**Plan**

**The United States federal government should substantially increase its investment in Small Unit Space Transport and Insertion capabilities in the United States.**

**Contention 1 is Terror**

**Terrorists are fanatics – new terrorism will be apocalyptic not political**  
  
**Laqueur 3** Walter– historian, has taught at Brandeis University, Georgetown, Harvard, University of Chicago, Tel Aviv and John Hopkins university; expert in terrorism and one of the founders of its study; holocaust survivor [No end to war: terrorism in the twenty-first century. Google Books]  
  
It was only to be expected that there should be voices arguing that the events of September 2001 had been unique and unlikely to recur, as time had passed without many major terrorist attacks. Memories are short and wishful thinking is deeply rooted. Terrorism will be given less attention if a full scale war breaks out. But no war lasts forever. It is too expensive in every respect in our day and age, whereas terrorism is relatively cheap and will be with us for as long as anyone can envision, even if not always at the same frequency and intensity. Terrorism has become the subject of a great deal of study, comment, debate, and controversy. There has been an enormous amount of comment on the roots of terrorism as well as the best ways to deal with it. Unfortunately, these debates have been distinguished very often more by passion and emotion (and, of course, preconceived notions) than by knowledge and insight. The history of terrorism remains an essential key to understanding the phenomenon; most of the new terms that have appeared in the literature in recent years refer to concepts that have always been known since time immemorial. Guerrilla warfare and terrorism were always “asymmetric warfare,” and the discovery that terrorists need “failed countries” (or regions of failed countries) would have been considered less than sensational in biblical times, let alone by Mao Tse-tung (from the caves of Adulam to the caves of Yenan). But past experience is no longer the only key for understanding terrorism. The crucial new elements are, as I tried to show in a book several years ago, easier access to weapons of mass destruction and the greater importance of religious-political fanaticism as a motive. At the present time, radical Islamism is the single most important force, and it will probably remain so for a considerable time to come. But there is always the danger of being blinded by current events; radical Islamism was not always the main threat and it may not always be in the future. There is no authoritative systematic guide to terrorism – no Clausewitz, not even a Jomini – and perhaps there never will be one, simply because there is not one terrorism but a variety of terrorism and what is true for one does not necessarily [[#|apply]] to others. There are major obstacles on the road toward understanding terrorism; perhaps no other topic in our time has provoked such violent emotions. Those who have been commenting with the greatest assurance on terrorism are usually concerened with one group, ethnic or political. they are not preoocupied with the general phenomemon of terrorism, but the fate and interests of the specific group with which they identify with or oppose. Those preoocupied with terrorism in the Israeli-Palestinian context (except for a small group of professional experts) are usually unwilling to give even passing thought to events in Algeria or Sri Lanka; the fact that, to give another example, suicide terrorism occurs in various parts of the world and not just in one will merely be regarded as confusing by those engaging in sweeping generalizatiosn on the subject. People preoccupied with the Kashmir conflict have little interest in events in Colombia or the Balkans – faraway countries about which little is known and that seem irrelevant to the problems at hand. Those finding justifications for the violence of the extreme left (which leads them to far-reaching generalizations about the progressive character tout court of global terrorism) tend to forget that there is also a terrorism of the far right of which they do not approve at all. The student of terrorism has to consider the general picture; any fixation on one specific aspect of terrorism is bound to lead to wrong conclusions. The use of terms like “left” and “right” has become more and more problematical with the passing of timel it has become more often than not misleading in an age of growing populism that can with equal ease adopt views and politics that used to be considered “left” and “right.” Terrorist groups of the extreme “left” have often become aggressively nationalistic, whereas those of the far right are second to none with their ardent anticapitalism and anti-Americanism. Trotskyites have given critical support to Ayatolla Khomeini and the Talkiban with their radical “anti-imperialism,” and neo-Nazis are suggesting a “third position,” an anti-Westernism that should unite extremists from the left and the right. Anti-Semitism, once the preserve of the extreme right, has spread to the far left. Is Osama bin Laden a man of the left or the right? The question is, of course, absud: The religious-nationalist terrorists have nothing in common with the ideas of the traditional, secular left; they may have in common certain features with fascism. But such comparisons are of limited relevance only; traditional Western political categories do not apply to them. They are premodern and postmodern at the same time. Another major obstacle to understanding terrorism is the psychological resistance against accepting uncomfortable facts. Such resistance to accept new facts running counter to deeply ingrained beliefs is not, of course, new. It has occurred whenever a new movement appeared on the scene; fascism and communism, to give but two examples, were interpreted in the light of the past, and what was essentially new in these movements was overlooked. This form of resistance has been frequent even in the history of science, and it should have come as not surprise that in the study of terrorism in which scientific proof and prediction do not exist, resistance should be even stronger. As a result, the debate on terrorism has resembled quite often a parade of old hobby horses. People who have ready-made explanations of why terrorism occurs will not easily give up their beliefs, however much proof to the contrary is produced. My interest in terrorism and geurilla warfare goes back some three decades. I dealth with the history of these two subjects in two volumes in the 1970s. My assunmption at the time was that while terrorism was a topic of great fascination, its political importance was limited. But I did not exclude that a time might come when, for a variety of reasons, terrorism might assume a far more important role. I mentioned in my earlier writing growring fanaticism, religious and nationalist, on the one hand and access to weapons of mass destruction on the other. Fanaticism per se is of course not new, but it has had a major rebirth – much to the surprise of those in Europe and America who had believed that it was a thing of the past. The use of the weapons of mass destruction by fanatics is yet to come. Awareness of this danger has not yet percolated in the public consciousness: the possibility, indeed the probability, that even very small groups of people will be able to inflict enormous damage on societies and that the number of victims could be infinitely greater than in the past. There is yet another crucial difference between the old terrorism and the new: until recently, terrorism was, by and large, disciriminate, selecting its victims carefully – kings and queens, government ministers, generals, and other leading political figures and officials. It was, more often than not, “propaganda by deed.” Contemporary terrorism has increasingly become indiscriminate in the choice of its victims. Its aim is no longer to conduct propaganda but to effect maximum destruction. Another important difference between the old terrorism and the new is the crucial importance of paranoiac elements in the terrorism of the far right and the extreme left, perhaps most of all in terrorists inspired by religious fanaticism. National oppression (to give but one example) is not a delusional disorder, but it is precisely in individuals and groups of religious-nationalist extremists that aggression and hostility toward others become unmanageable, and that the all-consuming concern with nonexistent hidden motives leads to a loss of the sense of reality. The outlook is poor; there are no known cures for fanaticism and paranoia. Present debates about the causes of terrorism deal with topics such as ethnic and religious tensions, globalism and antiglobalism, poverty and exploitation. But these issues could be less important with regard to the terrorism of the future; the smaller the terrorism group, the more outlandish its doctrine is likely to be and the greater the relevance of psychological factors. There is bound to be great resistance to accepting this. But there is no accounting for the perceived complaints and injuries of a handful of people by means of invoking broad social, economic, and political trends. Eventually the old science-fiction scenario of the mad scientist taking vengeance on society could become reality.

**Scenario 1 is Nuclear Terror**

**It’s coming – all obstacles can be overcome**  
  
**Bunn et al 11** (May, The U.S.-Russia Joint Threat Assessment on Nuclear Terrorism, Harvard University’s Belfer Center for Science and International Affairs. Matthew Bunn. Associate Professor of Public Policy at Harvard Kennedy School and Co-Principal Investigator of Project on Managing the Atom at Harvard University’s Belfer Center for Science and International Affairs. Colonel Yuri Morozov Senior fellow at the U.S.A and Canada Studies Institute of the Russian Academy of Sciences. Rolf Mowatt-Larssen. Senior fellow at Harvard University’s Belfer Center for Science and International Affairs, director of Intelligence and Counterintelligence at the U.S. Department of Energy. Simon Saradzhyan. Fellow at Harvard University’s Belfer Center for Science and International Affairs. William Tobey. Senior fellow at Harvard University’s Belfer Center for Science and International Affairs, deputy administrator for Defense Nuclear Nonproliferation at the U.S. National Nuclear Security Administration, 2006–2009. Colonel General Viktor I. Yesin (retired Russian Armed Forces). Senior fellow at the U.S.A and Canada Studies Institute of the Russian Academy of Sciences and advisor to commander of the Strategic Missile Forces of Russia, chief of staff of the Strategic Missile Forces, 1994–1996. Major General Pavel S. Zolotarev (retired Russian Armed Forces). Deputy director of the U.S.A and Canada Studies Institute of the Russian Academy of Sciences and head of the Information and Analysis Center of the Russian Ministry of Defense, 1993–1997, deputy chief of staff of the Defense Council of Russia, 1997–1998.<http://belfercenter.ksg.harvard.edu/files/Joint-Threat-Assessment%20ENG%2027%20May%202011.pdf>)  
  
Nuclear terrorism is a real and urgent threat. Urgent actions are required to reduce the risk. The risk is driven by the rise of terrorists who seek to inflict unlimited damage, many of whom have sought justification for their plans in radical interpretations of Islam; by the spread of information about the decades-old technology of nuclear weapons; by the increased availability of weapons-usable nuclear materials; and by globalization, which makes it easier to move people, technologies, and materials across the world. • Making a crude nuclear bomb would not be easy, but is potentially within the capabilities of a technically sophisticated terrorist group, as numerous government studies have confirmed. Detonating a stolen nuclear weapon would likely be difficult for terrorists to accomplish, if the weapon was equipped with modern technical safeguards (such as the electronic locks known as Permissive Action Links, or PALs). Terrorists could, however, cut open a stolen nuclear weapon and make use of its nuclear material for a bomb of their own. • The nuclear material for a bomb is small and difficult to detect, making it a major challenge to stop nuclear smuggling, or to recover nuclear material after it has been stolen. Hence, a primary focus in reducing the risk must be to keep nuclear material and nuclear weapons from being stolen by continually improving their security, as agreed at the Nuclear Security Summit in Washington in April 2010. • Al-Qaeda has sought nuclear weapons for almost two decades. The group has repeatedly attempted to purchase stolen nuclear material or nuclear weapons, and has repeatedly attempted to recruit nuclear expertise. Al-Qaeda reportedly conducted tests of conventional explosives for its nuclear program in the desert in Afghanistan. The group’s nuclear ambitions continued after its dispersal following the fall of the Taliban regime in Afghanistan. Recent writings from top al-Qaeda leadership are focused on justifying the mass slaughter of civilians, including the use of weapons of mass destruction, and are in all likelihood intended to provide a formal religious justification for nuclear use. While there are significant gaps in coverage of the group’s activities, al-Qaeda appears to have been frustrated thus far in acquiring a nuclear capability; it is unclear whether the group has acquired weapons-usable nuclear material or the expertise needed to make such material into a bomb. Furthermore, pressure from a broad range of counter-terrorist actions probably has reduced the group’s ability to manage large, complex projects, but has not eliminated the danger. However, there is no sign the group has abandoned its nuclear ambitions. On the contrary, leadership statements as recently as 2008 indicate that the intention to acquire and use nuclear weapons is as strong as ever.  
  
  
  
**That alone is equivalent to nuclear superpower war**  
  
**Toon et al 7** – Owen B. Toon, chair of the Department of Atmospheric and Oceanic Sciences at CU-Boulder, et al., April 19, 2007, “Atmospheric effects and societal consequences of regional scale nuclear conflicts and acts of individual nuclear terrorism,” online:<http://climate.envsci.rutgers.edu/pdf/acp-7-1973-2007.pdf>  
  
To an increasing extent, people are congregating in the world’s great urban centers, creating megacities with populations exceeding 10 million individuals. At the same time, advanced technology has designed nuclear explosives of such small size they can be easily transported in a car, small plane or boat to the heart of a city. We demonstrate here that a single detonation in the 15 kiloton range can produce urban fatalities approaching one million in some cases, and casualties exceeding one million. Thousands of small weapons still exist in the arsenals of the U.S. and Russia, and there are at least six other countries with substantial nuclear weapons inventories. In all, thirty-three countries control sufficient amounts of highly enriched uranium or plutonium to assemble nuclear explosives. A conflict between any of these countries involving 50-100 weapons with yields of 15 kt has the potential to create fatalities rivaling those of the Second World War. Moreover, even a single surface nuclear explosion, or an air burst in rainy conditions, in a city center is likely to cause the entire metropolitan area to be abandoned at least for decades owing to infrastructure damage and radioactive contamination. As the aftermath of hurricane Katrina in Louisiana suggests, the economic consequences of even a localized nuclear catastrophe would most likely have severe national and international economic consequences. Striking effects result even from relatively small nuclear attacks because low yield detonations are most effective against city centers where business and social activity as well as population are concentrated. Rogue nations and terrorists would be most likely to strike there. Accordingly, an organized attack on the U.S. by a small nuclear state, or terrorists supported by such a state, could generate casualties comparable to those once predicted for a full-scale nuclear “counterforce” exchange in a superpower conflict. Remarkably, the estimated quantities of smoke generated by attacks totaling about one megaton of nuclear explosives could lead to significant global climate perturbations (Robock et al., 2007). While we did not extend our casualty and damage predictions to include potential medical, social or economic impacts following the initial explosions, such analyses have been performed in the past for large-scale nuclear war scenarios (Harwell and Hutchinson, 1985). Such a study should be carried out as well for the present scenarios and physical outcomes.

**Scenario 2 is Bioterror**

**Recent technology advances make it likely**  
  
**Garrett 11** [Laurie Garrett is senior fellow for global health at the Council on Foreign Relations, recipient of the 1996 Pulitzer Prize for her coverage of the Ebola epidemic in what was then Zaire, and author of I Heard the Sirens Scream: How Americans Responded to the 9/11 and Anthrax Attacks, 12/15/11, “The Bioterrorist Next Door”. <http://www.foreignpolicy.com/articles/2011/12/14/the_bioterrorist_next_door?page=0,0>]  
  
In September, an amiable Dutchman stepped up to the podium at a scientific meeting convened on the island of Malta and announced that he had created a form of influenza that could well be the deadliest contagious disease humanity has ever faced. The bombshell announcement, by virologist Ron Fouchier of Erasmus Medical Center, sparked weeks of vigorous debate among the world's experts on bioterrorism, influenza, virology, and national security over whether the research should have been performed or announced and whether it should ever be published. Meanwhile, a joint Japanese-American research team led by the University of Wisconsin's Yoshihiro Kawaoka says that it, too, has manufactured a superflu. Additionally, a team at the U.S. Centers for Disease Control and Prevention (CDC) in Atlanta has acknowledged doing similar research, without successfully making the über flu. The U.S. National Science Advisory Board for Biosecurity is now deliberating whether to censor publication of the Fouchier and Kawaoka papers, though it lacks any actual power to do so: It could so advise scientific journals, but editors would still decide. The advisory board is expected to release its decision on Dec. 15. The interest in this brave new world of biology is not limited to the scientific community. U.S. Secretary of State Hillary Clinton made a surprise visit to Geneva on Dec. 7, addressing the Biological Weapons Convention review conference. The highest-ranking U.S. official to speak to the biological weapons group in warned, "The emerging gene-synthesis industry is making genetic material widely available. This obviously has many benefits for research, but it could also potentially be used to assemble the components of a deadly organism." "A crude but effective terrorist weapon can be made by using a small sample of any number of widely available pathogens, inexpensive equipment, and college-level chemistry and biology," Clinton also stated. "Less than a year ago, al Qaeda in the Arabian Peninsula made a call to arms for, and I quote, 'brothers with degrees in microbiology or chemistry to develop a weapon of mass destruction.'" Noting that "It is not possible, in our opinion, to create a verification regime" for biological weapons compliance under the convention, Clinton called for voluntary transparency on biological experimentation among the 165 countries that have signed the agreement. Officials throughout the U.S. government are declining to comment on the influenza experiments or elaborate on Clinton's comments and appearance in Geneva. The influenza scientists were politely but firmly instructed recently by U.S. officials to keep their mouths shut and provide no data or details regarding their experiments to anybody. Sources inside the Dutch, German, and French governments say that discreet agreement was reached among Western leaders to greet the influenza pronouncements with a wall of silence, pending the advisory board's decision and detailed analysis of the experiments by classified intelligence and scientific bodies. Should we worry? If these scientists have indeed used the techniques that they have verbally described (but not yet published) to produce a highly contagious and virulent form of the so-called "bird flu," the feat can at least theoretically be performed by lesser-skilled individuals with nefarious intentions. Perhaps more significantly, the evolutionary leaps might be made naturally, via flu-infected birds, pigs, even humans. In other words, the research has implications for both terrorism and a catastrophic pandemic. Moreover, several experimental antecedents involving smallpox-like viruses and polio lend credence to the idea that concocting or radically altering viruses to create more lethal or transmissible germs is becoming an easier feat and an accidental byproduct of legitimate research. The advisory board is debating whether the work, as well as details on how the flu viruses were deliberately mutated, should be published. That is the wrong question. As a practical matter, experimental results are now shared with lightning speed between laboratories, and I know that several leading scientists outside Fouchier's and Kawaoka's labs already recognize exactly how these experiments were executed. The genie is out of the bottle: Eager graduate students in virology departments from Boston to Bangkok have convened journal-review debates reckoning exactly how these viral Frankenstein efforts were carried out. The list of attempts by governments to stifle scientific information is lengthy and marked by failure. I was at a 1982 optical engineering meeting in San Diego that was disrupted by a censorship order handed down by the Ronald Reagan administration's security chief, Adm. Bobby Ray Inman, compelling seizure of about 100 papers. The administration claimed the findings in those mathematics papers would, in Soviet hands, pose an existential threat to the United States -- an assertion that proved laughable when the studies soon saw the light of day. In 2006, George W. Bush's administration tried to block climate change–related presentations by NASA scientist James Hansen; every single one of Hansen's data points swiftly appeared on the Internet. Rather than trying to censor research because its inevitable release might be harmful, we ought to be having a frank, open discussion about its implications. The correct questions that scientists, national security and political leaders, and the public ought to be asking are: How difficult was it to perform these experiments? Could they be replicated in the hands of criminals or would-be terrorists? What have these experiments shown us about the likelihood that the H5N1 "bird flu" virus will naturally evolve into this terrifying form? Are we safer, or less secure, today due to the post-2001 anthrax-inspired proliferation of high-security biological laboratories?  
  
