

DRONE

Resisting Sanitized Remote-Control Death



The Creech 14 and other anti-drone demonstrators gathered in front of Creech Air Force base in April of 2009.

Special Report from the Creech 14
Ground the Drones!

Available online at <http://vcnv.org/project/drone-warfare-awareness>

We Knew

David Smith-Ferri
Charahi Qamber Refugee Camp, Kabul
October 29, 2010

It has come to this.
Young American women and men—
mainly from poor families,
trained to kill,
paid to kill,
equipped with sophisticated weaponry
and shipped to foreign countries—
kill innocent children and adults,
mainly illiterate,
often people who never met an American before.
We call this fighting for democracy,
and national security.

Before we met Khalid,
before he reached like a parent into a pocket of his robe,
before his hand emerged with worn photos of his children
lying there torn, bloody, dead,
before the first assault of shock and horror gripped our throats
and shook us like rag dolls,
squeezing the air out of us
Before he told us that
*an American missile destroyed my home
killed my wife and five children*
we knew that he was waiting for us in Afghanistan,
that he had left the lowland green fertility of his farm, his goats,
his village in Helmand,
left all but the memory of his wife and children
and come with his cousins to this brown, dusty, barren refugee camp
to live with nothing but a tent
between him and Kabul's mountainous winter.
We knew that others had come before him and others follow.
We knew that alarming numbers of American soldiers
home from Afghanistan
would beat their wives,
abuse their children,
kill themselves.
We knew this before Khalid's bearded face
and the broken faces of his children looked at us,
before the start of US military operations earlier this year in Helmand Province,
before Barack Obama ordered a surge of troops,
before the first US troops arrived in Afghanistan in October of 2001.

We knew.

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Drone-Speak

Autonomous - Self-operating: able to sense, self-adapt, plan and make decisions at speeds that preclude having a ground controller.

BAMS - Broad Area Maritime Surveillance (ship-controlled)

CAP - Combat Air Patrol

HALE - High-Altitude, Long-Endurance

ISR - Intelligence, Surveillance, Reconnaissance

LEMV - Long-Endurance, Multi-intelligence Vehicle

MALE - Medium-Altitude, Long-Endurance

MAV - Micro, or Mini, Air Vehicle

NAS - National (civilian) Air Space

NAV - Nano Air Vehicle

Payload - The information gathering, photography and communications electronics “eye” of a drone, mostly contained in the “Skyball” turret under the drone’s “chin”

Persistent - Able to remain airborne for long periods of time, even weeks or months

ROA - Remotely Operated Aircraft

RPA - Remotely Piloted Aircraft

UAV - Unmanned Aerial Vehicle

UAS - Unmanned Aircraft System (a more inclusive term for UAV)

UCAV - Unmanned Combat Aerial Vehicle

The “Eye in the Sky”

In 2009 President-elect Barack Obama drastically escalated the CIA’s secret drone war in Pakistan and U.S. military occupation of Afghanistan. In 2011 President Obama deployed armed drones in the air assault in Libya, and authorized new CIA drone targeted killing campaigns in Yemen and Somalia. Relying heavily on unmanned drones for surveillance and air strikes, armed drones and drone-assisted gunships have raised death and destruction to a new level. Soaring civilian casualties demand a public discussion of the legality and morality of drone warfare.

A *drone* is a remote-control spy plane, variously called an Unmanned Aerial Vehicle (UAV), Unmanned Aircraft System (UAS) or Remotely Piloted Aircraft (RPA). A drone's primary function is to gather information over long periods of time and relay *intelligence, surveillance and reconnaissance* (ISR) electronic data into a vast communications network for military operations. Drones provide military units on the ground with real-time imagery of the terrain from cameras 10,000 to 65,000 feet above the ground. As the billboard reads entering Ft. Huachuca, AZ: “An Eye in the Sky for Boots on the Ground.”

A drone’s “eye” is the \$1 million swiveling “skyball” in the drone’s “chin” containing high-resolution zoom TV and infrared cameras, telescopic spotter and laser target designator. Drones have GPS guidance and special “synthetic aperture” radar (SAR) for seeing through clouds and dust storms, day or night. Real-time imagery is transmitted via Ku-band satellite communications.

But the “Eye in the Sky” can also be a bomb or a missile intended for people on the ground. On Nov 4, 2002, a *Predator* drone operated from Djibouti fired a Hellfire missile killing suspected al-Qaeda members driving an SUV in Yemen. From then on, a drone became an offensive weapon that can also launch bombs and missiles to kill people, an Unmanned *Combat* Aerial Vehicle (UCAV).

The *Predator B Reaper* is the more heavily armed version of the Predator prototype UCAV combat drone. The MQ-9 Reaper can stay in the air 30 hours stalking targets and gathering information. If a decision is made to use the drone’s own weapons, the Reaper can launch heat-seeking Sidewinder or laser-guided Hellfire missiles or 500 lb. Paveway bombs. As drone technology races toward robotic weaponry, the UCAV combat drone is the lethal “hunter-killer” drone of future warfare.

The Combat Drone

In 2005 General Atomics won a \$5.7 billion contract to provide the Air Force 195 *MQ-1 Predators* for 15 squadrons over five years. In 2011 the Predator has over one million flight hours and is now out of production.

