrease, due to fewer new bookings and existing order cancellations, portending slower times ahead. • Boeing had higher sales revenue than EADS and regained its position as the world’s largest A&D Industry company, reversing its 2nd place performance in 2008. • American A&D companies in this study grew faster in 2009, at 3.2%, than European companies in this study, whose revenue fell by 2.1%. • American companies in this study were more profitable again in 2009, with operating margins of 9.3%, than European companies in this study, with operating margins of 4.6%, a reflection of the long term difficulty in rationalizing costs for the Industry in countries with higher government intervention and stricter job protection scheme. • Specific events that impacted the Industry, contributing to the lower level of relative performance, include: 1) lower revenue and negative earnings at EADS, resulting from A400M and A380 loss provisions and negative foreign exchange effects, 2) higher R&D expenses for new programs at Boeing Commercial Airplanes, 3) impairment charges and regulatory penalties at BAE Systems, and 4) significantly lower revenue and operating earnings at Textron, because of underperformance at Cessna and the Finance business. • Labor reductions were severe in the business jet sub-segment; however, the overall A&D Industry was minimally affected by layoffs, compared to other industries that saw massive job losses during 2009. The total level of global A&D employment remained constant at about 2.0 million employees in 2009, with a very modest growth of 0.2%, versus the larger S&P 500 group that contracted at a rate of 2.9%.

## Ext – Alt Causes Doom Aerospace

### Alt causes to aerospace decline—military cuts, oil prics, and economic downturn

Investment Weekly News, 6-25-2011, “Aerospace and Defense; Aerospace Industry to Be 'Squeezed' by Steep Ramp-up in Commercial and Continued Cuts in Defense, According to AlixPartners Study”, ProQuest

There is significant risk, says the study, that commercial-sector suppliers will not be able to keep up with aggressive new manufacturing demands and will be challenged by: capacity constraints of their own (Tier-2 and Tier-3) suppliers that have under-invested in capability development; specialty raw-materials shortages (e.g., carbon fiber and titanium fasteners); and ongoing supply-chain delays and shortages resulting from the disaster in Japan. "The aerospace supply chain was basically decimated by the economic downturn, as even sold orders were put on hold or otherwise put in a lumpy, stop-and-go mode," said David Wireman, director in AlixPartners' Aerospace and Defense Practice. "From all indications, that supply chain is not at all prepared for steep commercial ramp-up curve that lies ahead, and production constraints are a very real possibility." Defense Sector But while demand on the commercial-aircraft side looks strong, defense, globally, looks to be weakening. According to the study, U.S. defense spending is expected to decrease by at least 12.2% by 2013 and by 6.5% by 2016, while defense spending in Europe, already down 2.8% in 2010, is expected to continue to drop sharply in the coming years, led by the U.K.'s recent announcement of an 8% cut by 2015 and promised drops of up to 25% in smaller European nations. As a result of these expected widespread cuts, says the study, defense priorities will shift toward extending the life of existing equipment, improving communication networks and investing more in weapons systems targeted at supporting today's more asymmetric warfare. However, says the study, the scale of these new investments will not be enough to make up for cutbacks in major-platform investments such as the F-35 fighter aircraft series built jointly by Lockheed Martin Corp., BAE Systems PLC and Northrop Grumman Corp., which has already experienced significant cuts in planned production numbers. In response to these kinds of cutbacks, the larger defense companies will need to pursue a more diverse business mix that will lead to partnerships, M&A and consolidation among smaller players as larger companies pursue new markets, the study says. In sum, the study shows that both the commercial-aviation and defense industries face critical challenges that they will need to address. Key economic challenges will come from federal budget uncertainties, volatile fuel prices and new entrants into the few growing sectors of the industry. In particular, the recent volatility of oil prices, coupled with continued sluggish economies in the West, has made it hard to predict future industry trends. These factors are leading many aerospace and defense manufacturers, especially lower-tier suppliers, to delay investments, says the study. "The aerospace and defense industry faces a very challenging next few years," said Fitzpatrick. "The simultaneous need for near flawless execution on the commercial side and belt-tightening on the defense side, plus the need to deal with supply-chain challenges across the board while also seizing M&A opportunities will push management capabilities to the extreme." M&A Outlook Driven by supply-chain pressures in commercial and budget cuts in defense, the pace of mergers and acquisitions in the aerospace industry is expected to rebound in the next few years. In addition, it finds, low valuations today across the industry, with multiples generally below 10 times earnings before depreciation and taxes, have made deals look far more palatable.