  
  
**It spreads globally**  
  
**Kellman 8** (Barry Kellman is the director of the International Weapons Control Center, “Bioviolence: A Growing Threat”, The Futurist, May-June 2008, <http://www.wfs.org/March-April09/MJ2008_Kellman.pdf>)  
  
A looming danger confronts the world—the threat of bioviolence. It is a danger that will only grow in the future, yet we are increasingly failing to confront it. With every passing day, committing a biocatastrophe becomes a bit easier, and this condition will perpetuate for as long as science progresses. Biological warfare is as old as conflict, of course, but in terms of the objectives of traditional warfare— gaining territory or resources, compelling the surrender of an opposing army—biological weapons weren’t very effective. If the objective is to inflict mass death and panic on a mixed population, however, emerging bioweapons offer remarkable potential. We would be irresponsible to presume that radical jihadists like al Qaeda have ignored said potential. What’s New in Bioviolence? Bioviolence refers to the many ways to inflict disease as well as the many people who might choose to do so, whether heads of states, criminals, or fanatics. Fortunately, doing bioviolence is technically far more difficult than using conventional explosives. Natural pathogens like anthrax are difficult to weaponize. Smallpox remains unavailable (presumably); plague is readily treatable; Ebola k i l l s t o o q u i c k l y t o i g n i t e a p a ndemic. But emerging scientific disciplines—notably genomics, nanotechnology, and other microsciences— could alter these pathogens for use as weapons. These scientific disciplines offer profound benefits for humanity, yet there is an ominous security challenge in minimizing the danger of their hostile application. For exampl e , highly dangerous agents can be made resistant to vaccines or antibiotics. In Australia, scientists introduced a gene into mousepox (a cousin of smallpox) to reduce pest populations—it worked so well that it wiped out 100% of affected mice, even those that had immunity against the disease. Various bacterial agents, such as plague or tularemia (rabbit fever), could be altered to increase their lethality or to evade antibiotic treatment. Diseases once thought to be eradicated can now be resynthesized, enabling them to spread in reg ions where there is no natural immunity. The polio virus has been synthesized from scratch; its creators called it an “animate chemical.” Soon, it may be resynthesized into a form that is contagious even among vaccinated popu l a t i o n s . Recreation of long eradicated livestock diseases could ravage herds severely lacking in genetic diversity, damage food supplies , and cause devastating economic losses. Perhaps the greatest biothreat is the manipulation of the flu and other highly contagious viruses, such as Ebola. Today, scientists can change parts of a virus’s genetic material so that it can perform specific functions. The genomic sequence of the Spanish flu virus that killed upwards of 40 million people nearly a century ago has been widely published; any savvy scientist could reconstruct it. The avian flu is even more lethal, albeit not readily contagious via casual aerosol delivery. A malevolent bioscientist might augment its contagiousness. The Ebola virus might be manipulat ed so that i t ki l l s more slowly, allowing it to be spread farther before its debilitating effects altogether consume its carrier. A bit further off is genetic manipulation of the measles virus—one of the great killers in human history—rendering useless the immunizations that most of us receive in early childhood. Soon , laboratory resynthesis of smallpox may be possible. Advanced drug delivery systems can be used to disseminate lethal agent s to broad populations . Bioregulators — small organic compounds that modify body systems— could enhance targeted delivery technologies. Some experts are concerned that new weapons could be aimed at the immune, neurological, and neuroendocrine systems. Nanotechnology that lends itself to mechanisms for advanced disease detection and drug delivery—such as gold nanotubes that can administer drugs directly into a tumor—could also deliver weaponized agents deep into the body, substantially raising the weapon’s effectiveness. Altogether, techniques that were on the frontiers of science only a decade or two ago are rapidly mutating as progress in the biological sciences enables new ways to produce lethal catastrophe. Today, they are on the horizon. Within a decade, they will be pedestrian. According to the National Academies of Science, “The threat spectrum is broad and evolving—in some ways predictably, in other ways unexpectedly. In the future, genetic engineering and other technologies may lead to the development of pathogenic organisms with unique, unpredictable characteristics.” For as far into the future as we can possibly see, every passing day it becomes slightly easier to commit a violent catastrophe than it was the day before. Indeed, the rapid pace of advancing science helps explain why policies to prevent such a catastrophe are so complicated. Bioviolence Jihad? Some experts argue that terrorists and fanatics are not interested in bioviolence and that the danger might therefore be overblown. Since there have been no catastrophic bioviolence attacks, these experts argue, terrorists lack the intention to make bioweapons. Hopefully, they are correct. But an enormous amount of evidence suggests they are wrong. From the dawn of biology’s ability to isolate pathogens, people have pursued hostile applications of biological agents. It is perilous to ignore this extensive history by presuming that today’s villains are not fervent about weaponizing disease. Not a single state admits to having a bioweapons program, but U.S. int e l l i g e n c e o f f i c i a l s a s s e r t t h a t a s many as 10 states might have active programs, including North Korea, Iran, and Syria. Moreover, many terrorist organizations have expressed interest in acquiring biological weapons. Whatever weight the taboo against inflicting disease might have for nation-states, it is obviously irrelevant to terrorists, criminals, and lunatics. Deterrence by threat of retaliation is essentially meaningless for groups with suicidal inclinations who are likely to intermingle with innocent civilians. Al -Qaeda and aff i l iat ed I s lami c fundamentalist organizations have overtly proclaimed their intention to develop and use bioweapons. The 11th volume of al-Qaeda’s Encyclopedia of Jihad is devoted to chemical and biological weapons. Indeed, alQaeda has acknowledged that “biological weapons are considered the least complicated and easiest to manufacture of all weapons of mass destruction.” Al-Qaeda is widely reported to have acquired legal pathogens via publicly available scientific sources. Before 9/11, al-Qaeda operatives reportedly purchased anthrax and plague from arms dealers in Kazakhstan, and the group has repeatedly urged followers to recruit microbiology and biotechnology experts. Follow ing th e Ta l iban ’ s fa l l , f iv e a l Qaeda biologi cal weapons labs in Afghanistan tested positive for anthrax. Documents calculating aerial dispersal methods of anthrax via balloon were discovered in Kabul, along with anthrax spore concentrate at a nearby vaccine laboratory. According to a lengthy fatwa commissioned by Osama bin Laden, jihadists are entitled to use weapons of mass destruction against the infidels, even if it means killing innocent women, children, and Muslims. No matter that these weapons cannot be specifically targeted. “[N]othing is a greater duty, after faith itself, than repelling an enemy attacker who sows corruption to religion and the world.” According to the fatwa, “No conditions limit this: one repels the enemy however one can.” The sentiment might be reprehen sible, but it is certainly not irrational. Even the most passionate terrorists must realize that conventional attacks are not bringing the West to its knees. The 9/11 strikes, the bombing of the Madrid and London subways, and numerous smaller attacks have all put civilization on edge, but history marches inexorably forward. A few thousand people can be killed, yet Western armies still traverse the world, and Western economies still determine winners and losers. From this perspective, the stakes must be raised. Bioviolence is perhaps the most dire, easiest means to execute existential danger. What Might Bioviolence Accomplish? Envision a series of attacks against capitals of developing states that have close diplomatic linkages with the United States. The attacks would carry a well-publicized yet simple warning: “If you are a friend of the United States, receive its officials, or suppo r t i t s po l i c i e s , thou sand s o f y o u r p e o p l e wi l l g e t s i c k . ” How many a t ta ck s in how many c i t i e s would it take before international diplomacy, to say nothing of international transit, comes to a crashing halt? In comparison to use of conventional or chemical weapons, the potential death toll of a bioattack could be huge . Al though the numbe r of victims would depend on where an attack takes place, the type of pathogen, and the sophistication of the weapons maker, there is widespread consensus among experts that a heightened attack would inflict casualties exceedable only by nuclear weapons. In comparison to nuclear weapons, bioweapons are far easier and cheaper to make and transport, and they can be made in facilities that are far more difficult to detect. The truly unique characteristic of c e r t a i n bioweapons t h a t d i s t i nguishes them from every other type of weapon is contagion. No other type of weapon can replicate itself and spread. Any other type of attack, no matter how severe, occurs at a certain moment in time at an identifiable place. If you aren’t there, you are angry and upset but not physically injured by the attack. An attack with a contagious agent can uniquely spread, potentially imperiling target populations far from where the agents are released. A bio - offender could infect his minions with a disease and send them across borders before symptoms are obvious. Carriers will then spread it to other unsuspecting victims who would themselves become extended bioweapons, carrying the disease indiscriminately. There are challenges in executing such an attack, but fanatical terrorist organizations seem to have an endless supply of willing suicide attackers. All this leads to the most important characteristic of bioviolence: It raises incomparable levels of panic. Contagious bioviolence means that planes fly empty or perhaps don’t fly at all. People cancel vacation and travel plans and refuse to interact with each other for fear of unseen affliction. Public entertainment events are canceled; even going to a movie becomes too dangerous. Ultimately, bioviolence is about hiding our children as everyone becomes vulnerable to our most fundamental terror: the fear of disease. For people who seek to rattle the pillars of modern civilization and perhaps cause it to collapse, effective use of disease would set in motion political, economic, and health consequences so severe as to call into question the ability of existing governments to maintain their citizens’ security. In an attack’s wake, no one would know when it is over, and no government could credibly tell an anxious population where and when it is safe to resume normal life. While it is difficult to specify when this danger will strike, there should be no doubt that we are vulnerable to a rupture. Just as planes flying into the Twin Towers on September 11, 2001, instantly became a historical marker dividing strategic perspectives before from after, the day that disease is effectively used as an instrument of hate will profoundly change everything. If you want to stop modern civilization in its tracks, bioviolence is the way to go. The notion that no one will ever commit catastrophic bioviolence is simply untenable. What Can We Do? How can we confront these growing dangers? First, we must appreciate the global nature of the problem. Perpetrators from anywhere can get p a t h o g e n s f ro m v i r t u a l l y e v e r ywhe re . Biore s earch labs that onc e were concentrated in about two dozen developed states are proliferating, expanding the risk that lethal agents could be diverted and misused. The knowledge needed to weaponize pathogens is available on the Internet. An attack can be prep a r e d t h ro u g h e a s y n e tw o r k s o f transnational communication. Once a bioweapon is prepared, terrorists or other perpetrators from anywhere can slide across national boundaries and release disease anonymously. Once released, a contagious agent would spread without regard for boundaries, race, religion, or nationality. Public health responses would have to be internationally coordinated. New modes of international l egal coope rat ion would immediately be needed to investigate the crime. Thus, bioviolence dangers shrink the planet into an interdependent neighborhood. It makes no sense for any particular country to try to insulate its homeland from these dangers. No missile defense system will p ro t e c t u s f rom b i o v i o l e n c e . Improved border security will not keep disease at bay. National efforts to enhan c e m ed i ca l p repa redn e s s hav e virtues, but these defenses can be readily circumvented. To prevent bioviolence requires policies that focus on humanity as a species and that are implemented everywhere with centralized governance. Antibioviolence policies must be global. Ye t , advanc ing ant i -bioviol enc e policies is what the international community does worst. Bioviolence dangers are unnecessarily high because national and international antibioviolence strategies are gap-ridden, often incoherent, and not globally observed. As a result, we are all virtually naked in the face of unacceptable dangers. No ot her t hreat pre s ent s such a s tark cont ras t between severity of harm and a failure of leadership to reduce risks. Most important, existing institutional arrangements are inadequate. In sharp contrast to most other global security challenges, there is no responsible international authority that defines relevant prohibitions and responsibilities, implements policies over time, or evaluates whether obligations are being fulfilled. With regard to global bioviolence prevent i o n p o l i c i e s , t h e r e ’ s n o b o d y i n charge. No one is responsible; no one is accountable. The absence of authority is profoundly dangerous. Bioviolence prevention and preparedness requires a sizable orchestra, made up of various instruments, to play complicated music in harmony. Today, there is not a bad “conductor”, there is no conductor at all. The result is cacophony. Simply stated, bioviolence is the dark s ide of global izat ion, ye t int e rna tional alarms of bioviolence ring nowhere! We need a comprehensive national and international strategy for bioviol enc e prevent ion . [Se e box: “Five S t r a t e g i e s f o r P r e v e n t i n g B i oviolence,” page 30.] Policies should be pursued within an integrated approach that enables each policy to gain strength from all the others. Such policies are potentially available and effective, but they demand progressive changes in our global order. The Security Mission Global bioviolence prevention and preparedness policies are imperative, but also imperative is recognition that the world faces natural disease horrors. Where mass public health challenges are daily phenomena, the risks of terrorists using pathogens must be weighed against more tangible natural threats. Simply stated, it is illegitimate to insist that every nation adopt policies for preventing human-inflicted disease without acknowledging the silent genocide of natural disease that is responsible for millions of deaths. But neither is it legitimate to view bioviolence dangers as distractions from efforts to combat natural disease and therefore to put off beneficial measures until those afflictions are defeated. To do so frustrates forward movement on cost-effective initiatives that could help build an international security architecture for advancing science and health. Thus, bioviolence prevention must be a facet of a broad international commitment to: 1. Prevent the spread of disease ( e .g. , through publ i c -heal th measures). 2. Enhance protection against and cures for disease (e.g., through vaccination and drug therapies). 3. Supervise the conduct of biological science. 4. Criminalize unauthorized or improper use of pathogens. From this foundation should flow a policy commitment to the growth of bioscience as a global public good. Policies to encourage its worldwide spread deserve vigorous support. This governance mission should, therefore, be conceived as a global covenant . As bios c i enc e goe s forward as a fundamental pillar of human progress, all nations must undertake common responsibilities to prevent bioviolence even as the burdens associated with those responsibilities are differentiated according to wealth and capability. From everyone according to their abilities—to all for the benefit of all. The United Nations’ Importance The United Nations represents the b e s t venu e fo r a new gove rnanc e platform that can accommodate the need for an integrated global strategy agains t bioviol enc e . Only the United Nations has the necessary in ternational legitimacy, and only the Uni t ed Nat ions can int egrat e the many sectors—health, law enforcement, science, military, emergency preparedness—that must devote expertise and resources. A primary consideration here is to minimize any bureaucratic reshuffling. There is certainly no need to modify or replicate existing capabilities. Many relevant governance tasks are already addressed by one or more international organizations. For example, the World Health Organization should continue to be responsible for addressing the health implications of a pandemic, whether natural or malevolent. Interpol should continue to be responsible for a d d re s s i n g b i o v i o l e n c e ’ s l aw e nforcement implications. Indeed, the UN’s role should be only to coordinate the performance of these tasks. Broadly viewed, the United Nations should be able to undertake three functions: First, a specific UN agency should stimulate bioscience development by incorporating security concerns into the fabric of scientific undertakings and by assisting countries in using bioscience in ways that are consistent with policies for preventing bioviolence. Because science, development, and security can and must be mutually reinforcing, this agency’s primary responsibilities would be to promote and distribute knowledge and build capacity to fulfill obligations, especially in developing nations. Second, a UN office should coordinate activities among the relevant international/regional organizations, professional networks, and expert bodies. For example, three major international organizations focus on health (World Health Organization, Animal Health Organization, and the Food and Agriculture Organization); Interpol and Europol both focus on law enforcement; a large array of organizations focus on conveyance of dangerous items (e.g., International Maritime Organization, International Civil Aviation Organization). This UN office should be a steering mechanism to engage each of these orga nizations’ specialized expertise and to identify synergies. Third, a Security Council Committee should be authorized to investigate bioviolence preparations as well as respond and coordinate assistance to a bioviolence attack. Situations that call for investigation or response arise rarely, but they carry disproportionate significance for international peace and security. The Security Council Committee should not advance programmatic agendas, but it should be able to wield expertise and political muscle in volatile situations. Its primary mission would be to enable the international community to sustain global order in the face of a bioviolence challenge. Ever since someone harnessed a new technology to create a weapon with more devastating effects, there has been a link—a double helix—between the progress of science and the pursuit of security. This is inevitable. These dangers of bioviolence do not a rg u e f o r re l i n q u i s h i n g s c i e n t i f i c progress, but they disprove notions tha t n ew cha l l eng e s can b e e ff e ct ive ly addre s s ed wi th ye s t e rday’ s policies. At bottom is a condition unique to this historical era: Scientific progress is intertwined with escalating malevolence threatening human security. Progressing capabilities improve our l ive s and ye t , inext r i cably, enable truly harmful weapons against humanity. Here are the challenges to international peace and security at the beginning of the third millennium. Failing to do the right thing in response to these challenges could have dire consequences for all humanity.  
  