The advanced *MQ-9 Reaper*, equipped with Gorgon Stare 10 video-feed cameras to track multiple targets, will gradually replace the MQ-1 Predator. General Atomics will build 48 Reapers per year for the Air Force, plus 36 *MQ-1C Gray Eagle* Reapers for the Army. The Defense Department's Force Objective is 195 MQ-1 Predators and 319 MQ-9 Reapers. By the end of 2013 Predators and the more heavily armed Reapers will fly 65 combat patrols per day.

The Air Force wants an *MQ-X* next-generation combat drone that flies twice as fast as a Reaper and can carry 5,000 lbs of weapons. Several aerospace companies are now competing with General Atomics for the UCAV market. UCAV combat drones in development or pre-production testing or deployment include:

- *Avenger* (General Atomics). On the heels of the Reaper, the Predator C Avenger is jet-powered to fly twice the speed of a Reaper and carry Hellfire missiles and a 2,000-lb JDAM bomb.
- *Sea Avenger* (General Atomics). Sea-based tail-hook equipped UCAV for the Navy.
- *X-47B* (Northrop Grumman). First flight Feb 4, 2011. The X47B “tailless tailhooker” UCAV will take-off and land autonomously on an aircraft carrier in 2013 and demonstrate autonomous in-flight refueling in 2014.
- *Phantom Ray* (Boeing). First flight Apr 27, 2011. A modified X-45C low-observable (LO) hi-speed UCAV with two weapons bays for 3,000 lbs of weapons, including up to nine laser-guided bombs. ***The first drone specifically designed as a UCAV.***

- *Firebird* (Northrop Grumman). First flight Feb 2010. Optionally-piloted, twin-boom tail UCAV prototype for sea-based and MQ-X applications, including weapons.
- *Orion* (Aurora Flight Sciences). First flight summer 2011. The next likely Predator-type combat drone able to stay aloft 120 hours and carry 1,220 lbs of weapons under each wing.
- *Excaliber* (Aurora Flight Sciences). Vertical take-off and landing (VTOL) UCAV armed with Hellfire and Viper Strike missiles.
- *MQ-8B Fire Scout* (Northrop Grumman). UCAV helicopter.
- *MQ-4C Global Hawk* (Northrop Grumman). First flight May 15, 2012. Broad Area Maritime Surveillance (BAMS) combat drone to patrol Persian Gulf and Asia-Pacific. The "Escalade of drones," the Navy will buy 68 UCAV Gloval Hawks for a price tag of **\$11 billion (\$161.8 million each)**.

The sea-based Global Hawk will be operational in 2015 to be based with the 5th Fleet in Bahrain to combat piracy in the Gulf of Aden and patrol the East Asian coastal region from Seoul to Singapore. The UCAV Global Hawk has a range of 10,900 miles and can send real-time video from an altitude of 60,000 feet to ground stations anywhere in the world.

- *RQ-170 Sentinel* (Lockheed Martin). The stealth-shaped RQ-170 is a super-secret unarmed reconnaissance drone believed to have provided the surveillance intelligence for the black military operation that found Osama bin Laden in Abbouttabad, Pakistan.

The Controllers

“Drone-based sensors have given rise to a new class of wired warriors who must filter the information sea.

But sometimes they are drowning.”

New York Times, Jan 16, 2011

The armed drones, *MQ-1 Predators* and *MQ-9 Reapers*, are launched from sites in Southwest Asia, including Jalalabad and Kandahar Air Fields in Afghanistan, Tallil and Balad Air Bases in Iraq, and bases in Kuwait, Jordan, Qatar, Djibouti and Somalia. When a drone takes off in Afghanistan and reaches thousands of feet in altitude, a flightcrew at a U.S. drone base takes control by satellite link. Signals from controllers in the U.S. take 1.2 seconds to reach drones flying over Afghanistan.

Drone flight crews, typically a pilot and a sensor operator, work 12 hour shifts flying **50** drone patrols a day; one combat patrol costs **\$35,000 per hour** and requires **180-200** people for launch, recovery, maintenance, communications, and analysis and dissemination of surveillance data [1]. Since 9/11 intelligence from drone surveillance has shot up **1,600 percent**. [2] Predator and Reaper drones provide at least **400** hours of live video imagery a day to ground units in Afghanistan [3]. Video feeds from the drone’s camera are shared with other analysts around the world, coordinated by a central command post. A military air controller is a bridge between the drone flight crew and ground units.

The addition of Air National Guard (ANG) units to fly **25 percent** of drone combat missions [4] will enable the U.S. military to keep **65** drones in the air every day by the end of 2013, controlled from numerous ground control stations (GCS) around the U.S.:

Creech AFB, NV. Indian Springs, 45 miles north of Las Vegas. Creech is the hub of the drone air war in Afghanistan and drone patrols in Iraq. According to an interview on “60 Minutes” in May 2008, Creech has 250 drone pilots of the 432nd Air Expeditionary Wing flying Predator and Reaper surveillance and armed patrols 7,500 miles away via satellite communications. The 432nd Wing has six operational squadrons, including the 11th Reconnaissance Squadron Formal Training Unit (FTU), the 15th RS, the 17th RS and 42nd Attack Squadron (Reapers), the 78th RS of the Air Force Reserve Command, and one maintenance squadron.