### Demographic trends and outsourcing doom U.S. aerospace

Aviation Week And Space Technology, 4-21-2008, “Outsourcing’s Hidden Costs”, Lexis

A convergence of demographic changes and short-term corporate policies is creating a crisis that threatens the very foundation of the U.S. aerospace ­industry. The average age of an aerospace engineer at the Boeing Co. is 46. Technical workers are an average of 50. Although U.S. colleges turn out engineering and science degrees at double the pace of 40 years ago, aerospace has lost its luster as a career path. The Baby Boom generation of engineers, technical workers and machinists who design, build and effectively manage the production of aerospace products is fast approaching retirement. Moreover, while one demographic group is planning to rapidly exit the aerospace workforce, the industry is ignoring the need to groom the next generation. Instead, U.S. corporations remain fixated on short-term cost-cutting and cost-shifting strategies to boost the prices of company stocks. One of the primary corporate strategies to paper over this crisis is to cut the domestic workforce and outsource projects to lower cost workers overseas?a strategy predicated upon a fundamental misunderstanding of the aerospace workforce. The idea that complex aerospace products can be outsourced as if they were cheap consumer electronics is profoundly flawed. For example, Boeing developed its business model for the 787 Dreamliner upon the idea that aerospace workers are easily replicated. The assumption was that ?an engineer is an engineer? and that transferred jobs can be leveraged to gain foreign sales. Final assembly was left for the gutted domestic workforce. Although it may make sense to outsource common redundant pieces of mature products, cost savings from outsourcing during the design and initial manufacturing of complex aerospace products is illusory. Boeing discovered this when it had to perform costly rework on thousands of components outsourced for the 787. One particularly devastating example was the 787 center wingbox. Companies obscure the true costs of outsourcing disasters by burying them in overhead. Boeing and other companies are now discovering what the Society of Professional Engineering Employees in Aerospace warned about in 2002: Complex, technical and manufacturing jobs cannot be outsourced. Aerospace is not built on discrete tasks of individual engineers, technicians and machinists. Rather, it is the integration of complex tasks evolved from decades of experience working on similar projects. This value-added synergistic workforce cannot be purchased in the world marketplace by cobbling together a network of global suppliers. Boeing?s answer to its disastrous 787 outsourcing model is to dip into its experienced workforce, and scatter its members around the world to fix the problems at global ?partners.? For today?s problems, it may work. But, without a new generation of aerospace workers training at their side, the company, and our industry, will not be able to solve the next problems. This doesn?t mean there aren?t extremely talented younger workers in the aerospace industry. Of course there are. However, there are not nearly enough of them, and even they are being deprived of the tribal skills-transfer that comes from working projects from development to final rollout. The outsourcing of the intermediate production steps is robbing the workforce of the opportunity to engage in the intergenerational skills-transfer that is vital to keeping the American aerospace industry innovative and competitive.

## Ext – Airpower Fails

### Air power fails --- ground forces key

Colin McInnes, Professor of International Politics, December 2001, “Fatal Attraction? Air Power and the West”, Contemporary Security Policy, 22(3)

