

# The Texas Grid and U.S. National Security

Backgrounder No. 182

by David Grantham

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*America's electric power grid is arguably the most vulnerable part of our nation's infrastructure. Divided among three geographical regions, the U.S. network remains dangerously exposed to a host of potentially devastating natural disasters and foreign attacks. Yet, Texas finds itself in a unique position to act.*



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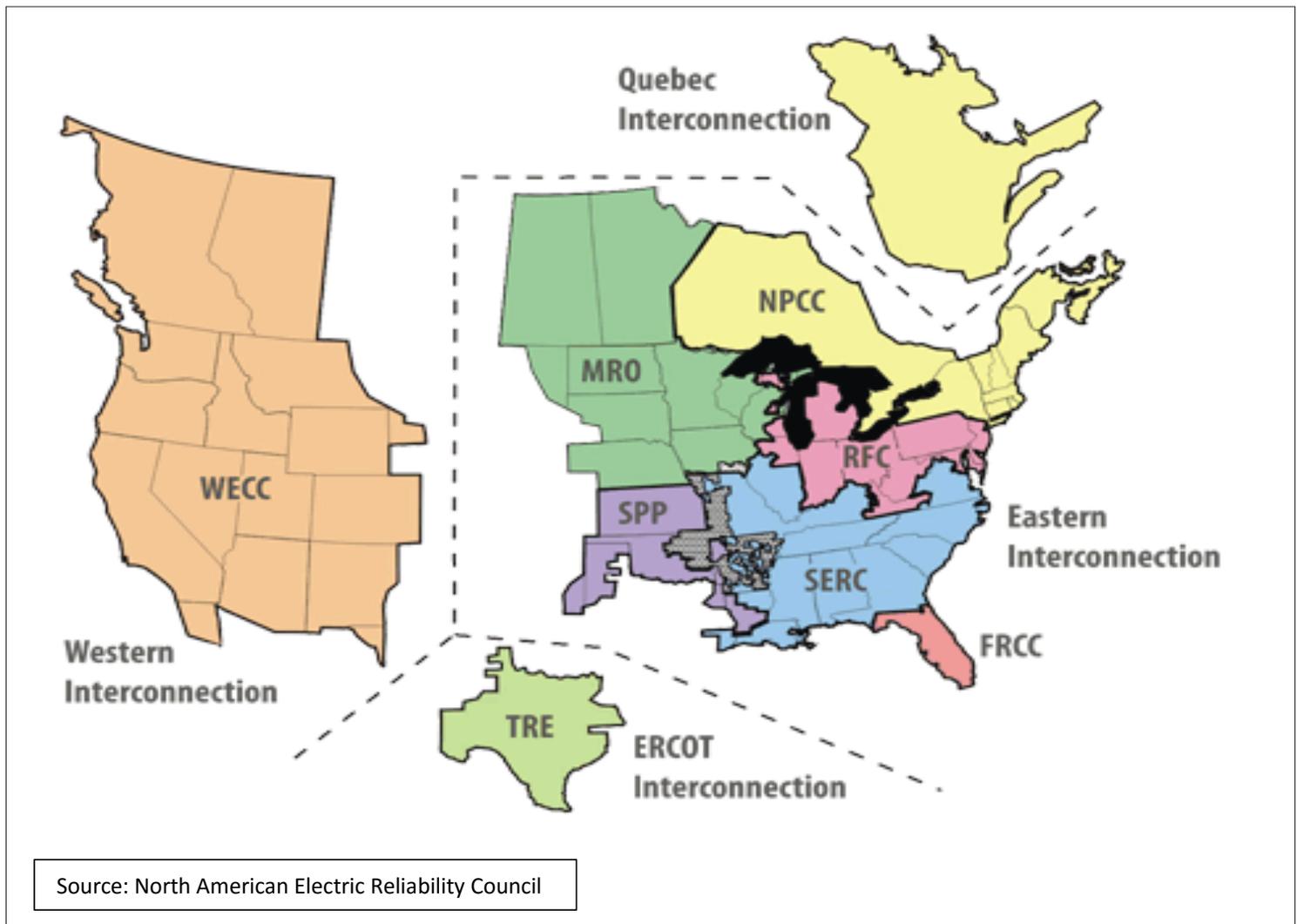


Utilities in the Lone Star State operate their own, self-contained grid. And, because it is confined within state borders, the Texas government has authority to preempt catastrophe by “hardening” the system. The state government has the responsibility for public safety, the financial resources and access to the latest technologies necessary to accomplish this mission.