  
  
That causes extinction  
  
Sandberg et al 8—Research Fellow at the Future of Humanity Institute at Oxford University. PhD in computation neuroscience, Stockholm—AND—Jason G. Matheny—PhD candidate in Health Policy and Management at Johns Hopkins. special consultant to the Center for Biosecurity at the University of Pittsburgh—AND—Milan M. Ćirković—senior research associate at the Astronomical Observatory of Belgrade. Assistant professor of physics at the University of Novi Sad. (Anders, How can we reduce the risk of human extinction?, 9 September 2008,<http://www.thebulletin.org/web-edition/features/how-can-we-reduce-the-risk-of-human-extinction>)  
  
  
The risks from anthropogenic hazards appear at present larger than those from natural ones. Although great progress has been made in reducing the number of nuclear weapons in the world, humanity is still threatened by the possibility of a global thermonuclear war and a resulting nuclear winter. We may face even greater risks from emerging technologies. Advances in synthetic biology might make it possible to engineer pathogens capable of extinction-level pandemics. The knowledge, equipment, and materials needed to engineer pathogens are more accessible than those needed to build nuclear weapons. And unlike other weapons, pathogens are self-replicating, allowing a small arsenal to become exponentially destructive. Pathogens have been implicated in the extinctions of many wild species. Although most pandemics "fade out" by reducing the density of susceptible populations, pathogens with wide host ranges in multiple species can reach even isolated individuals. The intentional or unintentional release of engineered pathogens with high transmissibility, latency, and lethality might be capable of causing human extinction. While such an event seems unlikely today, the likelihood may increase as biotechnologies continue to improve at a rate rivaling Moore's Law.

**Contention 2 is Hotspots**

**Multiple factors hinder the US’s ability to respond quickly to global events now**  
  
**Damphousse 8** – Marine, lieutenant colonel, MA in aeronautical engineering, former Space Control and Special Technical Operations action officer , Chief of Advanced Concepts at the NSSO. [Concept of Operations for the Small Unit Space Transport and Insertion (SUSTAIN) Capability. Includes input from the NSSO, air force, special forces, and marine corps. <http://www.docstoc.com/docs/20263477/Concept-of-Operations-for-the-Small-Unit-Space-Transport>]  
  
  
  
3.1 SOCOM Capability Gaps 3.1.1 Functional Concept Component The primary functional component deficiency that this CONOPS addresses is a projection that given current trends, USSOCOM will lack an Expeditionary Attribute of tempo dominance in the future. In coming years there will exist a gap between SOF's real-time, speed-of-light awareness of details regarding unfolding global contingencies and their actual ability to respond relevantly and effectively to said contingencies. From the standpoints of relative tempo, operational security (OPSEC), and geographic proximity, SOF teams will become less rapidly deployable, employable, and sustainable throughout the global battlespace relative to the tempo of adversary actions. Anti-access and area-denial environments combined with longer range and more lethal adversary weapons will compound this relatively slowed responsiveness. SOCOM elements will not be capable of rapid deployment and immediate employment, or be capable of seamlessly handing off to conventional forces for sustained operations as a crisis or conflict develops. 3.1.2 Operational Mission and Function Deficiencies While the speed of terrestrial and national security space Intelligence Surveillance, and Reconnaissance (ISR) capabilities is keeping pace with the accelerated tempo of localized events in the modem world, the ability of SOF teams to physically respond (troops on the ground) at any global locality is not. If this deficiency is not resolved, SOCOM will become increasingly less capable of appearing on the scene to respond relevantly and effectively to exploit strategic opportunities or minimize strategic damage at the earliest stages of a contingency. To illustrate the deficiencies, the following functions that are essential for SOF in order that the military objectives of the JFC and/or the NCA are achieved, increasingly cannot be performed without unacceptable limitations. 3.1.2.1 Mobility and Maneuver A deficiency exists with respect to SOCOM's ability to deliver tailored SOF teams to any terrestrial point globally in order to act on current intelligence. Instead, SOF insertion options are limited by speed, range, signature, and vulnerability of evolutionary aerospace, land and undersea insertion technologies, as well as the vulnerability of expeditionary delivery platforms. The highest speed of global SOCOM insertion from CON US is limited to that of jet aircraft arriving within the constraints of in-flight refueling, foreign airspace over-flight restrictions, non permissive air-defense environments, and the possible absence of suitable airfields. It should be noted that airspace sovereignty is commonly accepted as extending to an altitude of 50 miles above the surface of the earth. Similarly, the highest speed of global surface SOP movement is limited to that of ships, boats, assault amphibians, hovercraft, wheeled and tracked land vehicles, and combat swimmers, all significantly slower than terrestrial aviation platforms. Other constraints include underway replenishment, 12-mile littoral coastal sovereignty, emergent antiship threats, and known challenges of overland movement in restrictive or non-peimissive land combat environments. 3.1.2.2 Firepower The weapons that will threaten independently operating SOF in the 21st Century will continue to advance in terms of range, speed, and lethality. The pace of the advancements in adversary tactical, offensive anti-air, land, and surface threat capabilities has been greater than the pace of the U.S.'s capability to counter them with improvements to protection and conventional kinetic weapons technologies alone. Revolutionary weapons capabilities are needed to preserve assault support insertion of SOP as a viable course of action for the JFC.

**Scenario 1 is Rapid Response**

**Speed matters, not size**  
  
**DTI 5** [September/October. Defense Technology International – Defense magazine edited by Sharon Weinberger, a national security writer focusing on science and technology issues. pp 21. <http://www.nxtbook.com/fx/books/mh/awdti0905/>]  
  
“The earlier you intervene in a crisis . . . the lower the national cost,” says Franz Gayl, the science and technology adviser to the Marine Corps’ deputy commandant for plans, policies and operations. Gayl, who is temporarily assigned as a student at the National Defense University’s Industrial College of the Armed Forces in Washington, is a proponent of the idea that some ground presence – even a handful of specially trained marines – can provide the ability to react quickly to trouble, or, even better, set the stage to avoid major conflict.  
  
  
  
**American rapid response capabilities are crucial to credibly deter aggression**  
**Gerson 9** – Michael S. Gerson is a research analyst in the Strategic Initiatives Group, where his research focuses on nuclear and conventional deterrence, nuclear strategy, arms control, missile defense, and WMD proliferation [“Conventional Deterrence in the Second Nuclear Age”. Parameters, US Army War College Quarterly, Autumn 2009.<http://www.carlisle.army.mil/usawc/parameters/Articles/09autumn/gerson.pdf>]  
  
This article seeks to expand the current debate about the role and utility of conventional forces in US deterrence strategies by reexamining the traditional logic of conventional deterrence, which focuses on deterrence by denial, in the context of the modern international security environment. It is primarily concerned with the role of US conventional forces in extended deterrence, defined as the threat of force to protect allies and friends, rather than “central” or “homeland” deterrence. 3 This focus on extended deterrence—and especially on the role of deterrence by denial in extended deterrence—highlights the central importance of protecting territory from attack and invasion. Historically, the desire for control over specific territory has been a frequent motivator of interstate crises and conflict. 4 While interstate conventional wars have significantly declined since the end of the Second World War, the potential for conflict over Taiwan or on the Korean Peninsula, the prospect of future clashes over control of scarce natural resources, and the 2008 war between Georgia and Russia attest to the continued possibility of conflict over specific territory that has important strategic, economic, political, religious, historical, or socio-cultural significance. Consequently, this article examines how US conventional military power can be used to deter conventional aggression against friends and allies by threatening to deny an adversary its best chance of success on the battlefield—a surprise or short-notice attack with little or no engagement with American military forces. The ability to prevent an opponent from presenting the United States with a fait accompli—that is, from striking quickly and achieving victory before substantial US (and perhaps coalition) forces can be deployed to the theater—is a central component of modern conventional deterrence. Conventional Deterrence in US Strategy Broadly defined, deterrence is the threat of force intended to convince a potential aggressor not to undertake a particular action because the costs will be unacceptable or the probability of success extremely low. This threat has always been one of the central strategic principles by which nations attempted to prevent conflict. 5 Even so, the development and rigorous analysis of deterrence as a discrete strategic concept did not occur until the advent of nuclear weapons. Deterrence theory was developed against the backdrop of the Cold War nuclear arms race and focused on the prevention of nuclear conflict. Yet, while the majority of academic research and public debate was concerned with the prevention of nuclear war—the net result was that deterrence became synonymous with nuclear weapons—conventional deterrence, appropriately, assumed an increasingly important role in the development of military strategy during this period. 6 As the Soviet Union began to amass a large and survivable nuclear arsenal that was capable of global reach in the late 1950s and early 1960s, the credibility of the Eisenhower Administration’s policy of “Massive Retaliation,” which threatened an overwhelming nuclear response to virtually any Soviet aggression, was brought into question. Once the Soviet Union developed survivable nuclear capabilities that could reach the US homeland, many defense officials and analysts argued that the threat of Massive Retaliation lacked credibility against anything other than an all-out Soviet nuclear attack. 7 As a result, western military strategy eventually shifted from total reliance on nuclear weapons as a means of deterring both Soviet conventional and nuclear aggression to a strategy of “Flexible Response,” which included conventional and nuclear elements. From the mid-1960s onward, NATO relied on conventional power, backed by the threat of nuclear escalation, to deter any conventional assault on Europe by the numerically superior Warsaw Pact, and relied on nuclear weapons to deter nuclear attacks. 8 By incorporating “direct defense”—the ability to respond to Warsaw Pact aggression, especially conventional aggression, with proportionate (i.e., conventional) force—into NATO strategy, the concept of Flexible Response sought to create a more credible means of deterrence across the entire spectrum of conflict Following the Cold War, conventional greater role in US national security strategy. With the demise of the Soviet Union and significant advancements in conventional precision-guided munitions, many defense analysts concluded that “smart” weapons could provide a powerful deterrent against a wide variety of threats. While some commentators argued that nuclear weapons were still necessary to prevent nuclear attacks, and others contended that conventional weapons were “the only credible deterrent” even against nuclear threats, almost all agreed that technologically advanced conventional weapons could now take the place of nuclear weapons in many missions. 9 Following the remarkable success of sophisticated conventional firepower in Operation Desert Storm, William Perry declared, “This new conventional military capability adds a powerful dimension to the ability of the United States to deter war.” 10 In the current international security environment, conventional deterrence can be useful against nonnuclear and nuclear-armed adversaries. For regimes that do not possess nuclear, chemical, or biological weapons, US conventional capabilities will likely be the most credible and potent deterrent. History suggests that, in general, nations without weapons of mass destruction (WMD) are not intimidated by an opponent’s nuclear capabilities. For example, nuclear weapons did not give the United States significant advantages before or during the Korean and Vietnam wars; nor did they dissuade Egypt from attacking Israel in the 1973 Yom Kippur War 11 or Argentina from attacking the British-controlled Falkland Islands in 1982. 12 This circumstance is due in part to the perceived impact of the “nuclear taboo,” a moral and political aversion to using nuclear weapons that has emerged due to the long absence of nuclear use in time of war. The nuclear taboo reduces the credibility—and therefore the utility—of nuclear weapons, especially against regimes not possessing nuclear weapons or other WMD. 13 Although implicit or explicit nuclear threats may lack credibility against non-WMD regimes, many potential adversaries believe that the United States will use conventional firepower, especially because America has conventional superiority and a demonstrated willingness to use it. Consequently, when dealing with non-WMD-related threats, conventional deterrence will be the most likely mechanism for deterring hostile actions. 36 Parameters According to Admiral Michael Mullen, the current Chairman of the Joint Chiefs of Staff, “A big part of credibility, of course, lies in our conventional capability. The capability to project power globally and conduct effective theater-level operations . . . remains essential to deterrence effectiveness.” 14 Conventional deterrence also plays an important role in preventing nonnuclear aggression by nuclear-armed regimes. Regional nuclear proliferation may not only increase the chances for the use of nuclear weapons, but, equally important, the possibility of conventional aggression. The potential for conventional conflict under the shadow of mutual nuclear deterrence was a perennial concern throughout the Cold War, and that scenario is still relevant. A nuclear-armed adversary may be emboldened to use conventional force against US friends and allies, or to sponsor terrorism, in the belief that its nuclear capabilities give it an effective deterrent against US retaliation or intervention. 15 For example, a regime might calculate that it could undertake conventional aggression against a neighbor and, after achieving a relatively quick victory, issue implicit or explicit nuclear threats in the expectation that the United States (and perhaps coalition partners) would choose not to get involved. In this context, conventional deterrence can be an important mechanism to limit options for regional aggression below the nuclear threshold. By deploying robust conventional forces in and around the theater of potential conflict, the United States can credibly signal that it can respond to conventional aggression at the outset, and therefore the opponent cannot hope to simultaneously achieve a quick conventional victory and use nuclear threats to deter US involvement. Moreover, if the United States can convince an opponent that US forces will be engaged at the beginning of hostilities—and will therefore incur the human and financial costs of war from the start—it can help persuade opponents that the United States would be highly resolved to fight even in the face of nuclear threats because American blood and treasure would have already been expended. 16 Similar to the Cold War, the deployment of conventional power in the region, combined with significant nuclear capabilities and escalation dominance, can help prevent regimes from believing that nuclear possession provides opportunities for conventional aggression and coercion.  
  