The Nevada Desert Experience annual Sacred Peace Walk during Holy Week in April includes a Ground the Drones protest and vigils at Creech AFB.

[www.nevadadesertexperience.org]

Beale AFB, CA. Marysville, CA. 1st and 12th Reconnaissance Squadrons of the 9th Reconnaissance Wing. Operation, training and maintenance of the *RQ-4 Global Hawk* for world-wide intelligence gathering and combat operations. Since April, 2010, Global Hawks have flown the “Northern Route” from Beale AFB over Canada to Southwest Asia and back.

Cannon AFB, NM. Clovis, NM. 3rd Special Operations Squadron (Air Force Special Operations Command). Operating Predator combat support missions since Oct 2005.

Davis-Monthan AFB, AZ. Tucson, AZ. Activated in Sep 2007, the Arizona Air National Guard 214th Reconnaissance Group flies Predator remote reconnaissance patrols and combat missions 24/7 in Iraq and Afghanistan. The 214th Predator Unit also controls Predator surveillance drones based at Ft. Huachuca, AZ, that patrol the Arizona border with Mexico. Predators were secretly flying over Mexican territory since 2009, helping Mexico to track activities of the drug cartels. In Feb 2011, *RQ-4 Global Hawks* also began flights over Mexican territory [5].

Ellington Field, TX. Houston, TX. Texas Air National Guard operating 12 Predators patrolling the Texas-Mexico border.

Ellsworth AFB, SD. Rapid City, SD. The 432nd Attack Squadron (ATKS) will be reactivated in Jan 2012 to control *MQ-9 Reapers* for remote combat operations and to assist U.S. Customs & Border Protection in patrolling the U.S.-Canada border. First combat air patrol in May 2012.

Grand Forks AFB, ND. Grand Forks, ND. Now the second main operating base for *RQ-4 Global Hawks*. In Jul 2011 the 319th Air Base Wing will control 10 Global Hawks with advanced SAR radar for tracking moving targets.

Hancock Airfield, NY. Syracuse, NY. The New York Air National Guard 174th Fighter Wing in Syracuse has been flying Reapers over Afghanistan since Dec 2009. Hancock is also the maintenance and repair center for Reapers. NY Sen. Schumer is promoting the Adirondacks as a practice area for flying drones in national air space.

In April 2011, Peace Now Ithaca together with the Upstate Coalition to Ground the Drones and End the Wars organized a 5-day peace march from Ithaca to Syracuse to protest the drone air war. On Apr 22, 37 peace activists were arrested during a nonviolent direct action against drone warfare. This action was held in solidarity with the Sacred Peace Walk and drone protest taking place at the same time at Creech AFB, NV. Drone vigils every 2nd and 4th Tuesday.

[www.upstatedroneaction.peaceworksrochester.org]

Hector International Airport, ND. Fargo, ND. 119th Wing of the North Dakota Air National Guard flying Predator ISR missions over Iraq.

Holloman AFB, NM. Alamogordo, NM. The 6th Reconnaissance Squadron is part of the Remotely Piloted Aircraft Flying Training Unit for Predators and Reapers.

Langley AFB, VA. Drones being flown in the secret war in Pakistan are controlled by the CIA's secret intelligence and surveillance center at Langley, AFB, part of the Air Force's \$5 billion global surveillance network. In a big warehouse, hundreds of TVs are monitored by "cubicle warriors," of the 480th ISR Wing, each watching 10 TVs showing "Death TV," live video from drones in Southwest Asia [6].

March Joint Air Reserve Base, CA. Riverside, CA. The California Air National Guard in 2007 was first ANG to fly Predators on remote combat support missions. Assigned 12 Predators using Edwards AFB for training.

Springfield ANG Base, OH. The 178th Fighter Wing became a ground control station for MQ-1 Predators in May 2010, operating from the Springfield-Beckley Municipal Airport.

Whiteman AFB, MO. Knob Noster, MO. Predator basing in Feb 2011, operated by Air Force active duty, Air National Guard and Air Force Reserve.

Many other training and testing sites are also part of the ubiquitous drone control, communications and manufacturing complex: **Edwards AFB, CA**, is used by March Joint Air Reserve Base for *Predator* flight training, and for flight testing Northrop Grumman's *X-47B* and Boeing's *Phantom Ray* UCAV combat drones; **Ft. Huachuca, AZ**, 50 miles south of Tucson, is a drone training center and closed-range facility for demonstration tests of small reconnaissance and UCAV combat drones. *Predator* drones controlled by Davis-Monthan AFB for border surveillance are housed in new hangers at Ft. Huachuca [7]. **Nellis AFB, NV**, adjacent to Creech AFB is a drone training center for foreign countries. Xe (Blackwater) mercenaries train at Nellis to load missiles and bombs on *Predators* and *Reapers*[8]. **Randolph AFB, TX.** San Antonio, TX. The 563rd Flying Training Squadron offers a four-week Unmanned Aircraft Systems Fundamentals Course (UFC) for drone pilots. Training provides 100 hours of simulator and academic classes, including flying simulated computer-generated air strikes in a real-time "cyber-aerial battlefield." The UFC program graduates 100 drone pilots per year to work at ground control stations world-wide. **Yuma Proving Grounds, AZ**, is the test site for tactical and new high-altitude, long-endurance drones, such as the U.K.'s solar- powered *Zephyr* designed to stay aloft for up to three months.