**The Threat Cannot Be Overstated.** In 2010, the Defense Intelligence Agency (DIA) released a translated copy of an Iranian military doctrine publication. The “Passive Defense” textbook advocates for a variety of Electromagnetic Pulse (EMP) attacks as a means of blacking out an enemy’s electric grid, suddenly and anonymously. Former CIA Director James Woolsey explains that the most devastating EMP options remains the high-altitude detonation of a nuclear weapon.<sup>2</sup> Such an operation could theoretically be accomplished by simply launching a single, unsophisticated ballistic missile from a freighter floating off the American coast. Other delivery systems include low-orbit satellites and crude nuclear devices. North Korea actually practiced a nuclear EMP attack in April 2013, and the U.S. EMP Commission concluded that Russia and China now favor this type of asymmetric warfare — a style of war wherein the military capabilities between two combatants differ significantly — and have both the capability and motivation to carry it out.<sup>3</sup>

An EMP can also be a natural hazard. Recent analysis shows that solar storms create natural EMPs in the Earth’s atmosphere that could decimate electric grids. In fact, something similar occurred in 1859. Known as the Carrington Event, the solar storm emitted an electromagnetic pulse that rendered telegraph systems in the United States, Europe and elsewhere inoperable for two days. The impact was minimal due to the limited use of electricity. The same weather-related incident today, however, would have enormous repercussions for our multilayered, interconnected web of energy and electricity. According to experts, a Carrington-level solar storm occurs roughly every 150 years. The last incident happened 154 years ago.<sup>4</sup>

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**The Consequences of Inaction Are Almost Unfathomable.** The Northeast blackout in 2003 left nearly 55 million residents of the United States and Canada temporarily without power. Crews traced the cause to a software error at a utility control room in Ohio and restored power after two days, for most of those affected. But the blackout disrupted transportation in many areas, cut off city water in several locations, and hampered emergency services. Experts attributed 10 deaths to the blackout, which cost more than \$10 billion.<sup>5</sup>

Remember: For many, this blackout only lasted a few days. And there was no significant damage to sensitive infrastructure. The Congressional EMP Commission argues that an EMP attack, however, would cause serious injury to important power equipment and create blackouts for at least one year. And “given the nation’s current state of

unpreparedness,” the detonation of a High Altitude Electromagnetic Pulse (HEMP) device would lead to the deaths of 200 million Americans from starvation, disease and anarchy.<sup>6</sup>

Even with the military’s most advanced stand-alone microgrids and emergency recovery systems, federal installations in Texas remain reliant on the grid. An EMP attack and the subsequent, prolonged blackout has the potential to not only devastate America’s military capabilities, but permanently undermine U.S. national security. Consider that Hurricane Katrina, for example, required the mobilization of police and military forces to restore order in the affected communities.<sup>7</sup> We can expect that critical military resources will likewise be diverted to humanitarian and civil stability in the case of a prolonged blackout.

The country remains dependent on Texas for its defense readiness. In an era of seemingly unlimited global conflict, hardening the grid should be a top priority.

### **The National Security Implications in Texas.**

Department of Defense personnel are spread among a multitude of career fields and stationed at 15 active-duty military installations across the state. Outside of the Northern Virginia/D.C. area, Texas has the second most active duty bases in the United States. And many of those facilities house mission-critical assets.

According to several government publications, the total number of active-duty defense department personnel stationed in the Lone Star State totals somewhere between 120,000 and 130,000.<sup>8</sup> This range is based on 2013-2014 numbers, which have likely fluctuated with the newly expanded Charles R. Darnall Army Medical Center at Fort Hood and the arrival of the 24th Air Force, Cyber Command at Lackland Air Force Base (AFB).