  
  
**Agile, global military reach is key to contain aggressors and manage power transitions – every hotspot is at risk**  
  
**Munson 11** Major Peter J., master of arts in national security affairs, has published in the security studies journal Strategic Insights, Marine aviator and Middle East foreign area officer, having served most recently as Officer in Charge, Detachment A, Marine Aerial Refueler Transport Squadron 352, in support of Operation Enduring Freedom; author of Iraq in Transition [“ Back to Our Roots: Marines’ future in the Indo-Pacific”. January. Marine Corps Gazette. <http://www.mca-marines.org/gazette/back-to-our-roots>]  
  
A decade of war has focused Marines’ minds on insurgency, culture, and the permutations of modern irregular warfare, but the Nation’s greatest strategic threats lurk between the lines of economic stories from the developing world and just beyond the future years defense program. The debate over the future of the Marine Corps is shaped largely by our recent history and attractive concepts, such as fourth-generation warfare.1 While tactics and technology are important, they must be predicated upon a strategic understanding of the world and states’ policy goals within it in order to be successful. The dominant feature of today’s strategic environment is socioeconomic transformation in the developing world and concomitant change in the world’s power structure.2 This transformation will prevail over most of this century, affecting patterns of warfare in all intensities. America, still the clearly predominant power, is seeing its relative advantage over other states decline. The Marine Corps, in concert with the Navy, must orient itself on the rising poles of economic and military power in the Indo-Pacific theater, with the primary tasks of securing this economic center’s vital littoral and maritime lines of communications and acting as a credible and sustainable deterrent force against hostile actions by regional powers, particularly China. First, the Marine Corps’ strategic understanding of the challenges ahead should center on the dramatic shift of economic power to the East, including the Middle East, and the struggle of states and societies there to cope with it. This socioeconomic perspective should eschew the focus on culture above the tactical level as it clouds judgment by loading debate with an ideological perception of unchanging and irreconcilable cultures, rather than recognizing the malleability of culture for good and bad in the face of socioeconomic change. The Indo-Pacific theater, stretching from the coasts of Africa and Arabia roughly to the Kuril-Japan-Philippines-Indonesia line, will be the central front of regional power economic and security competition as rising powers vie over trade, resources, and lines of communications between Africa, the Middle East, and Asia proper. This competition will take place almost exclusively in maritime and littoral spaces, demanding that the Corps return to its roots. Second, the reality that America’s relative power advantage is waning should drive a paradigm shift toward a much more frugal approach to military operations and the strategic expenditure of power. While many of the most critical decisions in this realm are made at the national strategy and policy level, the Marine Corps is uniquely suited to correct the decadence that has been expending our national power at an alarming rate with little impact on mission accomplishment. Coping With a Return to Normalcy America’s period of unprecedented dominance, which shaped the peaceful and prosperous postwar world, is in transition as the world’s economic center of gravity shifts from the Atlantic to the Indo-Pacific.3 As a German officer noted to Frederich Engels in the 1880s, “The basis of warfare is primarily the economic life of peoples.”4 That economic life is changing greatly in the East, driving destabilizing societal changes and remaking the international power structure in which the United States is the strongest state in a much unrulier cast of rising powers. America will still be the world leader but with less of a power advantage. Its developed world allies are growing weaker from domestic fiscal and political troubles, meaning status quo leaders will have less leverage against regional powers seeking change. The last time the world saw this unstable power structure was between the World Wars, when British hegemony faded, the United States was ascendant but remained in relative isolation, Germany made its play for world domination, and Japan sought to carve out regional dominance in the Pacific.5 The results need not be so dramatic, but in this transformation we are experiencing what historian Paul Kennedy calls a return to “normalcy,”6 in which America is no longer a hyperpower but only the strongest state in a group of powers likely to come into conflict. The heart of global commerce is moving to routes that stretch from the oil fields inland of the Arabian Sea, through the littoral regions of India and China and the sea lines of communications (SLOCs) that serve them, and to the islands and coastal states of Southeast Asia. This crossroads of world commerce is tied to other theaters by water as well. The Indian Ocean stretches to emerging markets in Africa, the Bab el-Mendeb Strait and the Suez connect the Indo-Pacific to the massive European market, and the vast expanse of the Pacific connects Asia to the Americas, especially the political and economic opportunities of South America. This is China’s backyard. India’s star is rising in the region as well, but its development is more private sector-driven and less militaristic. Iran, situated on the Persian Gulf and the critical Strait of Hormuz, pursues asymmetric maritime and littoral capabilities at one end of the theater. North Korea’s weapons are a significant and unpredictable threat at the other end. Extraregional powers have interests in the Indo-Pacific too. Russia continues to maintain some blue water capability, in addition to strategic missile, bomber, and patrol capabilities. He who controls the Indo-Pacific controls the future. Chinese maritime commerce in 2020 will exceed $1 trillion, and 75 percent of its oil will come via the sea.7 The constrained SLOCs between China, her resources, and her markets are a critical vulnerability that has Chinese strategists combining 19th century naval theories with Maoist concepts of asymmetry. Chinese strategists see American hegemony as potentially hostile and desire capabilities to selectively deny access to the Indo-Pacific8 and to police it on their own. While not officially acknowledged, Chinese strategists have staked out phase lines on their sea flank consisting of first (Kurils, Japan, Ryukus, Taiwan, Philippines, and Indonesia), second (Japan, Bonins, Marianas, and Palau), and even third (Hawaii and other U.S. mid-Pacific bases) island chains9 as markers of China’s encirclement and antiaccess goals. The second chain encompasses China’s “near seas,” ranged by ballistic missiles, including a new “carrier killer” missile.10 Chinese capabilities to this end, especially if considered beyond 2020, are improving and present both challenge and opportunity for the Marine Corps. Several phenomena contribute to a rising likelihood of conflict starting around 2020. The opportunity presented by America’s self-induced power expenditures in the past decade and what Chinese analysts “gleefully” see as impending defeat in Afghanistan11 has brought increasing use of the term “multipolarity” in Chinese publications. Some speculate that America’s recent emphasis on security cooperation likewise reflects a realization that our capabilities do not match our ambitions in the region.12 This perception of a weakened and distracted America will encourage aggressive policies during the fleeting window of opportunity before China faces significant domestic challenges within the coming decades. Its one-child policy means that it faces an aging and soon-to-decline population, while its rapid growth has left behind a significant portion of the population. Inequality and corruption are bringing some insiders to question the sustainability of China’s political and economic model of growth.13 The generation now coming to power was shaped in the significantly nationalist milieu that followed the Tiananmen Square massacre of 1989, producing an expectation of Chinese dominance and a return to its rightful place as a world leader in their lifetime. Leaders seeking to sustain growth and divert domestic discontent may choose aggressive nationalistic foreign policies if their alternatives are not properly shaped through a combination of diplomacy and deterrence. Preparing for Greater Challenges The transitions in the world’s economic and power structure laid out above provide clear indications of the Corps’ likely future role and the frugal calculus that is required to avoid further depleting national resources. The Corps must continue to be an expeditionary force capable of operating across the spectrum of war, but likely developments suggest key areas of focus. Afghanistan will require small wars skills in the near term, which must be retained to deal with the effects of socioeconomic transition kindled into proxy wars by regional powers or transnational movements. Additionally, the Corps will continue to have equity in theater functional and contingency plans, especially humanitarian assistance/disaster relief and noncombatant evacuation operations. State collapse in Pakistan has been highlighted as a likely scenario in the near term, which would call on many of the above skills,14 but beyond securing nuclear material, strategic calculus dictates an extremely cautious approach to what would be a much more taxing entanglement than either Iraq or Afghanistan. Looking past these requirements, the Corps must orient itself on the challenge in the Indo-Pacific, which requires a frugal, truly expeditionary, and adaptive force capable of operating in the face of robust and asymmetric threats. In particular, the antiaccess threats and multiple chokepoint straits in the region require a Corps capable of establishing and defending advanced bases near key ports and sea lanes, operating in a distributed and maneuverable manner in high-threat environments, and maintaining the tempo of its operations in the face of jamming and defeat of communications and intelligence systems, including space-based systems. While other Services will seek high-end technological solutions, the Marine Corps should pursue intelligent capabilities and doctrines more likely to be sustainable over time and in the face of future conflict. The Nation and the Corps can best maintain access, build equity, and gain insight into the region through security cooperation and engagement over the next 5 to 10 years. Near the end of that period, small wars capabilities will likely be called for again as regional powers seek to gain influence by proxy in lower end conflicts. America, however, should judiciously avoid staking her prestige on state-building projects based on the ideology of democracy promotion. Involvement and objectives should be carefully circumscribed to serve key interests and conserve power for more significant challenges on the horizon. The likelihood of significant conflict will begin to rise somewhere around 2020, growing into midcentury. The United States will face the proliferation of strategic antiaccess weapons to regional powers and precision antiship and improved surface-to-air missile systems to virtually all threat states and many nonstate actors. While China is pursuing late-generation capabilities and attempting to expand her influence across the theater, strategists recognize that they are still well behind American capabilities. For this reason, influential analysts promote an emphasis on “informationalized” and space weapons to create a nonlinear and “noncontact” threat well past the first island chain, as well as “attack capabilities for battle operations on exterior lines.” This line of thinking seeks to outflank American air capabilities by building a “powerful navy that possesses relative space superiority,”15 while attacking air bases with ballistic missiles and aircraft carriers with the recently fielded Dong-Feng-21D (CSS–5 Mod–4) “carrier killer” missile system. For full effect, these systems require integration with over-the-horizon intelligence, surveillance, and reconnaissance systems that, once combined and fielded in sufficient numbers, pose a significant threat to U.S. assets in the Pacific and may overwhelm antiballistic missile defenses through sheer numbers. While some analysts feel these threats currently fall short of their advertised capabilities, the fielding of the CSS–5 Mod–4 was “much earlier than expected,”16 giving China years to improve before conflict is likely. What’s more, China need not achieve global parity with the United States to achieve its regional goals. In the face of likely threats and threat intentions, the Corps should focus on several capabilities. The antiaccess missile threat demands the ability to distribute forces, particularly aviation assets and naval support facilities, to multiple forward locations in the case of conflict. The Corps must be prepared to secure, defend, and operate from austere advanced bases, continuing to develop operational maneuver and distributed operations capabilities in order to project and disperse combat power. This capability must include the rapid movement of aviation assets and their ability to operate on short, unimproved, and rapidly repaired runways without ponderous support requirements. The importance and channelized nature of SLOCs in the Indo-Pacific requires a focus on rapidly securing their land flanks, particularly in straits and in the face of mobile surface-to-air and antiship missiles and swarming small boat tactics with the possibility of suicide attacks. When considering such threats, the Corps and the Nation should recognize that the kamikaze threat was swarming and asymmetric, but the stakes of the conflict merited accepting it. Finally, the Corps must account for the defense of islands and straits against future, if less capable, amphibious threats. The nature of the theater and the threat demand the agility of island hopping without a prohibitive logistical tail. Today’s Corps must regain this agility in mindset, doctrine, and equipment. Distributed operations require robust fire support, especially from aviation assets that must be capable of operations in both a high threat and an austere expeditionary environment. At face value, the Corps’ focus on manned short takeoff and vertical landing platforms answers the mail, but the reality has not lived up to the photo opportunities in combat operations. Furthermore, the cost of the Joint Strike Fighter (JSF) and other high-end capabilities, when used as single solutions, do not provide the ideal return on investment when the platforms’ full capabilities will only be needed in select scenarios by a limited number of aircraft if properly organized and tasked. These capabilities also make little sense as today’s “daily driver” when paying astronomical high-end flight hour costs for mundane missions. We are flying the wings off of expensive platforms, which will only become truer with the JSF. Instead of seeking only transformational (and transformationally expensive) platforms as the sole solution for the force, a mix of more mundane platforms, ranging from armed utility turboprop aircraft to armed unmanned aircraft systems (UAS), is warranted. These platforms can be transformationally equipped, integrated, and employed with the proper vision. Simpler plug-and-play platforms would give the Service greater numbers, greater flexibility, and a deterrent force that is sustainable fiscally and technologically. If air superiority or advanced integrated air defense systems are the problems, there will be joint fixed-wing assets on hand to deal with them, augmented by a small contingent of Marine JSFs. As Under Secretary of the Navy Robert O. Work points out, Marines must embrace the fact that future “theater entry missions” will be joint in nature,17 which should be a premise for reducing redundancy in procurement of high-end capabilities. In particular, the Corps should lead the way in the transition from manned to unmanned close air support (CAS) and antiair warfare platforms to the maximum extent possible. Rather than taking the Marine aviator “out of the loop,” this is removing the aviator’s physiological limitations and protection requirements to a ground station where he can have much more robust situational awareness tools. While some manned aircraft must be retained for specific and dynamic CAS situations and to help control UAS flights, armed UASs can generally provide greater return on investment. In today’s fight, the Corps could use the long dwell time of a UAS armed with precision weapons and an electrooptical sensor capable of positive identification and designation of difficult targets. In a high-intensity conflict, the absence of an onboard pilot reduces weight for more capable sensors, avionics, and countermeasures, while improving performance capabilities and increasing expendability. The Corps of the future must also be better able to operate in a communications, global positioning system, and satellite jam/defeat environment. The United States can expect denial of use of some of its “big wing” high-value airborne assets and may even see carrier-based aviation significantly impacted. Emission control measures on high-value platforms necessitated by threat sensors will likewise degrade the capabilities of our highly communications-dependent forces. Larger numbers of UASs can be part of a network of air and ground nodes that make up a command, control, communications, computers, and intelligence (C4I) cloud that would be much harder to attack with cyber, electronic, and information weapons. The Corps must make use of technology to improve the resilience of its C4I systems, but it must also live up to its doctrinal adherence to centralized command and decentralized control, fighting the micromanaging influence of and crippling dependence on technology. Networks of airborne sensors in affordable and expendable UAS platforms will also help the Corps with the antiaccess problem, finding the deadliest mobile antiship and antiair weapons. A distributed solution is needed for amphibious forces as well. While the joint high-speed vessel and littoral combat ship are a step in the right direction, assault forces will need to be further distributed to smaller, faster, and less expensive vessels that will be more able to evade and overwhelm swarming threats and shorebased systems reduced by aviation action. This incomplete and rudimentary collection of suggestions is meant only to point debate and innovation in a certain direction. While technology was highlighted, the human aspect of conflict is where Marines will continue to excel. For Marines steeped in the Middle East, study of and contact with the rest of the theater are a must. Our current robust engagement with U.S. Pacific Command partners is a good start, but many in the region are more concerned with the strategic balance of powers there than with engagement.18 Marine Corps capabilities must make up a significant portion of that balance, given the littoral and maritime challenges in the theater. Marines should seek to lead the way on military-to-military engagement of China, as well. At worst, this will illuminate the ways we need to innovate against a potential future foe. Staying on Our Feet Until the Fight Stemming the expenditure of America’s relative power advantage19 is central to sustainable deterrence, a key strategic consideration that has been little referenced in the conduct of American operations over the past decade. Stated bluntly by international relations scholar Stephen Walt: Decades from now, historians will look back and wonder how the United States allowed itself to get bogged down in a long and costly war to determine the political fate of [a] landlocked country whose entire gross national product (GNP) is about a quarter the size of the New York city budget.20 A more telling figure is that yearly U.S. military spending in Afghanistan alone is nearly 10 times that country’s GNP. While a discussion of the merits of the strategic conduct of the campaign in Afghanistan, or its lack thereof, lies beyond the scope of this article, the costs of any policy goal must be carefully weighed and minimized whenever possible. Expenditures today may have a hefty price in human life and national interests tomorrow as they erode America’s relative power and encourage others to pursue aggressive policies, and thus they must be scrutinized. Captivated by the Nation’s predominant power and seemingly benevolent ideology,21 American pundits often ignore such accounting, but the realist calculus of hard power and its expenditure is not lost on our foes. The United States willfully obliged al-Qaeda’s openly avowed intent to engage its enemy in a “bleeding war.”22 The 11 September 2001 attacks brought American forces to small arms range in the Muslim world, bogging America down in a decade of war, extracting over $1 trillion of military expenditures,23 inflicting significant attrition and overutilization of equipment, and precipitating the loss of prestige to various audiences. Today the United States is its own worst enemy, its ideology and waste driving spiraling expenditures (far too many of which have nothing to do with victory), much as President Ronald W. Reagan’s policies are believed to have done to the Soviet Union in the popular if questionable telling of the end of the Cold War. The Marine Corps must do all it can to stem the decline of American power by returning to a calculated, frugal, and zealously mission-focused expenditure of fiscal resources, manpower, and overall combat power in current conflicts. As we look toward the future, the watchword should be credible and sustainable deterrence of threats, signifying a much more diligent calculation of cost versus benefit across the range of operations, from procurement and personnel policy to doctrine and operational art. We must stay on our feet until the fight. Marine leaders should do all they can to stem the hemorrhage at their level, yet the brunt of these changes must be shouldered by commanders and staffs above the battalion level. The Marine Corps has always been the most frugal of the Services, but this role is ever harder to faithfully pursue. The reasons were brilliantly satirized by The Onion, in which Gen James N. Mattis purportedly writes that the United States will never win in Afghanistan unless U.S. Central Command gets a pinball machine. The sacrifices made by the troops require the best that Congressional money can buy. “We’re talking multi-ball, frequent jackpots, a third flipper midway up the game board . . . . ”24 The reality behind the satire is that all sorts of gadgets and programs are sold with similar pleas. Often the programs are less ridiculous, sometimes only marginally, but the free money mindset is rampant. When told that an onbase construction project in Afghanistan was unneeded, one contracting officer recently stated, “It’s not our money, it is USFOR(A) [United States Forces Afghanistan] money,” to legitimize the expenditure. Such attitudes are mortgaging the future of our Nation through decadent carelessness. Money is no small contributor to combat power and the economic health of the Nation. Nothing is more expensive than personnel. The Corps must be ruthless in rooting out wasteful personnel policies and returning Marines to the Operating Forces. It is the height of callousness to expect struggling taxpayers to fund the plethora of bands or the All Marine Chess Team when we also have our hand out for the most advanced equipment money can buy. Likewise, it is wrong to expect others to deploy again and again in their stead. Supporting Establishment billets, too, must be carefully scrutinized. Marines would rather have more trigger pullers by their side. Even in the Operating Forces, staff officers must be given a suppressant against the appetite for bloating staffs with individual augments that gut line units, impacting readiness and precluding Marines’ training, progression, and dwell time. We will not always have the luxury of gutting nondeployed units to fill staffs. If we will not be able to do so in the fight of our lives, there is no need to do it now. Coming challenges demand only the most sustainable and mission focused policies as the Nation enters what may be the most critical period of its history. The Marine Corps must serve the Nation and its own interests by leading the way in this dimension, rather than contributing to our hastened demise. Conclusion Whatever our vision of the future, it must be founded concretely upon possible geostrategic scenarios rather than abstract concepts centered on technology and tactics. This article has focused on China as the most significant threat on the horizon, but we must keep our eye on a range of others. Both Iran and North Korea possess dangerous weapons systems combined with fanaticism and erratic, if awkwardly rational, foreign policy. Iran can wreak havoc on the Persian Gulf and Strait of Hormuz, while North Korea can threaten commerce on two seas. India is currently a staunch ally, but that country could change dramatically in the coming decades. Nuclear armed and equipped with modern weaponry, India’s regional interests may clash with others as well. We are tangentially familiar with the perils of Pakistan and its confrontations with India, which become only more fearsome if Pakistan experiences a coup or state failure. Other prospects loom. A dictatorial and militaristic regime could emerge once again in the Arab Middle East or South America, and the United States could be called upon to rebut territorial aggression. In the least likely, but potentially worst scenario, a crisis-weakened European Union could fail, returning Europe to a patchwork of nations with conflicting interests. War on the continent within the next 50 years is not unthinkable. For all of these reasons, the Corps must maintain a global watch but should avoid Balkanizing itself into regional enclaves. Language and culture are important, but culture changes as society responds to changing economic situations, and ideological viewpoints of culture poison the cold calculus required in war. This century will witness some of the greatest socioeconomic transformations in history, and we must have the physical and intellectual agility to deal with change across the globe. When the Nation truly needs us, we will all be going to the same place, wherever that may be.