Second, air power is unable to take and hold disputed territory. Only land power can do this. Although air power can do much of the work in preparing the way for land power, and can perhaps deny the use of territory to an enemy, if territory is to be (re)gained and then held, ultimately land power will have to be used. Air power may therefore be necessary, but on its own it may not be sufficient. The limits of air power in holding and controlling territory raise a separate question: to what extent is control of territory and the destruction of an enemy’s military forces, particularly their ground forces, important in coercing an enemy? Admittedly in a campaign of brute force this might be the case (though perhaps not always then). But in a campaign of coercion, might not discrete strikes against strategic targets prove more effective – strikes which do not require the occupation of territory until the campaign is over? This question has prompted a debate over the relative utility of strategic and theatre strikes in which the US Air Force, the pre-eminent air power, has been a staunch advocate of strategic attack. US Air Force General Michael Short, for example, commented that the attacks on Serb forces in Kosovo did little to help achieve NATO’s war aims. It was only when the emphasis shifted to attacking strategic targets that coercive pressure was successfully applied. Attacking forces engaged in ethnic cleansing had not prevented those atrocities, nor had it placed the Serb leadership under sufficient pressure to persuade them to desist. Rather it was attacks upon state control and infrastructure, and the threat of more attacks to come, which Short argues finally persuaded the Serb leadership to give way.74 Similarly US Air Force Chief of Staff General Michael Ryan commented ‘Airpower could not stop the door-to-door … thuggery and ethnic cleansing that [was] going on directly… The only way you were going to be able to do that [was by] taking it to the heart of the matter – in this case Belgrade.’75 From a study of the empirical evidence, however, Robert A. Pape has argued that strategic bombing is only marginally effective as a coercive tool and that attacks against theatre targets are likely to be more effective in persuading an enemy that it cannot achieve its military objectives. For Pape, strategic bombing is only likely to be effective in long wars of attrition, when material and economic factors come into play, but not in short wars lasting a few weeks or months. In contrast theatre air power is effective in both long and short wars. Pape’s thesis has yet to attain widespread acceptance76 and the US Air Force for one has decided that strategic strikes remain the more effective option. What the debate does reveal however is that the case for strategic bombing has not been proven. In particular, doubts remain over the effectiveness of the decapitation strikes that would make war quick and easy for the West. Nor does the evidence convince that air power can guarantee success in war, particularly if air power is used on its own. Rather Pape’s thesis suggests that air power remains more of a blunt instrument than a rapier, and that campaigns are likely to take longer than expected in order to be successful. Neither of these claims has been satisfactorily refuted. What is also clear is the degree of uncertainty which still surrounds the use of air power and how it can be used most effectively.

## A2: North Korea Impact

### North Korea won’t attack the U.S.

Robert Scalapino, Robson Research Professor of Government, 1998, The US and the Two Koreas, p. 36

Evidence suggests, however, that while quantitatively strong, the DPRK military is very uneven in various qualitative respects. Energy shortages, for example, have greatly curtailed training time for pilots. The use of soldiers for a wide variety of civilian tasks from construction to agricultural pursuits raises questions about training. Moreover, despite the high expenditures, budgetary restraints prevent the purchase of modern equipment from abroad. Thus, obsolescence is an increasingly troublesome problem. Most important, however, few leaders commit suicide on behalf of themselves and their country. The DPRK leaders know that while they could exact heavy damage on the South by a sudden strike, they would subsequently be pulverized by the combined ROK‑U.S. air, sea, and ground forces. Today, the U.S. commitment is firm‑and fully credible in the North as in the South. So it must remain. The North may well initiate recurrent military provocations and incidents, but the likelihood of an all out war seems very remote under current conditions. Survival, not extinction, is the primary goal of the DPRK elite.

### Bioweapons fail

John Mueller, Chair of National Security Studies – Mershon Center and Professor of Political Science – Ohio State University, 2006, Overblown, p. 24

Not only has the science about chemical and biological weapons been quite sophisticated for more than a century, but that science has become massively more developed over that period. Moreover, govern­ments (not just small terrorist groups) have spent a great deal of money over decades in an effort to make the weapons more effective. Yet, although there have been great improvements in the lethality, effective­ness, and deployment of conventional and nuclear weapons during that time, the difficulties of controlling and dispersing chemical and biological substances seem to have persisted. Perhaps dedicated terrorists will, in time, figure it out. However, the experience in the 1990s of the Japanese cult Aum Shinrikyo suggests there are great difficulties. The group had some 300 scientists in its employ and an estimated budget of $1 billion, and it reportedly tried at least nine times over five years to set off biological weapons by spray­ing pathogens from trucks and wafting them from rooftops, hoping fancifully to ignite an apocalyptic war. These efforts failed to create a single fatality; in fact, nobody even noticed that the attacks had taken place. It was at that point that the group abandoned its biological efforts in frustration and instead turned to the infamous sarin chemical attack.29 As two analysts stress, there have been so few biological (and chem­ical) terrorist attacks because they would require overcoming several major technological hurdles. Among them: gaining access to specialized ingredients, acquiring equipment and know-how to produce and dis­perse the agents, and creating an organization that can resist infiltration or early detection by law enforcement." In the meantime, the science with respect to detecting and ably responding to such attacks is likely to grow. Although acknowledging that things could change in the future, the Gilmore Commission has concluded, "As easy as some argue that it may be for terrorists to culture anthrax spores or brew up a concoction of deadly nerve gas, the effective dissemination or dispersal of these viruses and poisons still presents seri­ous technological hurdles that greatly inhibit their effective use.