- Nevertheless, based on the median of those estimates (125,000), Texas hosts just over 11 percent of the military population currently stationed in the continental United States.<sup>9</sup>
- Add in civilians, reservists and National Guard members, and the total defense-related population in the state exceeds a quarter of a million people.<sup>10</sup>
- And thanks to Texas' modern airfields, efficient road systems and extensive rail transportation capabilities, the Pentagon has been able to mobilize and deploy troops with incredible speed and efficiency. In fact, since 2002, over 1 million military personnel have been sent from Texas in support of the United States' most important international conflicts.<sup>11</sup>

This tremendous defense presence also provides a boon to the state economy. Texas benefits from a roughly \$150 billion economic impact. According to the Texas Military Preparedness Commission, the economic output of military installations — including jobs created and taxes generated — is second only to the manufacturing sector. The economic impact for defense-related work surpasses even the information technology sector — where Texas currently ranks second in the country, with over 485,000 cyber-related jobs.<sup>12</sup>

**Air Power in Texas.** Dyess Air Force Base (AFB) in Abilene serves the largest population of Air Force members in Texas and is home to the 7th Bomb Wing of the Global Strike Command. This invaluable unit flies the venerable B-1 bomber — a mainstay in America's war on terrorism. Known for its long range, all weather, day or night use and low/high altitude capabilities, the B-1 Lancer remains the only supersonic heavy bomber in the U.S. arsenal. Its versatility made it a favorite of Pentagon war planners in the years immediately after September 11, particularly because the aircraft can strike enemy positions in both the lawless backcountry of Afghanistan and the urban strongholds of Iraq. Indeed, the B-1 flew the most combat sorties of any long-range bomber from October 2001 to September 2012.<sup>13</sup> The popular aircraft has now been called upon to take on the Islamic State.<sup>14</sup>

This seasoned plane remains one of the more cost-effective long-range bombers in the U.S. arsenal. Compared to the B-52 and B-2, the Lancer has a greater internal payload capacity and is the cheapest of the three to fly.<sup>15</sup> The combined economy and lethality of the B-1 makes it pivotal for future conflicts. As one report noted:

“...if the United States were to find itself in conflict in Asia...shorter-range aircraft fighters stationed at bases in Japan and South Korea would be vulnerable on the ground to long-range missile strikes. But the B-1, with its longer-range and ability to carry 24 Joint Air-to-Surface Standoff Missiles (JASSMs), could operate from far-off bases and beyond the limits of advanced air defense systems.”<sup>16</sup>

The B-1 can only be found in two locations: South Dakota and Texas. Exclusive dependence on two locations for the U.S. military's most effective long-range strike capability means any prolonged grid disruption would incapacitate the most popular and arguably most effective long-range bomber. In fact, a lack of available B-1s would singlehandedly and immediately undermine U.S. readiness capabilities. Deployments would grind to a halt. The temporary absence of the B-1 from strike packages — groups of different aircraft launched together for a single attack — would severely weaken the air campaign against the Islamic State. Any long-term delay

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would completely alter any and all ongoing and future air campaigns until those planes could be moved to another functioning location.

Dyess is also home to the 317th Airlift Group and its fleet of C-130 and C-130J heavy transport aircraft. These widely used planes have proved to be critical assets in the Global War on Terrorism, relied on for troop transport and supply delivery. They have also been frequently called on for noncombat operations, including humanitarian campaigns and disaster relief. The versatility of the C-130s make the 317th an ideal unit for domestic and regional emergency response, and it remains crucial to logistical operations during wartime.

A year-long outage in Texas would render ineffective the very planes that would likely respond to the disaster. The situation becomes increasingly more dangerous when it negates the use of that aircraft most capable and best positioned to respond.

In addition to Dyess, there are a host of other important Air Force installations, including Randolph, Sheppard and Laughlin Air Force Bases, all home to a variety of different pilot training programs for U.S. military and our allies. These do not include GoodFellow AFB and its intelligence and firefighting school, or Ellington Field and its notable Reconnaissance Wing.

**The U.S. Army in Texas.** Two of the largest Army bases in the world are located in the Lone Star State. Fort Hood is the largest armored post in the United States, with a workforce that exceeds 70,000 people. In fact, the Army considers the base to be one of its leading “Power Projection Platforms,” meaning it has the capacity to deploy one or more high priority units or to mobilize high priority reserve components rapidly and effectively. Hood has 289 deployable units and over 70,000 deployable troops, the most of any Army base in the world.