**Scenario 2 is Irregular Warfare**

**Irregular warfighting is key to preventing escalation from global conflicts and state failure**  
  
**Bennett 8** (John, Defense News, “JFCOM Releases Study on Future Threats”, 12-4, <http://www.defensenews.com/story.php?i=3850158>)  
  
The study predicts future U.S. forces' missions will range "from regular and irregular wars in remote lands, to relief and reconstruction in crisis zones, to sustained engagement in the global commons." Some of these missions will be spawned by "rational political calculation," others by "uncontrolled passion." And future foes will attack U.S. forces in a number of ways. "Our enemy's capabilities will range from explosive vests worn by suicide bombers to long-range precision-guided cyber, space, and missile attacks," the study said. "The threat of mass destruction - from nuclear, biological, and chemical weapons - will likely expand from stable nation-states to less stable states and even non-state networks." The document also echoes Adm. Michael Mullen, chairman of the Joint Chiefs of Staff, and other U.S. military leaders who say America is likely in "an era of persistent conflict." During the next 25 years, it says, "There will continue to be those who will hijack and exploit Islam and other beliefs for their own extremist ends. There will continue to be opponents who will try to disrupt the political stability and deny the free access to the global commons that is crucial to the world's economy." The study gives substantial ink to what could happen in places of strategic import to Washington, like Russia, China, Africa, Europe, Asia and the Indian Ocean region. Extremists and Militias But it calls the Middle East and Central Asia "the center of instability" where U.S. troops will be engaged for some time against radical Islamic groups. The study does not rule out a fight against a peer nation's military, but stresses preparation for irregular foes like those that complicated the Iraq war for years. Its release comes three days after Deputy Defense Secretary Gordon England signed a new Pentagon directive that elevates irregular warfare to equal footing - for budgeting and planning - as traditional warfare. The directive defines irregular warfare as encompassing counterterrorism operations, guerrilla warfare, foreign internal defense, counterinsurgency and stability operations. Leaders must avoid "the failure to recognize and fully confront the irregular fight that we are in. The requirement to prepare to meet a wide range of threats is going to prove particularly difficult for American forces in the period between now and the 2030s," the study said. "The difficulties involved in training to meet regular and nuclear threats must not push preparations to fight irregular war into the background, as occurred in the decades after the Vietnam War." Irregular wars are likely to be carried out by terrorist groups, "modern-day militias," and other non-state actors, the study said. It noted the 2006 tussle between Israel and Hezbollah, a militia that "combines state-like technological and war-fighting capabilities with a 'sub-state' political and social structure inside the formal state of Lebanon." One retired Army colonel called the study "the latest in a serious of glaring examples of massive overreaction to a truly modest threat" - Islamist terrorism. "It is causing the United States to essentially undermine itself without terrorists or anyone else for that matter having to do much more than exploit the weaknesses in American military power the overreaction creates," said Douglas Macgregor, who writes about Defense Department reform at the Washington-based Center for Defense Information. "Unfortunately, the document echoes the neocons, who insist the United States will face the greatest threats from insurgents and extremist groups operating in weak or failing states in the Middle East and Africa." Macgregor called that "delusional thinking," adding that he hopes "Georgia's quick and decisive defeat at the hands of Russian combat forces earlier this year [is] a very stark reminder why terrorism and fighting a war against it using large numbers of military forces should never have been made an organizing principle of U.S. defense policy." Failing States The study also warns about weak and failing states, including Mexico and Pakistan. "Some forms of collapse in Pakistan would carry with it the likelihood of a sustained violent and bloody civil and sectarian war, an even bigger haven for violent extremists, and the question of what would happen to its nuclear weapons," said the study. "That 'perfect storm' of uncertainty alone might require the engagement of U.S. and coalition forces into a situation of immense complexity and danger with no guarantee they could gain control of the weapons and with the real possibility that a nuclear weapon might be used." On Mexico, JFCOM warns that how the nation's politicians and courts react to a "sustained assault" by criminal gangs and drug cartels will decide whether chaos becomes the norm on America's southern border. "Any descent by Mexico into chaos would demand an American response based on the serious implications for homeland security alone," said the report.  
  
  
  
**Failed states cause great power wars**  
  
**Grygiel 9** - Associate Professor of IR @ Johns Hopkins (Jakub, “Vacuum Wars: The Coming Competition Over Failed States,” American Interest, July/August, <http://www.the-american-interest.com/article.cfm?piece=622>)  
  
Mention “failed states” in an academic seminar or a policy meeting and you will hear a laundry list of tragic problems: poverty, disease, famine, refugees flowing across borders and more. If it is a really gloomy day, you will hear that failed states are associated with terrorism, ethnic cleansing and genocide. This is the conventional wisdom that has developed over the past two decades, and rightly so given the scale of the human tragedies in Bosnia, Somalia and Rwanda, just to mention the most egregious cases of the 1990s. This prevailing view of failed states, however, though true, is also incomplete. Failed states are not only a source of domestic calamities; they are also potentially a source of great power competition that in the past has often led to confrontation, crisis and war. The failure of a state creates a vacuum that, especially in strategically important regions, draws in competitive great-power intervention. This more traditional view of state failure is less prevalent these days, for only recently has the prospect of great power competition over failed “vacuum” states returned. But, clearly, recent events in Georgia—as well as possible future scenarios in Iraq, Afghanistan and Pakistan, as well as southeastern Europe, Asia and parts of Africa—suggest that it might be a good time to adjust, really to expand, the way we think about “failed states” and the kinds of problems they can cause. The difference between the prevailing and the traditional view on state failure is not merely one of accent or nuance; it has important policy implications. Intense great power conflict over the spoils of a failed state will demand a fundamentally different set of strategies and skills from the United States. Whereas the response to the humanitarian disasters following state failure tends to consist of peacekeeping and state-building missions, large-scale military operations and swift unilateral action are the most likely strategies great powers will adopt when competing over a power vacuum. On the political level, multilateral cooperation, often within the setting of international institutions, is feasible as well as desirable in case of humanitarian disasters. But it is considerably more difficult, perhaps impossible, when a failed state becomes an arena of great power competition. The prevailing view of failed states is an obvious product of the past two decades—a period in which an entirely new generation of scholars and policymakers has entered their respective professions. A combination of events—the end of the Cold War, the collapse of the Soviet Union and the prostration of states such as Somalia, Rwanda, Haiti and Bosnia, and most importantly the terrorist attacks of September 11—created two interlocked impressions concerning the sources of state failure that are today largely accepted uncritically. The first of these is that weak states have unraveled because of the great powers’ disinterest in them, which has allowed serious domestic problems, ranging from poverty to ethnic and social strife, to degenerate into chaos and systemic governance failure.1 The basic idea here is that the Cold War had a stabilizing effect in several strategic regions where either the United States or the Soviet Union supported recently fashioned states with little domestic legitimacy and cohesion for fear that, if they did not, the rival superpower might gain advantage. Some fortunate Third World neutrals even managed a kind of foreign aid arbitrage, attracting help from both sides. When support from the superpowers ended, many of these states, such as Somalia and Yugoslavia, were torn apart by internal factionalism. The state lacked the money to bribe compliance or to generate a larger economic pie, degenerating rapidly into corruption and violence. The key conclusion: The most egregious and tragic examples of failed states in the 1990s occurred because of great power neglect rather than meddling. The related second impression that post-Cold War events have created is that the main threat posed by failed states starts from within them and subsequently spills over to others. Failed states export threats ranging from crime to drugs to refugees to, most dramatically, global terrorism.2 The lawlessness and violence of such states often spills across borders in the form of waves of refugees, the creation of asylums for criminals and more besides. As the number and severity of failed state cases rose, Western powers reacted much of the time by hoping that the problems arising from the failure of states, even those geographically close to the United States or Europe like Haiti and Bosnia, would remain essentially limited so that internal chaos could simply be waited out. Interventions such as in Somalia, Bosnia or Haiti were driven by a Western public shocked by vivid images of suffering and slaughter rather than by a sense that these collapsed states directly threatened U.S. national security. The 9/11 terrorist attacks against the United States changed the perception that failed states could be safely ignored. The Hobbesian world of a failed state could be distant, but it was also a breeding ground for terrorist networks that could train their foot soldiers, establish logistical bases and plan attacks against distant countries. Failed states suddenly were not only humanitarian disasters but security threats. As Francis Fukuyama observed in 2004, “radical Islamist terrorism combined with the availability of weapons of mass destruction added a major security dimension to the burden of problems created by weak governance.”3 However, 9/11 did not alter the conviction that the main threat posed by failed states stems from endogenous problems and not from a great power competition to fill the vacuum created by their demise. At least in the immediate aftermath of the terrorist attacks, there was a naive feeling that the Islamist threat festering in failed or weak states such as Afghanistan was a menace to the international community writ large, and certainly to great powers like Russia and China, as well as the United States. It was therefore assumed that the great powers would cooperate to combat terrorism and not compete with each other for control over failing or failed states. As Stephen David pointed out in these pages, “Instead of living in a world of international anarchy and domestic order, we have international order and domestic anarchy.”4 The solution stemming from such a view of failed states falls under the broad category of “nation-building.” If the main challenge of failed states is internally generated and caused by a collapse of domestic order, then the solution must be to rebuild state institutions and restore authority and order, preferably under some sort of multilateral arrangement that would enhance the legitimacy of what is necessarily an intrusive endeavor. Great powers are expected to cooperate, not compete, to fix failed states. U.S. foreign policy continues to reflect this prevailing view. Then-Director of the Policy Planning staff, Stephen Krasner, and Carlos Pascual, then-Coordinator for Reconstruction and Stabilization at the State Department, wrote in 2005 that, “when chaos prevails, terrorism, narcotics trade, weapons proliferation, and other forms of organized crime can flourish.” Moreover, “modern conflicts are far more likely to be internal, civil matters than to be clashes between opposing countries.”5 The prevailing view of failed states is, to repeat, not wrong, just incomplete—for it ignores the competitive nature of great power interactions. The traditional understanding of power vacuums is still very relevant. Sudan, Central Asia, Indonesia, parts of Latin America and many other areas are characterized by weak and often collapsing states that are increasingly arenas for great power competition. The interest of these great powers is not to rebuild the state or to engage in “nation-building” for humanitarian purposes but to establish a foothold in the region, to obtain favorable economic deals, especially in the energy sector, and to weaken the presence of other great powers. Let’s look at just three possible future scenarios. In the first, imagine that parts of Indonesia become increasingly difficult to govern and are wracked by riots. Chinese minorities are attacked, while pirates prowl sealanes in ever greater numbers. Bejing, pressured by domestic opinion to help the Chinese diaspora, as well as by fears that its seaborne commerce will be interrupted, intervenes in the region. China’s action is then perceived as a threat by Japan, which projects its own power into the region. The United States, India and others then intervene to protect their interests, as well. In the second scenario, imagine that Uzbekistan collapses after years of chronic mismanagement and continued Islamist agitation. Uzbekistan’s natural resources and its strategic value as a route to the Caspian or Middle East are suddenly up for grabs, and Russia and China begin to compete for control over it, possibly followed by other states like Iran and Turkey. In a third scenario, imagine that the repressive government of Sudan loses the ability to maintain control over the state, and that chaos spreads from Darfur outward to Chad and other neighbors. Powers distant and nearby decide to extend their control over the threatened oil fields. China, though still at least a decade away from having serious power projection capabilities, already has men on the ground in Sudan protecting some of the fields and uses them to control the country’s natural resources. These scenarios are not at all outlandish, as recent events have shown. Kosovo, which formally declared independence on February 17, 2008, continues to strain relationships between the United States and Europe, on the one hand, and Serbia and Russia, on the other. The resulting tension may degenerate into violence as Serbian nationalists and perhaps even the Serbian army intervene in Kosovo. It is conceivable then that Russia would support Belgrade, leading to a serious confrontation with the European Union and the United States. A similar conflict, pitting Russia against NATO or the United States alone, or some other alliance of European states, could develop in several post-Soviet regions, from Georgia to the Baltics. Last summer’s war in Georgia, for instance, showed incipient signs of a great power confrontation between Russia and the United States over the fate of a weak state, further destabilized by a rash local leadership and aggressive meddling by Moscow. The future of Ukraine may follow a parallel pattern: Russian citizens (or, to be precise, ethnic Russians who are given passports by Moscow) may claim to be harassed by Ukrainian authorities, who are weak and divided. A refugee problem could then arise, giving Moscow a ready justification to intervene militarily. The question would then be whether NATO, or the United States, or some alliance of Poland and other states would feel the need and have the ability to prevent Ukraine from falling under Russian control. Another example could arise in Iraq. If the United States fails to stabilize the situation and withdraws, or even merely scales down its military presence too quickly, one outcome could be the collapse of the central government in Baghdad. The resulting vacuum would be filled by militias and other groups, who would engage in violent conflict for oil, political control and sectarian revenge. This tragic situation would be compounded if Iran and Saudi Arabia, the two regional powers with the most direct interests in the outcome, entered the fray more directly than they have so far. In sum, there are many more plausible scenarios in which a failed state could become a playground of both regional and great power rivalry, which is why we urgently need to dust off the traditional view of failed states and consider its main features as well as its array of consequences. The traditional view starts from a widely shared assumption that, as nature abhors vacuums, so does the international system. As Richard Nixon once said to Mao Zedong, “In international relations there are no good choices. One thing is sure—we can leave no vacuums, because they can be filled.”6 The power vacuums created by failed states attract the interests of great powers because they are an easy way to expand their spheres of influence while weakening their opponents or forestalling their intervention. A state that decides not to fill a power vacuum is effectively inviting other states to do so, thereby potentially decreasing its own relative power. This simple, inescapable logic is based on the view that international relations are essentially a zero-sum game: My gain is your loss. A failed state creates a dramatic opportunity to gain something, whether natural resources, territory or a strategically pivotal location. The power that controls it first necessarily increases its own standing relative to other states. As Walter Lippmann wrote in 1915, the anarchy of the world is due to the backwardness of weak states; . . . the modern nations have lived in armed peace and collapsed into hideous warfare because in Asia, Africa, the Balkans, Central and South America there are rich territories in which weakness invites exploitation, in which inefficiency and corruption invite imperial expansion, in which the prizes are so great that the competition for them is to the knife.7 The threat posed by failed states, therefore, need not emanate mainly from within. After all, by definition a failed state is no longer an actor capable of conducting a foreign policy. It is a politically inert geographic area whose fate is dependent on the actions of others. The main menace to international security stems from competition between these “others.” As Arnold Wolfers put it in 1951, because of the competitive nature of international relations, “expansion would be sure to take place wherever a power vacuum existed.”8 The challenge is that the incentive to extend control over a vacuum or a failed state is similar for many states. In fact, even if one state has a stronger desire to control a power vacuum because of its geographic proximity, natural resources or strategic location, this very interest spurs other states to seek command over the same territory simply because doing so weakens that state. The ability to deprive a state of something that will give it a substantial advantage is itself a source of power. Hence a failed state suddenly becomes a strategic prize, because it either adds to one’s own power or subtracts from another’s. The prevailing and traditional views of failed states reflect two separate realities. Therefore, we should not restrict ourselves to one view or the other when studying our options. The difference is not just academic; it has very practical consequences. First and foremost, if we take the traditional view, failed states may pose an even greater danger to international security than policymakers and academics currently predict. Humanitarian disasters are certainly tragedies that deserve serious attention; yet they do not pose the worst threats to U.S. security or world stability. That honor still belongs to the possibility of a great power confrontation. While the past decade or so has allowed us to ignore great power rivalries as the main feature of international relations, there is no guarantee that this happy circumstance will continue long into the future.  
  