The Drone Merchants

The U.S. military is using over 7,000 unmanned drones. In 2010 unmanned drones outnumbered manned aircraft. Drone sales will earn \$20.2 billion over the next 10 years for aerospace war manufacturers, with \$20.6 billion more spent on R&D.

General Atomics and Northrop Grumman have 57% of the U.S. market and U.S. companies control 65% of the international market. World-wide, 49 companies make over 150 different drone aircraft [9]:

AAI Corp. Hunt Valley, MD. [www.aaicorp.com]

- *Shadow RQ-7B* tactical army drone: 11 ft. long, 14 ft. span, 375 lbs. Flies 135 mph to 15,000 feet for 5-7 hours and a range of 75 miles.

AeroVironment. Monrovia, CA. [www.avinc.com]

- *Hummingbird*, world's smallest flapping-wing drone, for close-in surveillance such as flying through open doors and windows. 6.5 in. span, 1 oz. Video camera and 4 electric motors. [www.aviationweek.com/ares]
- *Dragon Eye* ISR mini-drone: 3 ft. long, 3.8 ft. span, 5.8 lbs. Flies 40-60 mph to 500 feet for 1 hour and a range of 3 miles.
- *Wasp III* ISR mini-drone: 1.25 ft. long, 2.4 ft. span, 1 lb. Flies 40-60 mph to 1,000 feet for 45 min.
- *Puma AE* multipurpose/reconnaissance drone: 6 ft. long, 8.5 ft. span, 12 lbs. Flies 50-90 mph, to 1,000 feet for 4 hours and a range of 9 miles.
- *Raven RQ-11* "back-packable" ISR mini-drone: 3 ft. long, 4.5 ft. span, 4 lbs. Flies 25-80 mph to 10,000 feet for 1.5 hours and a range of 6 miles.
- *Global Observer*, world's largest high-altitude, long-endurance (HALE) persistent ISR drone: 250 ft. span, 10,000 lbs. Stays aloft for 7 days up to 70,000 feet. World's first liquid hydrogen-powered drone flight, May 2005.

Aurora Flight Sciences. Manassas, VA [www.aurora.aero]

- *Orion* Medium-altitude, long-endurance (MALE) ISR/UCAV drone: 50 ft. long, 132 ft. span, 8,900 lbs. with 1,000 lb. payload. Can carry 1,200 lbs. of external fuel tanks or Hellfire missiles under each wing. Flies 140 mph up to 30,000 feet for 5 days with a 9,500-mile range. **In development**, first flight summer 2011.
- *Excaliber* tactical strike UCAV: 23 ft. long, 21 ft. span, 2,600 lbs. Flies 300 mph up to 40,000 feet for 3 hours. Autonomous flight control, vertical take-off and landing (VTOL). Armed with Hellfire and Viper Strike missiles. **In development.**

Boeing Defense, Space and Security. St. Louis, MO. [www.boeing.com/bds/]

- *A160 Hummingbird* ISR helicopter drone: 35 ft. long, 36 ft. rotors, 5,000-6,500 lbs. with a 1,000 lb. payload. Flies 200 mph up to 30,000 feet for 20 hours with a 2,500-mile range. In 2011 will be equipped with an Argus-IS gigapixel multi-camera sensor with 65 video feeds. **In development**, but Army will deploy three Hummingbird helicopter drones to Afghanistan in 2011.
- *Solar Eagle* ISR drone: 435 ft. span, 6,000 lbs. To stay aloft for five years (43,800 hours). **In development**, first demonstration flight in 2013.
- *Phantom Ray*, modified *X-45C* advanced ISR/UCAV: 36 ft. long, 50 ft. span, 36,500 lbs. Flies 615 mph up to 40,000 feet. **In development**. Cost: \$60-70 million.
- *ScanEagle* ISR mini-drone: 4 ft. long, 10 ft. span, 44 lbs. Flies 55 mph up to 19,500 feet for 20 hours.
- *Integrator* ISR mini-drone: 7 ft. long, 16 ft. span, 135 lbs. Flies 63 mph up to 20,000 feet for 40 hours.

General Atomics Aeronautical Systems. San Diego, CA. [www.ga-asi.com]

- *MQ-1 Predator* ISR/UCAV drone: 27 ft. long, 55 ft. span, 2,500 lbs. with 450 lb. payload. Flies 138 mph up to 25,000 feet for 40 hours with a 675 mile range. Carries two 100-lb. laser-guided Hellfire missiles. Cost: \$5 million.
Predators are delivered as a multi-aircraft system which includes 4 drones, a ground control station in a 30-foot trailer (GCS), and a data terminal with an 18-foot satellite dish for Ku-band transmissions. **Out of production in 2011 [10].**
- *MQ-9 Reaper* ISR/UCAV drone: 36 ft. long, 66 ft. span, 10,500 lbs. Flies 275 mph up to 50,000 feet for 30 hours. Can carry 3,000 lbs. of munitions, including Sidewinder heat-seeking and laser-guided Hellfire missiles and Paveway 500-lb. bombs. Defense Dept. purchased 48 Reapers 2009-2010, 36 in 2011, and plans to procure 48 per year for the next four years to replace the MQ-1 Predator. In 2011 will be equipped with Gorgon Stare, wide-area camera sensor with 10 video feeds to track multiple targets [11]. Cost: \$28 million (\$1.1 billion in 2012 budget).
- *MQ-1C Gray Eagle* ISR/UCAV drone for the Army: 28 ft. long, 56 ft. span, 3,200 lbs. Flies 173 mph to 29,000 feet for 30 hours. (\$806 million in 2012 budget).
- *Avenger* ISR/UCAV drone: 38 ft. long, 64 ft. span, 16,800 lbs. Jet-powered, stealthier than Predator or Reaper. Flies 460 mph to 50,000 feet for 20 hours. Hellfire missiles and weapons bay for a 2,000 lb. Joint Direct Attack Munition (JDAM). **In development.**
- *Sea Avenger* sea-based combat and ISR drone: Designed for Navy's Unmanned Carrier-Launched Airborne Surveillance and Strike (UCLASS) System. **"Deployable soon"**.
- *Sky Warrior Alpha* ISR/UCAV Predator-design drone for the Army. Flies up to 25,000 feet for 40 hours.