Adding in family members and retirees, and the post actually supports a population of over 385,000 people.<sup>17</sup> That is more than the entire population of neighboring McLennan County, the home of Waco, Texas.<sup>18</sup>

It comes as no surprise then that such a massive installation has played such a crucial role in the Global War on Terrorism. In fact, the Texas Military Preparedness Commission estimates that Fort Hood has deployed and redeployed over 800,000 soldiers since 2003. And, as a result, no single active duty base has sustained more combat-related deaths in Operation Iraqi Freedom, for example, than Fort Hood.<sup>19</sup> The U.S. government’s wartime dependence on this critical post persists, as the Army announced in March 2016 that 1,000 soldiers from Fort Hood would be deploying to Afghanistan in support of Operation Freedom’s Sentinel.<sup>20</sup>

From the III Corps of the United States Army Forces Command — one of only three corps in the entire Army — to the vaunted 1st Cavalry Division and the 3rd Armored Cavalry Regiment, Fort Hood plays an almost irreplaceable role in America’s force projection.

The Pentagon remains intent on maintaining Hood’s sustainability. The recent \$100 million wind and solar project underway at the installation aims to lessen its otherwise total dependence on the state electric grid.<sup>21</sup> But the Obama administration’s primary motivation behind wind and

solar remains greenhouse-gas reduction, rather than energy security. Indeed, these solutions cannot bear the weight of Fort Hood’s energy consumption. Wind power, maligned for its unreliability and low energy production, cannot maintain Fort Hood in the wake of a downed electric grid.

Aside from infrastructural needs, the post’s deployable capabilities would come to a stop. The military would have to make logistical arrangements, not only to move troops to functioning bases outside the affected area, but to those locations capable of absorbing the population of the third-largest base in the U.S. military.<sup>22</sup> Transportation maneuvers, mind you, which cannot depend on the downed Texas grid. The loss of Fort Hood would singlehandedly change the course of Army operations the world over.

And Fort Hood is merely one example. The Army also has its Helicopter Repair Center at Corpus

*“Military installations depend on the electric grid for power.”*

Christi Army Depot and its Mechanized Track Vehicle Repair center at the Red River Army Depot near Texarkana, Texas. Like Fort Hood, the Red River Army Depot is considered one of the Army’s Power Projection Platforms; it is considered a critical Depot and Ammunition plant for military readiness.<sup>23</sup>

Although Fort Bliss, El Paso, is connected to the Western U.S. grid rather than the Texas grid, any neighboring outage would complicate transportation, training and deployment capabilities of its vaunted ground combat units.<sup>24</sup> Bliss, like Fort Hood, remains an essential, irreplaceable post for the Army’s force projections and America’s defense posture.

**Naval Reserve Station, Joint Reserve Base Fort Worth.** The field of naval bases in Texas is equally important to U.S national security. NAS Fort Worth Joint Reserve Base, for example, hosts the third largest population of any active duty bases in the state and is the largest joint reserve operation in the country.<sup>25</sup> Between active duty, civilians and reservists, the base boasts a defense population of over 11,000 people and generates a \$2.3 billion annual impact on the local economy and the North Central Texas region.<sup>26</sup>

Reserve bases are often overlooked as immediately vital to America’s military readiness. Those unfamiliar with defense our posture often fail to recognize that these bases frequently respond to our nation’s most high-profile conflicts and natural disasters. The Fort Worth JRB, in particular, faced closure by the Defense Department in 1991, presumably for this reason. And although the base escaped the chopping block, many residents of the state remain unaware of its renewed prominence in U.S. national security circles. Some even continue to refer to it as Carswell AFB; its former name until 1993.

Despite the 1990 Defense Base Realignment and Closure Act (BRAC), the base remained active, and then actually expanded. Within three years, the 301st

Fighter Wing took command and the 10th Air Force of the Air Force Reserves joined them after leaving the decommissioned Bergstorm AFB in Austin, Texas. That same year, the BRAC also relocated naval assets from the Naval Air Station in Dallas and two Marine Corp reserve aviation squadrons followed.

The Navy took charge in 1993 and today the air station boasts 40 separate commands and supports training operations for every single branch of the U.S. military. From the Navy’s C-40As and the Marine Corps F/A-18s to Air Force F-16s, the installation’s inventory reads like a laundry list of the country’s most important airpower assets.