  
  
**Asymmetric warfare has emerged – rapid military engagement is critical to develop leadership and solve conflict**  
  
**Barno 11** David, Lt. Gen (Ret.), is a senior adviser and senior fellow at the Center for a New American Security, former overall U.S. commander in Afghanistan (World Politics Review, “Military Power in a Disorderly World”, March 22, 2011,[http://www.worldpoliticsreview.com/articles/8259/military-power-in-a-disorderly-world](http://webcache.googleusercontent.com/search?q=cache:http://www.worldpoliticsreview.com/articles/8259/military-power-in-a-disorderly-world))  
  
The opening acts of the 21st century have fundamentally challenged long-held notions of military power. The past decade has unveiled not only the disruptive power of terrorist groups with global reach, but also the ability of low-budget insurgent groups to directly confront the best military forces of the West -- with surprising success. Moreover, recent revolutionary events across the Arab world have demonstrated the limits of military power when facing mass popular uprisings. Disorder, chaos and violent extremism seem on course to replace state-on-state violence as the most common forms of conflict in the new century. Given this new security environment, the U.S. military must begin to play a larger role in conflict prevention in order to fully realize its value, commensurate with its cost, in this new disorderly world. The attacks of Sept. 11, 2001 -- launched not with tanks, warplanes or intercontinental missiles, but with commercial airliners -- were the most deadly assaults on U.S. soil since the American Civil War. Unconventional wars in Afghanistan and Iraq have also rattled the conventions of military thought, as insurgents equipped with inexpensive weaponry have inflicted prolonged attrition on U.S. forces. The U.S. military has spent billions of dollars defending against these new, low-cost threats, but the West and its military thinkers are still grappling with the full security implications of these dramatic upheavals in traditional military power balances. The era of asymmetric warfare has arrived with a vengeance. Recent revolutionary events in the Arab world -- starting in Tunisia and rapidly spreading to Egypt, Libya, Yemen and Bahrain -- have further highlighted today's shifting balance of power. While the outcome of these upheavals is still unclear, they reflect a new sort of asymmetrical power wielded by popular movements and expressed through mass street demonstrations. These spontaneous movements -- organized and enabled by modern technologies such as cellphones, Twitter and Facebook -- have directly challenged the "hard power" of state militaries, albeit with mixed results to date. Yet at the same time, the West's hard-power response to the Libyan regime's harsh backlash against its people has further demonstrated that conventional military power remains a powerful tool -- in this case employed to enforce the will of the broader international community as expressed by U.N. resolutions. Another version of this asymmetric power shift has played out against Western forces in the wars for Afghanistan and Iraq. Despite successful high-tech U.S. military campaigns at the outset of each conflict, the enemy quickly adapted with inexpensive forms of asymmetry, in the shape of attacks by car bombs, suicide vests and IEDs, and with clashes often captured and disseminated via cellphone videos. The cost to the insurgents of these unconventional weapons is minimal, but the U.S. defensive response to protect its army is staggering. The multibillion-dollar fleet of heavily protected MRAP vehicles designed to protect U.S. soldiers against IEDs is just one example. This reflects in part an insurgent strategy of "cost imposition," whereby the enemy attempts to drive the costs of the war in lives and fortune to a point where it no longer makes strategic sense for the U.S. to pursue its aims. The evolving nature of global threats echoes the tactical asymmetry found on the ground in Afghanistan and Iraq. Where the 19th and 20th centuries were dominated by a Westphalian order of nation-states, nonstate actors have moved to center stage in today's global order. This is a "flat world" of multinational companies, interwoven crime syndicates, global special interest groups, Internet-fueled extremist ideologies and terrorist networks. In many ways, the comfortable order and rule of law represented by the nation-states seated at the U.N. is fading, overtaken by a complex mix of other competitors for power. Of even greater concern, the destructive power accessible to even tiny groups is skyrocketing, rendering both deterrence and containment of fringe actors exceedingly difficult. The role of U.S. military forces in this new era of global disorder requires a careful assessment. The U.S. Department of Defense has traditionally analyzed foreign military capabilities and assigned priorities based upon their potential threat to U.S. interests. In today's world, a threat-calculus based upon conventional military capabilities makes less sense, as does the impetus to simply build a U.S. military to confront these nation-state threats. In a disorderly world, terrorist groups, transnational criminals or state failure may generate a serious threat to U.S. vital interests as readily as a cross-border invasion. In this environment, a U.S. military too deeply invested in conventional military capabilities may be poorly positioned for other strategic challenges facing the United States. But if it seems obvious that the next U.S. military must be able to more than just fight or deter other armies, navies and air forces, exactly what else it should be doing is less clear. In many ways, the current "supply of security capital" by the United States is woefully out of balance with the "demand signal" driven by threats in this new disorderly world. A U.S. Foreign Service with fewer than 8,000 diplomats to cover the globe contrasts with a U.S. Marine Corps of 200,000 leathernecks. A foreign aid and development budget of less than $60 billion competes with a base defense budget that exceeds $550 billion a year. But the bureaucratic realities of Washington and the U.S. Congress give scant hope that any major realignments between U.S. government departments will occur. This is a fundamental dose of reality: Even in an era of fiscal austerity, Defense will continue to have a disproportionate share of U.S. government discretionary spending. This recognition should drive new thinking on maximizing those assets. One outcome should be clear: The U.S. military must begin to play a larger role in global conflict prevention in this new disorderly world. Military forces based largely in the United States waiting for a war to break out are simply an unaffordable resource drain in a financial environment where the annual interest payments on the nation's debt will exceed its $550 billion defense budget by the end of this decade. The U.S. military is no longer a sound investment if it only defends and deters -- it must now also actively help prevent conflicts and stabilize key regions of the world where instability can threaten vital U.S. interests. All three missions -- defend, deter, prevent -- are important, and the next U.S. military should be organized, trained and equipped to actively engage in each. Making this change will require a strategic reset in both U.S. military and diplomatic thinking. Fortunately, the nation-building and counterinsurgency experiences of the past 10 years have prepared the military well for this adjustment. Building on this experience makes sense. This new task of "selective stabilization" can better align the military with U.S. diplomatic missions abroad in at-risk areas and leverage a broader array of U.S. power. Yet this logic will be strongly opposed by those worried about a further "militarization of foreign policy" -- while failing to recognize that the diplomat's traditional remit of "represent, report and negotiate" is shrinking in today's disorderly world. Fewer regions will demand these traditional diplomatic talents alone, and many more will require new skills in integrating U.S. hard and soft power in potential conflict zones. Demographic and natural resource trends signal that violent upheaval and the threat of instability will menace ever greater parts of the world, especially in the Middle East, Africa and Central and South Asia. U.S. vital interests in these regions are less threatened by interstate war than by the risks of internal extremism, instability and terrorism. Stabilizing the most important of these regions is an essential new task, and one that will require the combined talents of State and Defense. None of this suggests the deployment of Army divisions to the Maghreb or Marine landings on the Nigerian coast -- quite the opposite. Nor does it suggest the U.S. military abandon war fighting to take on a global nation-building role in lieu of its traditional combat responsibilities. But the nation's large investment in the military argues for a greater return on investment in response to an increasingly disorderly world. That said, the lead for any expanded engagement by U.S. military forces overseas must remain the U.S. ambassador as chief of mission in any country with a U.S. presence. But in zones of potential conflict, the military can provide the ambassador with planners and strategists, logisticians and analysts, technicians and foreign area officers -- and, often, defense dollars. The U.S. military can also deliver core capabilities to help train and professionalize less-capable militaries in these regions around the world, modeling U.S. values and norms that are the global standard of military excellence. The restraint and responsibility exercised by the U.S.-trained Egyptian military in responding to the popular protests and managing the ongoing transition of power in Egypt is the best recent example of the power of this influence. The Era of the Disorderly World has already dawned. The importance of conventional militaries in this world has changed, but it has not gone away. Hard military power remains potent, and U.S. military power remains the dominant hard power force in the world -- and will remain so even in an era of U.S. fiscal austerity. But in order to prepare to confront the most dangerous conventional and unconventional threats to the nation, more is demanded. The U.S. military must add to its strategic portfolio a new mission: conflict prevention. Too many scarce resources are vested in the military to simply preserve it for the next war. These costly investments should be leveraged to make that war much less likely -- particularly in the highest-priority regions for U.S. vital interests around the world. Confronting this dangerous and disorderly world will require all of the diverse sources of talent that the United States can muster.  
  
  
  
**Hegemony is impossible but American military power is key to prevent global chaos and extinction – there’s no alternative**  
  
Brzezinski 12 [Zbigniew Brzezinski, CSIS counselor and trustee and cochair of the CSIS Advisory Board, Robert E. Osgood Professor of American Foreign Policy at the School of Advanced International Studies @ Johns Hopkins University, cochair of the American Committee for Peace in the Caucasus and a member of the International Advisory Board of the Atlantic Council, recipient of numerous honors and awards. “After America”. Foreign Policy, Jan/Feb 2012. <http://www.foreignpolicy.com/articles/2012/01/03/after_america?page=0,1>]  
  
Not so long ago, a high-ranking Chinese official, who obviously had concluded that America's decline and China's rise were both inevitable, noted in a burst of candor to a senior U.S. official: "But, please, let America not decline too quickly." Although the inevitability of the Chinese leader's expectation is still far from certain, he was right to be cautious when looking forward to America's demise. For if America falters, the world is unlikely to be dominated by a single preeminent successor -- not even China. International uncertainty, increased tension among global competitors, and even outright chaos would be far more likely outcomes. While a sudden, massive crisis of the American system -- for instance, another financial crisis -- would produce a fast-moving chain reaction leading to global political and economic disorder, a steady drift by America into increasingly pervasive decay or endlessly widening warfare with Islam would be unlikely to produce, even by 2025, an effective global successor. No single power will be ready by then to exercise the role that the world, upon the fall of the Soviet Union in 1991, expected the United States to play: the leader of a new, globally cooperative world order. More probable would be a protracted phase of rather inconclusive realignments of both global and regional power, with no grand winners and many more losers, in a setting of international uncertainty and even of potentially fatal risks to global well-being. Rather than a world where dreams of democracy flourish, a Hobbesian world of enhanced national security based on varying fusions of authoritarianism, nationalism, and religion could ensue. The leaders of the world's second-rank powers, among them India, Japan, Russia, and some European countries, are already assessing the potential impact of U.S. decline on their respective national interests. The Japanese, fearful of an assertive China dominating the Asian mainland, may be thinking of closer links with Europe. Leaders in India and Japan may be considering closer political and even military cooperation in case America falters and China rises. Russia, while perhaps engaging in wishful thinking (even schadenfreude) about America's uncertain prospects, will almost certainly have its eye on the independent states of the former Soviet Union. Europe, not yet cohesive, would likely be pulled in several directions: Germany and Italy toward Russia because of commercial interests, France and insecure Central Europe in favor of a politically tighter European Union, and Britain toward manipulating a balance within the EU while preserving its special relationship with a declining United States. Others may move more rapidly to carve out their own regional spheres: Turkey in the area of the old Ottoman Empire, Brazil in the Southern Hemisphere, and so forth. None of these countries, however, will have the requisite combination of economic, financial, technological, and military power even to consider inheriting America's leading role. China, invariably mentioned as America's prospective successor, has an impressive imperial lineage and a strategic tradition of carefully calibrated patience, both of which have been critical to its overwhelmingly successful, several-thousand-year-long history. China thus prudently accepts the existing international system, even if it does not view the prevailing hierarchy as permanent. It recognizes that success depends not on the system's dramatic collapse but on its evolution toward a gradual redistribution of power. Moreover, the basic reality is that China is not yet ready to assume in full America's role in the world. Beijing's leaders themselves have repeatedly emphasized that on every important measure of development, wealth, and power, China will still be a modernizing and developing state several decades from now, significantly behind not only the United States but also Europe and Japan in the major per capita indices of modernity and national power. Accordingly, Chinese leaders have been restrained in laying any overt claims to global leadership. At some stage, however, a more assertive Chinese nationalism could arise and damage China's international interests. A swaggering, nationalistic Beijing would unintentionally mobilize a powerful regional coalition against itself. None of China's key neighbors -- India, Japan, and Russia -- is ready to acknowledge China's entitlement to America's place on the global totem pole. They might even seek support from a waning America to offset an overly assertive China. The resulting regional scramble could become intense, especially given the similar nationalistic tendencies among China's neighbors. A phase of acute international tension in Asia could ensue. Asia of the 21st century could then begin to resemble Europe of the 20th century -- violent and bloodthirsty. At the same time, the security of a number of weaker states located geographically next to major regional powers also depends on the international status quo reinforced by America's global preeminence -- and would be made significantly more vulnerable in proportion to America's decline. The states in that exposed position -- including Georgia, Taiwan, South Korea, Belarus, Ukraine, Afghanistan, Pakistan, Israel, and the greater Middle East -- are today's geopolitical equivalents of nature's most endangered species. Their fates are closely tied to the nature of the international environment left behind by a waning America, be it ordered and restrained or, much more likely, self-serving and expansionist. A faltering United States could also find its strategic partnership with Mexico in jeopardy. America's economic resilience and political stability have so far mitigated many of the challenges posed by such sensitive neighborhood issues as economic dependence, immigration, and the narcotics trade. A decline in American power, however, would likely undermine the health and good judgment of the U.S. economic and political systems. A waning United States would likely be more nationalistic, more defensive about its national identity, more paranoid about its homeland security, and less willing to sacrifice resources for the sake of others' development. The worsening of relations between a declining America and an internally troubled Mexico could even give rise to a particularly ominous phenomenon: the emergence, as a major issue in nationalistically aroused Mexican politics, of territorial claims justified by history and ignited by cross-border incidents. Another consequence of American decline could be a corrosion of the generally cooperative management of the global commons -- shared interests such as sea lanes, space, cyberspace, and the environment, whose protection is imperative to the long-term growth of the global economy and the continuation of basic geopolitical stability. In almost every case, the potential absence of a constructive and influential U.S. role would fatally undermine the essential communality of the global commons because the superiority and ubiquity of American power creates order where there would normally be conflict. None of this will necessarily come to pass. Nor is the concern that America's decline would generate global insecurity, endanger some vulnerable states, and produce a more troubled North American neighborhood an argument for U.S. global supremacy. In fact, the strategic complexities of the world in the 21st century make such supremacy unattainable. But those dreaming today of America's collapse would probably come to regret it. And as the world after America would be increasingly complicated and chaotic, it is imperative that the United States pursue a new, timely strategic vision for its foreign policy -- or start bracing itself for a dangerous slide into global turmoil.  
  