Honeywell Aerospace. Phoenix, AZ. [www.honeywell.com]

- *RQ-16 T-Hawk MAV* vertical takeoff and landing drone: 17 lbs and flies 45 mph up to 7,000 feet for 40 minutes.

Northrop Grumman Aerospace Systems. Redondo Beach, CA

[www.northropgrumman.com]

- *MQ-8B Fire Scout* multipurpose helicopter: 23 ft. long, 27.5 ft. rotor, 3,150 lbs. with 800 lb. payload. Flies 144 mph up to 20,000 feet for 8 hours with 126-mile range. **In development.**
- *MQ-8C* Sea-based rotorcraft for Navy. Operational in 2015.
- *RQ-4 Global Hawk* ISR drone: 44 ft. long, 116 ft. span, 25,600 lbs. with 2,000 lb. payload. Flies 450 mph up to 65,000 feet for 24 hours with 13,800-mile range. Camera sensors can cover 40,000 square miles in a day. Operated in U.S. from Beale AFB, CA, and three stationed at Andersen AFB, Guam. Cost: **\$218 million** (**\$12.4 billion** for 55 drones, \$1.8 billion in 2012 budget).
- *MQ-4C Global Hawk (BAMS)* Broad Area Maritime Surveillance sea-based UCAV drone: 47 ft. long, 130 ft. span, 32,250 lbs. Flies up to 60,000 feet for 36 hours with a 10,900 mile range. **In development.** First flight May 15, 2012. Operational in 2015 to patrol Persian Gulf and Asia-Pacific. Cost: **\$161.8 million** (**\$11 billion** for 68 drones, \$549 million in 2012 budget.)
- *X-47B* tailless, stealth-shaped UCAV drone: 38 ft. long, 62 ft. span, 44,273 lbs. Flies 172 mph up to 35,000 feet for 12 hours. Designed to take-off, land and operate autonomously from an aircraft carrier. **In development**, scheduled to self-land on a carrier in 2013 and perform autonomous air refueling in 2014.
- *LEMV (Long Endurance, Multi-intelligence Vehicle)*: 300 ft. long airship to stay aloft 3-4 weeks up to 20,000 feet. **In development**, to be deployed to Afghanistan in 2011.

Raytheon Co. Waltham, MA.

- *Cobra* ISR drone: 9 ft. long, 10 ft. span, 100 lbs. Flies 60-70 mph for three hours. Raytheon Corp. (Tucson) is also developing the *Griffin*, a lightweight guided air-to-ground (AGM) missile for the Predator and smaller combat drones. A Predator can carry three Griffins for each 100-lb. Hellfire missile [12].

Communication Systems West, Salt Lake City, UT.

- Makes the Predator Reconnaissance System, or Ku-band Satcom Data Link (KuSDL).

The Human Cost

AFGHANISTAN

*“People were in the gardens to water their plantings.
The plane without a pilot targeted them and they were killed.
-Agha Jan, a resident of Lashkar Gah*

The fundamental logic of unmanned drones is to carry out military actions without risking American lives. The flaw in this logic is the risk of killing innocent people. This risk is increased by *bad intelligence, targeting errors, and plain old technological arrogance.*

In a “60 Minutes” segment on Creech AFB on May 10, 2009, a Predator pilot, Lt. Col. Chris Gough, was asked: “What if you get it wrong?”
Col. Gough replied, “We don’t.”

On Feb 21, 2010, based on inaccurate information from drone controllers at Creech AFB, a Kiowa attack helicopter fired Hellfire missiles at three vehicles in Oruzgan province in Afghanistan killing 23 civilians [13]. The drone flightcrew had misidentified the civilians as insurgents. Gen. McChrystal apologized for the incident and called civilian deaths “heartbreaking.”

This was not the first heartbreaking accident in Oruzgan Province. In July 2002 an AC-130 gunship fired on a wedding party killing 48 Afghans, including many women and children. In July 2008 an air strike on another wedding party in eastern Afghanistan killed 47 civilians, including 39 women and children. One month later on Aug. 22, another AC-130 gunship attacked the village of Azizabad killing 76-90 civilians including 60 children [14]. *The Telegraph* reported on Jul 27, 2010 a *Wikileaks* memo that suggests the U.S. tried to cover up the bombing of a compound in Helmand Province in Aug 2007 that killed up to 300 civilians.