The Texas Air National Guard also now calls the Fort Worth JRB home. The 136th Airlift Wing flies the world-renowned C-130s transport planes and

remains the primary emergency hurricane response component for the entire Gulf Coast. As one report noted:

“The Texas-based C-130s are the only such Guard aircraft in the Gulf of Mexico region. The 136th aircraft have flown 423 storm response sorties and hauled 939 tons of supplies in the Gulf Coast

for Hurricanes Katrina and Rita in 2005 and Gustav and Ike in 2008...”<sup>27</sup>

And the Fort Worth NAS JRB is but one of three major naval bases in the state. NAS Kingsville and NAS Corpus Christi have a combined defense population of nearly 20,000. According to U.S. Census bureau numbers, this military populace — not including dependents and retirees — represents almost 20 percent of the entire population of those two coastal cities combined.

An attack that disables NAS Corpus Christi, for example, would not simply degrade training missions for the seventh-largest naval base in the country and one of the premiere flight centers in the Navy. It would also disrupt operations for a base that supports most major U.S. Coast guard missions and its border security operations led by the Predator Unmanned Aerial Systems (UAS).<sup>28</sup> Moreover, six different military bases spread across Colorado,

*“An Electromagnetic Pulse could take down the power grid for a year or more.”*

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Louisiana, Oklahoma and Texas all rely on the port city as a designated “Sea Port of Embarkation” — meaning that its facilities are mission-critical for Army readiness.<sup>29</sup> Any long-term grid shutdown to this important gulf port and borderland crossings truly threatens national security.

### **A Military Conglomerate in San Antonio.**

The Alamo City boasts an enormously important combined military operation that joins Fort Sam Houston, Lackland AFB and Randolph AFB. The Joint Base San Antonio (JBSA) is a national asset for, among other things, military cyber warfare and security. As home to the Air Force’s Cyber Command — under the 24th Air Force Major Command — and assets from the National Security Agency (NSA), the joint base remains one of America’s fronts against relentless cyber-attacks from China, Russia and Iran.

Any longstanding electric problems to this 100,000-person installation would blind a major segment of America’s national defense in the virtual world. Lack of access prevents intelligence gathering, which limits foreknowledge of global flare-ups and impending attacks. Worse still, our defense posture would be weakened to frightening levels.

**Texas Military Forces.** Texas has the nation’s largest state military force at nearly 23,000 troops.<sup>30</sup> They represent an invaluable resource for border security, search and rescue and natural disaster response. The Pentagon also relies heavily on the Texas Guard for its global responsibilities. Since 2001, over 52,000 Texas guard troops have deployed in support of overseas missions, primarily wars in Iraq and Afghanistan. I had the privilege of serving with some of these guard troops at Camp Bucca in southern Iraq in 2006.

**America’s Defense Workforce in Texas.** The Lone Star state ranks in the top three for receipt of defense contracts. The aerospace manufacturing industry in Texas is second in the nation, and 17 out of the 20 largest aerospace companies in the world have operations in the state.<sup>31</sup> The greater Dallas/Fort Worth area alone boasts nearly 20 of the nation’s most prestige defense aerospace firms, including L-3 Communications, Bell Helicopter,

Raytheon, Boeing and Lockheed Martin Aeronautics Company.

It then is no stretch to say that the future of America’s defense capabilities begins with Texas. Lockheed Aeronautics Fort Worth, for example, is home to the F-35 Joint Strike Fighter — the future of Air Force and Naval airpower. The company also shares a runaway with the Fort Worth JRB, making it dependent on the military installation to ensure training and flight testing. Bell Helicopter, with its 7,000 person workforce, added a \$230 million headquarters complex in Fort Worth, further increasing the Army’s dependence on Texas’ longevity.<sup>32</sup>

The high concentration of defense-related technological development and manufacturing means the U.S. government cannot afford for the Lone Star State to go dark. The consequences of protracted work stoppages to those major contractors in Texas goes well beyond a threat to America’s rapid defense capabilities. Indeed, any outstanding disruption in the production of the military’s most critical weapon systems would severely undermine long-term defense strategy. If Texas lost power, the United States would see the third-largest producer of military assets go silent. Maintenance of existing platforms, delivery of new systems and the construction of next generation technology would most likely cease. Adversaries would know that America lost future strategic and operational advantages.

**Conclusion.** America’s national security depends on Texas. From rapid mobilization to next generation weapons, the Lone Star State is home to some of the nation’s most vital assets. As Texas goes, so goes the country.