  
  
  
  
  
  
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**Contention 3 is Small Unit Space Transport and Insertion, or SUSTAIN**

**Tech feasible now- unified investment key to solvenc**y  
  
Williams, ‘7 – Shon P., Major, USAF [“Wild Ride: Launching Troops Through Space for Rapid Precision Global Intervention”. April. Blue Horizons Paper, Center for Strategy and Technology, Air War College. <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA497529&Location=U2&doc=GetTRDoc.pdf>]  
  
Like most advanced capabilities, space transportation requires a host of technologies, people, and processes to work together as a system of systems. Good people and processes are extremely important; without them, any new capability is sure to fail. While this section addresses people and process issues, it does not attempt to explore people and processes in depth. This section will instead focus primarily on technologies, principally those involved in the launch vehicle itself. Furthermore, with respect to the specific technologies presented here, it is the synergistic relationship between the various technologies, not necessarily the individual 11 technologies themselves, that will provide the breakthroughs necessary to open space up to a greater expanse of operations. Many different materiel design concepts could provide the capabilities necessary to deliver the desired SUSTAIN capabilities. Trade studies must occur to optimize the system designs. The most likely answer to the problem will be a family of operationally responsive spacelift vehicles, some suborbital, some orbit-capable, with a range of lift capacities. The most efficient family will not only meet the needs of SUSTAIN but will also satisfy the range of ORS requirements and ideally the requirements of civil and commercial space at the same time. While these decisions require much more analysis by a larger team of experts, the following technologies are common to virtually any of the design options: propulsion, thermal protection, structures, materials, avionics, power systems, and operability. Sources of Technology and Related Concepts Several concepts within military, commercial, and civil space have addressed or are addressing certain aspects of the problem of making responsive space transportation a reality. The following paragraphs describe some of the key projects and their respective potential contributions to this mission and to the technology areas mentioned in the previous section, especially in the areas of propulsion and operability. These explanations will be intentionally brief. Readers should check the provided references for additional information on each project. High Ops Tempo – Energetic Access to Globe & Launch Experiment (HOT EAGLE) HOT EAGLE was Air Force Research Laboratory’s (AFRL) paper study completed in 2006 for the Defense Advanced Research Projects Agency (DARPA) to examine the feasibility of SUSTAIN. Although DARPA did not decide to fund HOT EAGLE after this seedling effort, much of the work continued in AFRL’s FAST project (see below). FAST has a broader scope; it 12 is not focused on SUSTAIN but on the bigger picture of responsive space access. Nonetheless, the approach and technologies are similar. 29 Fully-Reusable Access to Space Technology (FAST) FAST is a joint project of AFRL and Air Force Space Command with the intent of demonstrating technologies to enable existing and new Air Force operational space missions such as spacelift; Intelligence, Surveillance, and Reconnaissance (ISR); space control; and global mobility. Key goals of this program include reducing space launch costs and increasing reliability by an order of magnitude, “aircraft-like operability” (15-minute call-up time, fourhour turnaround, four or more times higher flight rates than existing launch systems, operations and maintenance crew size of six or less), and scalability to support a full range of payload requirements. Although FAST is primarily concerned with launch to orbit, its technologies are intrinsic to point-to-point global transportation as well. Planned experiments include the following: airframe and structural health management experiment, propulsion experiment, subsystem experiment, leading edge demo, and flight operations experiment. The FAST program approach is to demonstrate these fully-reusable access-to-space technologies in a series of small and affordable ground and flight experiments leading up to an integrated experimental X-Vehicle in 2010 to 2015 and prototype Y-Vehicle in 2015 to 2020. As of Fall 2006, the AFRL program office had the resources and personnel in place to execute the ground demos. 30 Affordable, REsponsive Spacelift (ARES) ARES is an Air Force Space Command and AFRL program intended to “create a transformational spacelift capability, embodying affordability, responsiveness, simplicity of operations, and reliability for a wide range of payload classes.” 31 ARES is actually a family of vehicles to provide affordable, responsive spacelift for all of the DoD’s satellites. The concept is 13 a hybrid launch vehicle with expendable upper stages and a fly-back booster, 24- to 48-hour turnaround time, and costs expected to be lower than current expendable or conceptual fullyreusables. Flight demonstrations are scheduled to begin in 2010. The ARES budget is approximately $4M per year. Falcon Family of Launch Vehicles The Falcon family is “designed to provide breakthrough advances in reliability, cost, flight environment and time to launch” for transporting satellites to low earth orbit. 32 Reliability is the principal driver. Falcon 1 is a two stage, rocket-powered launch vehicle. It is designed for cost efficient and reliable transport of small (1500 lb) satellites to low Earth orbit. Two test launches have occurred in 2006 and 2007; both had failures prior to reaching orbit but gathered valuable test data. Falcon 9 is a heavy lift vehicle. The developer, SpaceX, won a contract from NASA to demonstrate three flights of Falcon 9 beginning in 2009. 33 X-41 Common Aero Vehicle (CAV) The Air Force CAV is a maneuvering reentry vehicle capable of carrying a variety of payloads (primarily munitions) down from orbit or suborbital reentry and either impacting a target or dispensing munitions at a desired location. CAVs are expected to have 2000-3000 nautical miles of cross-range for maneuvering. “CAV needs to be deployed at very high velocities to be effective, and Mach numbers less than 20 for suborbital deliveries produce relatively short ranges and cross-ranges.” This limitation would have implications for a suborbital manned vehicle if CAV-like technologies were used. DARPA’s FALCON (Force Application and Launch from CONUS) program (not to be confused with the Falcon family of launch vehicles) is scheduled to provide a reasonable penetrator capability from a traditional launch vehicle in the 2008 timeframe. FALCON has no funding for any on-orbit CAV effort. 3414 X-43 Hyper-X In 2004 NASA made aviation history with two flights of a scramjet-powered, hypersonic airplane (or greater than five times the speed of sound). This was the first hypersonic flight of a vehicle with air-breathing engines. Compared to rocket-powered vehicles, scramjets (supersonic combustion ramjets) promise more aircraft-like operability for increased affordability, flexibility, and safety for flights within the atmosphere and into orbit. Unlike rockets, because scramjets do not have to carry their own oxidizer, the vehicles can be smaller and lighter - or carry more payload than an equivalent sized rocket. Ultimate applications include hypersonic missiles, hypersonic airplanes, the first stage of multistage reusable launch vehicles, and single-stage-toorbit reusable launch vehicles. The eight-year, $30M per year program was a high-risk, highpayoff research effort. 35 SpaceShipOne SpaceShipOne by private company Scaled Composites won the Ansari X-Prize for the first non-government manned space flight above 100 km. The goal was to demonstrate that nongovernment space flights can be feasible and low cost in an effort to spawn the space tourism industry. New technologies included the launch aircraft, the three-person spaceship, hybrid rocket propulsion technologies, and a variety of new systems. SpaceShipOne is air-launched from the mother aircraft, separates and climbs to suborbital altitude, then reenters in a high drag configuration for stable flight. It finally lands horizontally on a runway. Other commercial ventures were competing with Scaled Composites prior to their winning the X-Prize. Some of these other companies still have their own vehicle systems attempting to achieve the same goals. 3615 As mentioned before, several other projects are also making steady progress in technologies related to responsive spacelift. NASA, DARPA, the Navy, the Air Force, and their contractors are the chief contributors along with some private companies. The main problem with all of these projects is not with the technology but with the fact that they are more or less separate projects that are only loosely linked. To really drive a revolution in space access in a resource-constrained environment, the nation needs to coordinate its efforts, capitalize on areas of expertise, and share cost  
  
  
  
**Orbital capsules make SUSTAIN cheap and feasible**  
  
  
  
Jurist, Hook, and Livingston 9 [John M. Jurist, Professor of Space Studies in the  
  
Odegard School of Aerospace Sciences at [[#|the University of]] North Dakota; David C. Hook, president of Planehook Aviation Services; David Livingston, adjunct professor in the Odegard School. “Small Unit Space Transport And Insertion (SUSTAIN): How to Do It and Use It as a Driver for Low-Cost Responsive Orbital Launch”. 7th Responsive Space Conference, American Institute of Aeronautics and Astronautics.<http://responsivespace.com/Papers/RS7/SESSIONS/SESSION%20I/1002_JURIST/1002P.pdf>]  
  
  
  
For SUSTAIN, a man-carrying capsule decelerates aerodynamically during re-entry, decelerates further with a parachute or parasail, and cushions the final impact with small solid-fuelled rockets. Extraction of individual team members could be accomplished by using Fulton Recovery Systems on them individually or by lifting the capsule containing the team to several thousand feet AGL with the capsule abort rocket system and then snagging it in midair with a cargo aircraft. The basic technology for this approach has been demonstrated over the past ½ century. Most of the technology elements for the Scorpius Sprite and Exodus have been demonstrated and even flown. Therefore, SUSTAIN could be implemented rapidly and inexpensively. The major remaining developmental element is the capsule. Major impediments to implementing SUSTAIN fall within the political, economic, and policy arenas. A side benefit of combining our approach to SUSTAIN with the USAF Responsive Space concept is an end result of a simple, cheap, responsive space launch vehicle series with remaining development costs spread between several programs.  
  
  
  
  
  
**SUSTAIN works logistically**  
  
Damphousse 8 – Marine, lieutenant colonel, MA in aeronautical engineering, former Space Control and Special Technical Operations action officer , Chief of Advanced Concepts at the NSSO. [Concept of Operations for the Small Unit Space Transport and Insertion (SUSTAIN) Capability. Includes input from the NSSO, air force, special forces, and marine corps. <http://www.docstoc.com/docs/20263477/Concept-of-Operations-for-the-Small-Unit-Space-Transport>]  
  
2 4 Support and Sustainment Concepts (DOTMLPF)  
  
Doctrine. The SUSTAIN capability is necessarily designed around what is known today of basic Warfighter organization at the SOF team. The small unit as defined in SUSTAIN is 12-14 personnel for specific reasons. It is the size of the team element that is basic to USSOCOM. 12-14 combat personnel is approximately the traditional design parameter for tactical assault support platforms, whether they were surface ground, water, transport helicopter, or tilt-rotor aircraft. This unit size has even been employed as the stick parameter used for combat gliders, a platform that was conceptually a functional forerunner of` SUSTAIN. The assumption is that the enduring utility of the squad-team sized unit as the smallest viable combat element will continue to be its capability to conduct limited independent operations, especially within the Special Operations Command (SOCOM) construct. Furthermore, the technology-enabled warfighting capacity of` small units will increase. Organization. A SUSTAIN Family of Assault Support Capabilities (SUSTAIN FASC) is envisioned as a revolutionary follow-on to evolutionary air, land, and sea assault support, even if` only as a complimentary capability. Once SUSTAIN has matured in the SOCOM operating environment, the physical SUSTAIN capability could be fielded and manned in quantities similar to Amphibious Assault Vehicle (AAV) Battalions or Assault Support Squadrons. Logistics, Command and Control (C2) and fire support capabilities variants would be fielded and organized in appropriately complementary numbers. Principles of attachment, cross-attachment, direct support, and general support would apply as they do for other assault support and tire support platforms. SUSTAIN Composite Squadrons are conceivable. Under a Space Force or Space Service the SUSTAIN capability, matured in operations by USSOCOM, could expand to have broad general utility.  
  
  
  
**Launch systems have already been developed – minimal further investment required**  
  
Jurist, Hook, and Livingston 9 [John M. Jurist, Professor of Space Studies in the Odegard School of Aerospace Sciences at the University of North Dakota; David C. Hook, president of Planehook Aviation Services; David Livingston, adjunct professor in the Odegard School. “Small Unit Space Transport And Insertion (SUSTAIN): How to Do It and Use It as a Driver for Low-Cost Responsive Orbital Launch”. 7th Responsive Space Conference, American Institute of Aeronautics and Astronautics.<http://responsivespace.com/Papers/RS7/SESSIONS/SESSION%20I/1002_JURIST/1002P.pdf>]  
  
This quantity of development funding is almost certainly beyond current US political and economic feasibility. An alternative approach is to exploit that which already exists and which was developed under other funding arrangements. For example, as part of the Responsive Space initiatives, Microcosm developed a conceptual low cost rapidly deployed launch system (Scorpius). Much of the preliminary development cost for this series of vehicles has been spent and hardware has been developed. THE MICROCOSM APPROACH The analysis given above suggests a concept close to the Scorpius launch system studied, partially developed, and demonstrated by Microcosm 5 . The Sprite vehicle payload of 1,060 pounds to LEO and the Exodus vehicle payload of 19,700 pounds to LEO are sufficient to meet the launch requirements of the USAF UAV and the SUSTAIN capsule, respectively, with comfortable margins. The Scorpius system uses a series of seven essentially identical modules – 6 for the first stage in a hexagonal array and one for the second stage nested in the center of the first stage array. All are pressure-fed with ablatively-cooled motors, thus minimizing the propulsion system parts count. Each individual module is extremely simple and easily storable with minimal difficulty. By running the 6 first stage modules in parallel with the second stage located within the hexagonal array, the overall vehicle aspect ratio is low and sensitivity to wind shear is minimal. That allows launch in hurricane level winds. The overall characteristics of the Scorpius launch vehicle family are shown in Table 6. [TABLE 6 REMOVED] Scorpius has a proprietary pressurization system that end-runs many of the disadvantages of conventional pressurization systems and provides roughly a 50 percent mass savings over stored Helium gas and associated tankage for propellant pressurization. This system uses Tridyne (Helium with small, noncombustible quantities of Hydrogen and Oxygen added) 6 . The Tridyne is run over a catalyst bed and the Hydrogen and Oxygen react to form water vapor and release heat. Some of the heat is transferred back to the stored Tridyne tank to prevent cooling by expansion as the gas is depleted. The remainder heats the Helium (and the small amount of water vapor) used for propellant pressurization to a typical temperature of 200 to 250 degrees F. The most important aspect of Scorpius is that all major systems have been tested in flight. A basic module was flown with a partial propellant load (to avoid overflying the range limits) at White Sands some years ago. The flight took place within hours of pulling up to the concrete pad with vehicle, fuel truck, etc. This demonstrated responsiveness. A scalable and inexpensive growth path has been defined. This history of Scorpius launch system development establishes a significant portion of the overall technology. The estimated remaining development cost for the complete Scorpius series up to and including the Exodus launch vehicle is less than $256 million. The unit launch costs for Exodus are estimated to be $26.7 million. Therefore, incorporation of the Scorpius Exodus into SUSTAIN would reduce estimated development costs by about 71 percent relative to the clean sheet approach. The remaining high cost item would be the capsule. Using a cheap, modular, very simple expendable launch vehicle may seem to be a backwards approach, but an expendable Scorpius can be envisioned with unit costs much less than the amortized research and development on a reusable launch vehicle unless many thousands of flights are envisioned per vehicle. SUSTAIN would be anticipated to be a low frequency use system that would not allow for amortizing the development costs incurred in a dedicated reusable launch vehicle. Extensive reusability is not easily attained from current technology, which has demonstrated partial reusability of on the order of only 100 flights. One can argue that airplane-like operations are not going to be attained with reusable space launch vehicles in the near term regardless of what one hears from the alt.space community. This has been extensively discussed in other documents for commercial suborbital sounding rockets and for orbital launchers 7,8,9.  
  
  
  
**SUSTAIN is key to fight terrorism and strengthen irregular operations**  
  
Damphousse 8 – Paul Marine, lieutenant colonel, MA in aeronautical engineering, former Space Control and Special Technical Operations action officer , Chief of Advanced Concepts at the NSSO. [Concept of Operations for the Small Unit Space Transport and Insertion (SUSTAIN) Capability. Includes input from the NSSO, air force, special forces, and marine corps. <http://www.docstoc.com/docs/20263477/Concept-of-Operations-for-the-Small-Unit-Space-Transport>]  
  