Directly or *indirectly*, unmanned Predator and Reaper drones are usually complicit in the killing of innocent civilians. Hundreds of civilians are killed by bombs and Hellfire missiles from drones targeting Taliban insurgents. Hundreds more civilians are killed by helicopter and AC-130 gunships and by ground troops *using surveillance information from drones.*

A Human Rights Watch report in 2008 concluded that

“High civilian loss of life during air strikes has almost always occurred during the fluid, rapid-response strikes, often carried out in support of ground troops after they came under insurgent attack.” [15]

On May 4, 2009, American air strikes in Farah Province killed 117 to 147 civilians, including 26 women and 61 children, in what human rights workers called the worst civilian loss of life in eight years of war in Afghanistan [16]. Defense Secretary Robert M. Gates said, “I believe that the civilian casualties are doing us an enormous harm in Afghanistan, and we have got to do better.”

Following the Farah tragedy, Afghanistan President Hamid Karzai told CNN,

“We believe strongly that air strikes are not an effective way of fighting terrorism.”

What happened exactly four months later in Omar Khel in Kunduz Province was another ghastly incident that drone surveillance should not have allowed to happen. On Sep 4, 2009, a U.S. F-15 dropped two 500-lb. bombs on people collecting leaking fuel from two hijacked fuel tankers incinerating 70-90 civilians. Then, on Dec 27, 2009 an air strike in Kunar Province killed 10 civilians, 8 of them school-aged boys. A few days later, on Dec 30, another missile strike in Lashkar Gah, the capital of Helmand Province resulted in the deaths of eight more civilians, including three children.

The New York Times reported in Feb 2010 that Predator and Reaper drones launched at least 250 bombs and missiles in 2009 [17]. News reports cite **129** air attacks in Afghanistan between Jan 2009 and May 2010. U.S. air strikes in Afghanistan claimed the lives of another **171** civilians in 2010, while casualties from helicopter gunships **tripled** [18]. According to the United Nations and Human Rights Watch, **1,598** civilians died in U.S. air attacks in Afghanistan in the five years 2006 to 2011 [19]. In the first six months of 2011, at least **79** innocent Afghan civilians have been killed in U.S. air strikes.

“Civilian casualties are no longer acceptable. Apologies are not enough.”

-Afghan President Hamid Karzai

The civilian death toll in the U.S. air war in Afghanistan continues to grow. On Feb 19, 2011, an air strike in Kunar Province killed 65 people, including many women and children. One day later, another air strike in Nangarhar Province accidentally hit the house of an Afghan soldier killing him, his wife and four children.

On Mar 1, 2011, another accidental air strike killed nine children gathering firewood on a hillside in the Nangalam District of Kunar Province. Gen. Petraeus apologized and said the accident "should have never happened," but the incident brought hundreds of protesters into the streets of Kabul. On Mar 7, Defense Secretary Robert M. Gates said the Nangalam accident was "a setback for our relationship with the Afghan people."

On May 25, 2011 in another example of erroneous targeting by U.S.-led air strikes, helicopter gunships killed more than 20 Afghan police officers in Do Ab, the district center of Nuristan Province. After a NATO air attack had driven Taliban fighters out of the town, Afghan police in local dress re-entered their checkpoints where Taliban flags were still flying and gunships bombed them too.

*"Every loss of innocent civilian life is a tragedy
for the family involved and diminishes our cause."*

-Gen. Petraeus, May 15, 2011

Just before midnight on May 28, 2011 a NATO air strike hit two family homes killing 14 civilians in Salaam Bazaar in Helmand Province. The *New York Times* reported on May 30 that "Five girls, seven boys and two women were killed as they slept." *Reuters* reported another air strike that killed seven civilian family members on Jul 5, 2011 in Sayed Khel village in the Shamel District of Khost Province. Because "People can no longer tolerate attacks on their homes," Afghan President Hamid Karzai promised that Afghanistan will take "unilateral action" to stop NATO air strikes.

The United Nations annual civilian casualty report in March 2011 says **8,830** Afghan civilians were killed in the four years 2007-2011. A total **2,777** civilian deaths in 2010 made 2010 the deadliest year for Afghans in nine years of war, 15 percent higher than 2009 and 45 percent higher than 2007 [20]. May 2011 was the deadliest month for Afghan civilians since 2007 with **368** civilian deaths [21].

The U.N. urges greater protection of Afghan civilians, but this is unlikely as long as the U.S. remains an occupation army in Afghanistan. While 75 percent of civilian deaths are attributed to the Taliban, it must be asked: Who is the foreign invader? How many suicide attacks and IEDs are retaliation for victims of drone attacks? How many enemies are we creating?

In the \$2 billion a week U.S. military occupation of Afghanistan, civilian casualties feed anger and hostility toward America and undermine any efforts to build support among the Afghan people. Former Pentagon official Pierre Sprey points out the fallacy of drone strikes:

“What happens on the ground is for every one of those (bomb) impacts, you get 5 or 10 times as many recruits for the Taliban as you’ve eliminated. The people that we’re trying to convince to become adherents to our cause have become rigidly hostile to our cause.”[22]

PAKISTAN

“The overall perception in Pakistan is that drones are massacring people.”