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## Notes

1. A version of this paper was presented at the 2016 Texas Grid Security Summit, Austin, Texas, April 2016.
2. James Woolsey and Peter Pry, "A Shariah-approved Nuclear Attack," *Washington Times*, August 18, 2015.
3. James Woolsey and Peter Pry, "The Growing Threat from an EMP Attack," *Wall Street Journal*, August 12, 2014.
4. Lloyd's, "Solar Storm Risk to the North American Electric Grid," 2013.
5. Electricity Consumers Resource Council, "The Economic Impacts of the August 2003 Blackout," February 9, 2004.
6. Peter Pry, *Apocalypse Unknown: The Struggle to Protect America from an Electromagnetic Pulse Catastrophe* (CreateSpace Independent Publishing Platform, 2013).
7. James Jay Carafano and Richard Weitz, "EMP Attacks – What the U.S. Must Do Now," Heritage Foundation, November 17, 2010.
8. "Texas Military Preparedness Commission Biennial Report, 2013-2014," Office of the Governor, page 61; "Base Structure Report – Fiscal Year 2014 Baseline," Department of Defense.
9. This calculation is based on the total number of military personnel for 2016 being 1,075,505; see "Total Military Personnel and Dependent End Strength," September 30, 2015, Defense Manpower Data Center, Office of the Secretary of Defense, U.S. Department of Defense, table.
10. Texas Military Preparedness Commission, "2014 Texas Military Value Task Force: Preparing for the Future," Office of the Governor, page 9; "Texas Military Preparedness Commission Biennial Report, 2013-2014," Office of the Governor, page 19; Interview with Keith Graf, Director, Texas Preparedness Commission, April 11, 2016.
11. Texas Military Preparedness Commission, "2014 Texas Military Value Task Force: Preparing for the Future," Office of the Governor, page 10.
12. *Ibid.*, page 9.
13. Patrick Megahan, "In Iraq, the B-1 Bomber Proves Enduring Value," Real Clear Defense.com, August 29, 2014.
14. Dan Lamothe, "B-1B bomber gets new missiles as it continues to strike in Iraq and Syria," *Washington Post*, March 10, 2015.
15. Patrick Megahan, "In Iraq, the B-1 Bomber Proves Enduring Value," Real Clear Defense.com, August 29, 2014; and David Axe, "Why Can't the Air Force Build an Affordable Plane," *Atlantic*, March 26, 2012.
16. Patrick Megahan, "In Iraq, the B-1 Bomber Proves Enduring Value," RealClearDefense.com, August 29, 2014.
17. "Texas Military Preparedness Commission Biennial Report, 2013-2014," Office of the Governor, pages 28-31.
18. "QuickFacts," McLennan County, Texas, July 1, 2015, United States Census Bureau.
19. Iraq Coalition Causality Count, Operation Iraqi Freedom, U.S. Fatalities by State, icasualties.org.
20. Brendan McGarry, "Army: 1,000 Fort Hood Soldiers to Deploy to Afghanistan This Spring," Military.com, March 2016.
21. Asher Price, "Fort Hood looks to renewable energy as part of larger military effort," *Austin American-Statesman*, February 7, 2016.
22. "The World's Biggest Military Bases," Army-technology.com, September 4, 2013.
23. Eric V. Larson and John E. Peters, "Preparing the U.S. Army for Homeland Security: Concepts, Issues, and Options," Rand Corporation, 2001, Appendix I.
24. Edward Klump, "EnergyWire: In Far West Texas, solar boosts an isolated utility," El Paso Electric, July 28, 2015.
25. Texas Military Preparedness Commission Military Flyer, "Naval Air Station Fort Worth Joint Reserve Base – Fort Worth, TX," Office of the Governor.
26. Bill Hanna, "NAS Fort Worth celebrates 20th anniversary," *Fort Worth Star-Telegram*, October 6, 2014.
27. "Star Telegram: Texas Delegation Opposes Plan to Move Aircraft from Fort Worth," Office of U.S. Congresswoman Kay Granger, February 28, 2012.
28. "Texas Military Preparedness Commission Biennial Report, 2013-2014," Office of the Governor, pages 36-37.
29. Federal Highway Administration, "Coordinating Military Deployments on Roads and Highways: A Guide for State and Local Agencies," U.S. Department of Transportation.
30. Sig Christenson, "Texas Guard Faces Cloudy Future as Deployments Wind Down," *San Antonio Express News*, January 18, 2014.
31. "The Texas Aerospace & Aviation Industry," Economic Development and Tourism, Office of the Governor, page 2.
32. *Ibid.*, page 12.

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