United States Special Operations Command's (USSOCOM) is the principle intended user of the SUSTAIN capability. In fact, the inspiration behind the SUSTAIN concept originally emerged from an evident capability gap, namely the limitations of terrestrial air-speeds and the need for overflight rights that have hampered SOCOM missions in the past. Specifically, the inability to rapidly insert specialized teams into Afghanistan from the U.S, within hours of the events of 9/ 11 may have caused strategic opportunities to be missed. In an effort to fill that gap, SUSTAIN is primarily intended to support of SOCOM's core missions related to rapidly intercepting unsecured Weapons of Mass Destruction (WMD), globally, as well as conducting hot pursuit of high value strategic targets during the hours of vulnerability that they are exposed. The Title l() Service-specific gaps that can be materially fulfilled with a SUSTAIN capability will overwhelmingly be executed through Service Components that contribute to the USSOCOM organization. In consideration of the SUSTAIN-relevant operational needs that have been expressed to date this pertains to Air Force and Marine Corps in dthe form of AFSOC and MARSOC. However, other Service organizations will also benefit from SUSTAIN for the purpose of transporting and inserting small specialized teams globally. Specific beneficiaries include Air Force Security Forces (AFSF), Combat Search and Rescue (CSAR), the Marine Corps Air Naval Gunfire Liaison Company (ANGLICO), and Special Operations Capable Marine Expeditionary Units (MEUSOC). It is envisioned that these non-SOCOM sourced capabilities would be employed in conjunction with or governed entirely by SOCOM as specialized attachments to SOCOM units in support of SOCOM missions. What follows is a discussion of the various SOCOM and Service core missions that SUSTAIN would enable: 4.1 U.S. Special Operations Command (USSOCOM) Core Missions USSOQOM plans, directs and executes special operations in conduct of the War on Terrorism in order to disrupt, defeat, and destroy terrorist networks that threaten the United States, its citizens and interests worldwide. USSOCOM organizes, trains, and equips Special Operations Forces provided to Geographic Combatant Commanders, American Ambassadors and their Country Teams. ln order to accomplish its Combatant Command mission, USSOCOM has been assigned the following core tasks: Counterterrorism (CT), Counter-proliferation (CP), of Weapons of Mass Destruction (WMD), Special Reconnaissance (SR), Direct Action (DA), Unconventional Warfare (UW), Information Operation (l 0), Psychological Operations (PSYOP), Foreign internal Defense (FID), and Civil Affairs Operations (CAO). The relation of the SUSTAIN capability to each is detailed below: 4.1.1 Counterterrorism (CT) CT is SOCOM's number one mission. CT produces effective protective measures to reduce the probability of a successful terrorist attack against U.S. interests. This task involves offensive measures taken to prevent, deter, preempt, and respond to terorism. SOF are specifically organized, trained, and equipped to conduct covert, clandestine, or discreet CT mission in hostile, denied, or politically sensitive environments. These missions include, but are not limited to intelligence operations, attacks against terrorist networks and infrastructures, hostage rescue, recovery of sensitive material from terrorist organizations, and non-kinetic activities aimed at the ideologies or motivations that spawn terrorism. SUSTAIN offers SOP the heretofore nonexistent option for the earliest unopposed insertion of tailored CT teams around the globe. 4.1.2 Counter Proliferation (CP) of Weapons of Mass Destruction (WMD) CP refers to actions taken to support DoD and other govemmental agencies to prevent, limit and/or minimize the development, possession, and employment of weapons of mass destruction, new advanced weapons, and advanced-weapon-capable technologies. The major objectives of DOD policy are to prevent acquisition of WM D and missile capabilities (i.e. preventive defense), roll back proliferation where it has occurred, deter the use of WMD and their delivery systems, and adapt U.S. military forces and planning to operate against the threats posed by WMD and their delivery systems. SOP provides unique capabilities to monitor and support DOD policy. SUSTAIN offers SOF the heretofore non-existent option for the earliest interception of WMD when a fleeting opportunity presents itself. 4.1.3 Special Reconnaissance (SR) This is reconnaissance and surveillance actions conducted as special operations in hostile, denied or politically sensitive environments to collect or verify information of strategic or operational significance, employing military capabilities not normally found in conventional forces. These actions provide an additive capability for commanders and may supplement other intelligence collection when conventional reconnaissance and surveillance actions are limited by weather, terrain, or adversary countermeasures. SUSTAIN may be the only alternative for the insertion of SR for missions of strategic importance where time, distance, and overflight challenges are severe. 4.1.4 Direct Action (DA) DA is the conduct of short-duration strikes and other small-scale offensive actions conducted as a special operation in hostile, denied, or politically sensitive environments to seize, destroy, care, exploit, recover, or damage designated targets of strategic or operational significance, employing specialized military capabilities. Direct action differs from conventional offensive actions in the level of physical and political risk, operational techniques, and the use of discriminating force to achieve specific objectives. SUSTAIN offers the DA mission the elements of speed, surprise and shock. The DA mission will also benefit from the vehicle's organic capabilities. In addition to an organic advanced combined arms weapons suite, the SUSTAIN vehicle(s) will possess a C4 suite that is fully integrated with and actively contributing to the global common operating picture. This includes SUSTAIN ability to facilitate a seamless broad spectrum of secure communications for coordinating requested fires from outside the theater with the team's plans for extraction. This will also permit coordination between the Joint Force Commander and higher, adjacent and subordinate elements throughout the battlespace and globally. 4.1.5 Unconventional Warfare (UW) UW involves a broad spectrum of military and paramilitary operations, normally of a long duration. UW is predominantly conducted by, with, or through indigenous or sunogate forces that are organized, trained, equipped, supported, and directed in varying degrees by an external source. UW includes guerrilla warfare and other direct offensive, low-visibility, covert, or clandestine operations, as well as the indirect activities of subversion, sabotage, intelligence activities, and unconventional assisted recovery. SUSTAIN can serve as a speedy long-range insertion capability for teams when time is short. 4.1.6 Information Operations (IO) These are actions taken to influence, affect or defend information, information systems and decision-making. SUSTAIN will have the operational capacity to assist the SOCOM detachment to the Joint Force Commander in the achievement of IO objectives. The SUSTAIN IO capability-set will include Electronic Warfare (EW), Computer Network Operations, Psychological Operations (PSYOPS), Operations Security (OPSEC), and Military Deception. The IO potential of the SUSTAIN capability is significant in terms of the earliest global appearance of relevant teams and capabilities. 4.1.7 Psychological Operations (PSYOP) PSYOPS are planned operations to convey truthful information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately, the behavior of foreign governments, organizations, groups, and individuals. The purpose of PSYOP is to induce or reinforce foreign attitudes and behaviors favorable to the originator's objectives. Similarly to IO, the PSYOPS potential of the SUSTAIN capability is significant in terms of the earliest global appearance of relevant teams and capabilities. 4.1.8 Foreign Internal Defense (FID) FLD is one of SOCOM's primary peacetime missions. lt is designed to help friendly developing nations by working with their military and police forces to improve their technical skills, understanding of human rights issues, and to help with humanitarian and civic action projects. Special Forces unconventional warfare capabilities provide a viable military option for a variety of operational taskings that are inappropriate or infeasible for conventional forces. Special Forces are the U.S. military's premier unconventional warfare force. Participation by civilian or military agencies of a government in any of the action programs taken by another government or other designated organization to free their society from subversion, lawlessness, and insurgency. SOF's primary contribution to this interagency activity is to organize, train, advise, and assist host-nation (HN) military and paramilitary forces. The goal is to enable these forces to maintain the HN's intemal stability, to counter subversion and violence in their country, and to address the causes of instability. Early SUSTAIN-enabled insertion of FID teams can be critical in a time of crisis, especially when HN civil authority is breaking down. 4.1.9 Civil Affairs Operations (CAO) CAO constitutes operations consisting of civil affairs (CA) activities and specialized support provided to commanders responsible for conducting civil military operations (CMO). CA activities involve establishing and conducting military government or civil administration until civilian authority or government can be restored or transitioned to other appropriate authorities. CA supports CMO by focusing efforts to minimize civilian interference with military operations and limit the adverse impact of military operations on civilian populations and resources.  
  
  
  
**Only the plan creates new responses to high tempo and frequency crises – space is key**  
  
Williams 7 – Shon P., Major, USAF [“Wild Ride: Launching Troops Through Space for Rapid Precision Global Intervention”. April. Blue Horizons Paper, Center for Strategy and Technology, Air War College. <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA497529&Location=U2&doc=GetTRDoc.pdf>]  
  
  
  
One could easily argue that the stated USMC space mobility requirement begs the question, “Why do the Marines and the nation need the ability to send troops through space?” The world is changing. Enemies in The Long War on Terror and of the nation’s future are not limited by borders. In his provocative work, The Clash of Civilizations?, Samuel Huntington hypothesized that in the coming years “the dominating source of conflict will be cultural…the principal conflicts of global politics will occur between nations and groups of different civilizations.” 5 He goes on to say that while conflicts between states will still exist “the fault lines between civilizations will be the battle lines of the future.” 6 With the increase in globalization, one cannot necessarily draw these “fault lines” on a map—they defy borders and span the globe. This trend is sure to continue, and, as such, we must be prepared to appear anywhere in the world within seconds, minutes, or a few hours versus many hours, days, or more. Conceivably the around U.S. military will need to respond quickly to multiple locations around the world simultaneously. Forward presence of military units the world may be sufficient in some cases; however, we likely will not have the force size or political will to maintain the level of forward presence required to respond to the emerging set of conflicts. Space has the potential to afford us this global flexibility and responsiveness. United States Special Operations Command expanded upon these thoughts in its 2004 Special Operations Forces Space Enabling Concept (SOFSEC). They foresee that a dangerous, 4 uncertain strategic environment with a dramatically increasing range of threats will continue to pose challenges in the future. The following elements characterize this future strategic environment: “military power will continue to be required to protect…U.S. global interests”; the “battlespace will continue to be global, if not universal”; “the speed and scale of the proliferation of…technology and CBRNE weapons will continue to increase”; 7 “adversaries will have greater access…to sophisticated capabilities”; and “adversaries will continue to adapt as U.S. capabilities evolve.” 8 Tapping into the global reach capabilities that space power offers will allow the US and its Allies to handle the complex contingencies that will continue to litter the international landscape. In light of the changing world situation, the USMC has predicted that in 25 to 30 years they will need to send a “squad-sized unit of Marines any place on the Earth in less than two hours time.” 9 As stated in their 2002 Universal Needs Statement (UNS) for the Small Unit Space Transport and INsertion (SUSTAIN) capability, “the Marine Corps needs a capability to transport small, mission-tailored units through space from any point on the globe to a contingency at any other point on the globe within minutes.” 10 The Marines like to refer to the concept as getting 13 thinking “brains” on the ground at the earliest stage of a crisis rather than 13 sets of “boots.” Based on the UNS, the SUSTAIN capability should have the following characteristics: negligible sensor cross-section, kinetic air defense survivability, flexibility to enter and sustain low earth orbit, transport of up to 13 combat-equipped personnel (not including the transport crew), flexible launch on demand, combined arms weapons suite for self-defense and fire support, multiple personnel insertion options (high altitude, low altitude, ground), unrefueled transport operation for entire mission cycle, vertical and/or short takeoff and landing (V/STOL), avoidance of foreign airspace overflight restrictions, and post-mission extraction 5 ability. Appendix A contains the full text of the UNS as well as the unpublished draft Initial Capabilities Document (ICD). Marine Colonel J. R. Wassink, head of the Information Operations and Space Integration Branch at the USMC Pentagon headquarters offered anecdotal evidence as to the need for faster response times. Regarding the 04 November 1979 capture of 66 American civilians at the US diplomatic mission in Tehran, Col Wassink pondered, “What could have been done if we could have rapidly reinforced the embassy in Iran? Could we have avoided the [14-month] hostage crisis?” He went on to say that time, distance, and access issues have caused the Marines to reconsider their options for future expeditionary warfare: “We looked at space because you don’t have to worry about overflight. [Also], a prepositioned MEU with a V-22 or C-17 still takes many times longer than two hours to get there.” 11 Similar to the USMC need, Special Operations Forces (SOF) require “responsive unmanned lift for systems and high loiter vehicles that support persistent and pervasive operational awareness…launched on short notice into space.” 12 Although the stated SOF requirement only asks for responsive, flexible, unmanned access to space, many of the requisite technologies are the same. Certainly with SOF’s rare ability to exploit new technology, USSOCOM would also jump at the opportunity to transport a SOF team anywhere in less than two hours. From an Air Force perspective, the preponderance of effort related to flexible, rapid space access comes from the Operationally Responsive Space (ORS) program. According to the Mission Needs Statement (MNS), one of the four ORS required key capabilities is “recoverable, rapid-response transport to, through, and from space,” and any ORS systems must be responsive, maneuverable, operable, economical, survivable, interoperable, and flexible. 13 The SUSTAIN 6 concept falls well within this mission space. Additionally, Maj Bob Lancaster, an Air Force Security Forces officer who worked the Security Forces Transformation project, immediately recognized Air Force applications that stem from the USMC concept. He postulated that “if [the USMC and SOF] mission is base seizure, and they get there in under two hours, the follow-on forces (Security Forces, etc.) will need to get there quickly as well.” 14 Career logistician Maj Andy Hunt of HQ USAF/A9 also acknowledged utility in the concept for Air Force rapid resupply missions stating that “from a logistics standpoint it would be fantastic.” 15 The obvious implication of responsive space launch is the fast, flexible, precise global delivery of “stuff” (i.e., people, equipment, weapons, or other assets). An important side benefit of this precise global delivery is the global range that it affords, thus avoiding much of the costs, force protection, sustainment, and foreign access requirements of forward bases. 16 Furthermore, one can easily envision other benefits of this type of capability: point-to-point high-value cargo delivery, long range strike and precision global strike (PGS), or, if extended to orbital applications, responsive satellite replenishment, satellite repair, or astronaut recovery.  
  
  
  
  
  
**SUSTAIN is k2 effective crises response through early military engagement**  
  
Damphousse 8 – Marine, lieutenant colonel, MA in aeronautical engineering, former Space Control and Special Technical Operations action officer , Chief of Advanced Concepts at the NSSO. [Concept of Operations for the Small Unit Space Transport and Insertion (SUSTAIN) Capability. Includes input from the NSSO, air force, special forces, and marine corps. <http://www.docstoc.com/docs/20263477/Concept-of-Operations-for-the-Small-Unit-Space-Transport>]  
  
The expeditionary nature of Joint SOP will allow for tailorable force packages capable of conducting operations in countries and regions of interest anywhere in the world. These tailorable force packages will provide COCOMS with a highly responsive and adaptable instrument to influence operations or resolve crises. With respect to responsiveness SUSTAIN provides a leap-ahead improvement over traditional aerospace transport for those teams. SOCOM teams organize, train and equip specifically for operations globally. Yet, absent the preexisting forward deployment of teams, transport of teams and capabilities is limited to terrestrial air, land, sea, and undersea vehicle speeds. New concepts for aircraft carrier and amphibious shipping Sea Bases expand SOCOM basing options, offering political leaders increased freedom of action; however land-locked areas of operation and overflight restrictions still present SOF insertion constraints. The SUSTAIN capability provides SOF teams in support of the Joint Force Commander (JFC) or national command Authority (NCA) the capacity to be rapidly transported to any point on the globe, effectively instantaneously. The objective SUSTAIN capability spans the full spectrum of Special Forces (SF) employment, to include a wide range of manned and unmanned payloads. A fundamental advantage of a SUSTAIN capability with global reach stems from its inherent operational mobility, or more precisely its operational agility. Specifically, it provides the highspeed transport necessary to rapidly move credible specialized forces to remote locations with precision. Furthermore, it provides this capability within minutes and hours of execution orders as opposed to days associated with conventional terrestrial transportation. Equally suitable for operations from land-based airfields, space ports, SUSTAIN vehicle-capable carrier ships, or military space stations, SUSTAIN provides the Joint Force Commander (J FC) virtually unlimited basing options for Special Forces (SF) team insertion and extraction. SUSTAIN will constitute the first family of multi-mission military aerospace vehicles to include a man-rated space vehicle in the SOCOM tool kit. It will blend the versatility of tactical assault support aircraft with the revolutionary speed and global reach that can only be achieved with a suborbital or orbital space craft. SUSTAIN is planned as a combined arms compliment to conventional all-terrestrial aircraft capabilities such as the CV-22, C-130, and the other fixed and rotary wing aircraft in the SOCOM inventory. SUSTAIN is a high leverage capability that will greatly expand JESOF and national options in an age where timely response to crises in their infancy can mitigate the need for an escalation of hostilities at an increased national cost.  
  
  
  
**SUSTAIN ensures quick victories**  
  
Damphousse et al 10 [Paul Damphousse, Marine, lieutenant colonel, MA in aeronautical engineering, former Space Control and Special Technical Operations action officer , Chief of Advanced Concepts at the NSSO; Bart Denny. Space Systems Analyst at U.S. Special Operations Command; Alan Dunham, senior analyst at the National Security Space Office; Franz Gayl, science and tech adviser to the Marine Corps’s deputy commandant; Roosevelt Lafontant, a former Marine lieutenant colonel now employed by the Schafer Corporation, a military-technology consulting firm working with the Marines; Bob Lancaster is the Executive Director of the Texas Space Alliance, following service in the Air Force as Branch Chief for Force Protection Innovations at the Headquarters Air Force Security Forces Center; Amy Pointer (NSSO); Paul Rancatore (NSSO); David Smith (NSSO); and Christopher Stone (NSSO). “Space Transportation Technology Roadmap”, a collaboration by government and industry to address U.S. government and commercial space transportation needs. October 21,<http://www.nasawatch.com/images/Space.Tran.Tech.Roadmap.pdf>]  
  
4.2.4.28.1 In order to justify the cost of a revolutionary military system such as SUSTAIN, it must demonstrate a high-level of military utility in a variety of scenarios. Thus, a military utility analysis was performed to assess the value of SUSTAIN. We chose an invasion of a friendly nation by a hostile nation as our test case, as it would stress intelligence collection and prompt negation of Weapon of Mass Destruction (WMD) time-critical targets. We compare this conflict occurring in 2010 without SUSTAIN with the same conflict occurring in 2025 with SUSTAIN, while keeping everything else in the war game the same. 4.2.4.28.2 During our 100 war game runs [simulation runs], SUSTAIN was able to deliver a covert Special Forces team to a hostile nation within 12 hours of an American Intelligence Community request to verify a potential nuclear attack and successfully sabotage the nuclear delivery system hours before the attack to prevent a catastrophe to American and allied nation military forces. This resulted in a stunning and overwhelming victory to American and allied forces using SUSTAIN vs. a surprising victory by hostile forces when SUSTAIN was unavailable. ♣ 4.2.4.28.3 SUSTAIN significantly improves the blue (allied) force exchange ratio -- 98% of blue forces survive, while 50% of red (hostile) forces are neutralized in 2025. This is compared to 80% of red forces surviving and 50% of blue forces being neutralized in a 2010 invasion without SUSTAIN. Attrition rates for the two sides with and without SUSTAIN are shown below. [GRAPH REMOVED] ♣ 4.2.4.28.4 To conduct this military utility analysis, we utilized three modeling and simulation tools: Satellite Tool Kit from Analytical Graphics, Inc. to model the orbital and suborbital SUSTAIN geometries, EXTEND from Imagine That, Inc. to model the communication nodal data flow, and Systems Effectiveness Analysis Simulation (SEAS) from the United States Air Force to model the war. 4.2.4.28.5 Conclusions. SUSTAIN employment can revolutionize the twenty-first century battlefield. U.S. military force projection capabilities could be greatly enhanced by a rapid-response Prompt Global Transport capability that will provide over-flight of denied territory by at least 50 miles altitude. SUSTAIN should consider using a family of multiple architectures and designs for maximum mission adaptability. The SUSTAIN trade space should encompass various options such as ballistic sub-orbital flight, flight largely within the atmosphere, and ―atmospheric skipper‖ near-space trajectories. Although the non-recurring engineering as well as the operation of a Prompt Global Transport system are likely to be costly, the savings resulting from crises averted should make it well worth the investment.