-Dexter Filkins of *The New Yorker* magazine
NPR interview on May 3, 2011

Called a “brilliant intelligence tool” by the CIA, Predator drones were armed after 9/11 to wage the CIA's secret war against al-Qaeda believed to be hiding out in Pakistan's northwest tribal areas adjacent to Afghanistan [23]. A drone strike in Damadola on Jan 13, 2006, barely missed al-Qaeda second-in-command Ayman al-Zawahri, but killed 18 local civilians.

According to one widely-publicized report in Pakistan in 2009, 60 drone air strikes during 2006-2008 killed 14 al-Qaeda leaders and **687** civilians, a ratio of 1 to 50, the loss of 50 innocent civilian lives to kill one suspected terrorist [24]. On “*60 Minutes*” on Aug 31, 2008, Marc Garlasco of Human Rights Watch said **30** civilian deaths are acceptable to the military to kill one “high value asset.”

The U.S. does not comment on the CIA drone war in Pakistan, but efforts are made to keep track of drone attacks in North and South Waziristan in the Federally Administered Tribal Areas (FATA) of Pakistan. *The New America Foundation's* “Drones Database” reports **263** drone attacks in Pakistan from 2008 to Jul 2011 [25]. From data collected from Pakistani media reports, hospitals and the internet, *Pakistan Body Count* says drone attacks have killed **2,451** people, including **1,004 to 2,046** civilians to Jul 2011 [26].

After taking office in 2009, President Obama escalated the secret drone war in Pakistan. Drone air strikes rose sharply from 53 in 2009 to **118** in 2010. The *New America Foundation* reports at least **54** drone strikes so far in 2011. From 2009 to Jul 2011 President Obama has authorized **225** drone strikes in Pakistan [27].

“Their bodies, carbonized, were fully burned. They could only be identified by their legs and hands. One body was still on fire when he reached there. Then he learned that the charred and mutilated corpses were relatives of his who lived in his village, two men and a boy aged seven or eight. They couldn’t pick up the charred parts in one piece.”

-Told by Pakistani Journalist Safdar Darwar to
Kathy Kelly and Josh Brollier [28]

On Mar 17, 2011, a drone air strike killed up to 40 people in Datta Khel, North Waziristan, sparking anti-American demonstrations around Pakistan. A top Pakistani general claimed the Predator targeted “a peaceful meeting of tribal elders” and said that attack was a “flagrant violation of all humanitarian rules and norms.” On Apr 22 a drone attack struck a “militant guesthouse” in Hasan Khel in North Waziristan killing 25 people, including seven women and children.

On Jun 6, 2011, 24 civilians were killed in a drone strike in Shwal Tehsil in North Waziristan. On Jul 12 four separate drone strikes in North and South Waziristan killed 54 “suspected militants,” the second largest death toll in a single day in the CIA drone war in Pakistan (an air strike in Jun 2009 killed 70 people in South Waziristan).

*“The drones are fomenting hatred against the government
and turning people against America.”*

-a doctor in Waziristan

According to Pakistan Body Count, drone attacks in Pakistan have killed **1,004** to **2,046** civilians [29]. A recent Pew poll found **97%** of Pakistanis oppose drone attacks in Pakistan and a public opinion survey in FATA by the New America Foundation reported **75%** think bombing U.S. military forces is justified. Pakistani lawyer Mirza Shahzad Akbar is suing the CIA for wrongful death and injury in the killing of innocent civilians by CIA drones. Tensions peaked in July 2011 when the U.S. slashed military aid to Pakistan and Pakistan evicted the U.S. from its Shamsi drone base in Baluchistan.

YEMEN

Exploiting the armed struggle to topple the government of Ali Saleh, President Obama is exporting another CIA drone war to Yemen, targeting Al-Qaeda in the Arabian Peninsula (AQAP). U.S. Special Operations (JSOC) has been on the ground coordinating daily drone attacks against AQAP, and 15 drone strikes were confirmed in the first two weeks of June 2011. The deputy governor of Abyan Province said 130 people had been killed in the attacks, including many innocent civilians [30]. Drone attacks into Yemen will likely come from Djibouti or a secret drone base being built in the proximity of Yemen, possibly a new CIA counterterrorism training base in Somalia.

Drones are especially targeting U.S. born cleric Anwar al-Awlaqi whom the United States considers to be a terrorist threat. Placing al-Awlaqi on the CIA's "kill list" for targeted assassination by armed drones poses serious legal and moral questions for U.S. foreign policy.

Al-Awlaqi escaped a recent drone attack on May 5, 2011, but according to the Center for Constitutional Rights, al-Awlaqi "reportedly has been the target of as many as a dozen missile strikes in Yemen already." One U.S. air strike on Dec 17, 2009 killed 41 civilians, mostly women and children, leading to street protests denouncing the deaths of innocent civilians [31]. Another air strike in May 2010 mistakenly killed an envoy of President Saleh and an unknown number of other civilians.

LIBYA

Armed Predator drones are also flying in the skies of Libya, providing most of the intelligence, surveillance and reconnaissance (ISR) for 50 NATO bombing missions every night and firing Hellfire missiles at Libya's military forces [32]. It is likely U.S. drones are assigned to assassinate Libyan President Moammar Gaddafi.

President Obama describes the U.S. involvement in Libya as "limited." However, Secretary of State Clinton confirmed recently that "Even today, the United States continues to fly 25 percent of all sorties" [33]. As of the end of July, armed U.S. drones have flown at least **1,500** ISR and combat missions against Libya's armed forces.

Because U.S. drones are targeting Col. Gaddafi's forces in areas near civilian populations, Predator air strikes contradict the U.N. mandate to protect civilians. Congress is also increasingly uncomfortable that drone air strikes in Libya – the first on Apr 23, 2011 – violate the War Powers Act of 1973 that requires congressional authorization for U.S. involvement in any armed conflict lasting longer than 60 days.

A bipartisan group in Congress, led by Rep. Dennis Kucinich, is challenging President Obama's authority to order military action in Libya without congressional approval. Considering that NATO's air war against Libya depends on U.S. drones, it is astonishing for President Obama to say that Libya “does not rise to the level of hostilities,” and that the deployment of armed drones is not military action.

SOMALIA

A drone-targeted killing on Jun 23, 2011, and three more missile strikes in July against the Somali military group al-Shabab make Somalia the sixth Arab country where Reaper and Predator combat drones are bombing and killing people. Stepping up the drone assassination offensive in Yemen and Somalia sets the stage for a new CIA-led counterterrorism strategy throughout the Southwest Asia-East Africa region.

A new CIA training base in Mogadishu, Somalia (reported by Jeremy Scahill in *The Nation*, Aug 1, 2011) is likely the secret CIA drone base for drone attacks against Yemen reported earlier by the *AP*. Previous drone strikes in Yemen were launched from Djibouti. Exporting to Yemen and Somalia the Pakistan model of unrelenting missile attacks from Predator and Reaper drones targets al-Shabab, AQAP and any groups suspected of having ties to al-Qaeda. As in Pakistan, the U.S. government will not comment on civilian casualties. Secrecy and a new drone killing campaign in Yemen and Somalia will constitute U.S. foreign policy throughout the region.

Command and control of drone ISR and combat patrols in Yemen and Somalia is a maze of secrecy and decision-making is murky at best. Drone operations are carried out by the Joint Special Operations Command (JSOC), but the CIA controls the flow of drone communications. Various military units, intelligence groups and ground control stations coordinate targeting data, while private security contractors are also involved in day-to-day drone operations.

The Obama Doctrine allows JSOC and the CIA to conduct drone strikes and targeted killings in any country where the U.S. perceives a terrorist threat. This killing campaign will soon include more heavily armed drones, including sea-based drones, and a growing number of drone bases will give the U.S. the capability to conduct secret special operations at will over vast expanses of land and sea ***and outside of any accountability or international law.***

The Debate over Civilian Deaths

The DRONE report argues that killing civilians is a war crime, targeting killing by armed drones is a criminal act that results in high civilian loss of life, and many hundreds of civilian deaths result directly *or indirectly* from drone ISR and/or lethal missile attacks.

This report lists only a few of the reported incidents in which innocent civilians, mostly women and children, have been killed in drone air strikes. These examples are still too many, and Gen. Petraeus only states the obvious when he says each death is “a tragedy for the family involved.” Who can imagine the grief of seeing your children blown apart by a Hellfire missile, a child's body parts still hot and charred in the smoldering wreckage of what was once a home.

The number of civilian deaths from U.S. drone strikes is controversial. Statistics are complicated by accuracy of reporting, variety of information sources, and interpretation of data. For example, the *New America Foundation* (NAF) and *Pakistan Body Count* (PBC) use many of the same news sources, but publish widely divergent figures.

Most disagreement hinges on counting *militants*: when reporting casualties, the U.S. military is inclined to regard a military aged male (MAM) in local dress with or without a weapon as a “*suspected*” militant. In Afghanistan and Pakistan, this profile could describe any shepherd, shopkeeper or farmer. Conversely, PBC is criticized for including Taliban in *civilian* casualties “...unless it's a leading figure whose death is celebrated as martyrdom by militant groups themselves” (Demystifying the Drone,” Shahid Saeed) [34]. The *Conflict Monitoring Center* (CMC) concludes that drone strikes in Pakistan have “turned into mass killings of suspected militants.” Dissimilarities in drone databases can be seen in these statistics for the drone air war in Pakistan:

<i>Drones Database</i>	<i>Drone Strikes</i>	<i>Civilians Killed</i>
New America Foundation Peter Bergen/Kathleen Tiedmann	267 (to Aug 2011)	293 to 471
Pakistan Body Count Dr. Zeeshan Usmani	237 (to Jul 2011)	1,004 to 2,046
Conflict Monitoring Center	228 (to Jan 2011)	2,052

A database for civilian casualties in Afghanistan can be referenced in *Wikipedia-Civilian Casualties Caused by ISAF and US Forces in the War in Afghanistan* that compiles reports from Human Rights Watch (HRW), United Nations Assistance Mission in Afghanistan (UNAMA), Associated Press (AP), and other media, Afghanistan, NGO, and independent information sources. From 2006 to 2011, nearly **1,600** civilians have been killed in U.S. **air attacks** in Afghanistan:

<i>Source/Date</i>	<i>Civilian Deaths (air strikes)</i>
HRW/2006	116
HRW/2007	321
UNAMA/2008	552
UNAMA/2009	359
UNAMA/2010	171
UNAMA/2011 (to Jul 2011)	<u>79</u>
	1,598

Wikipedia estimates *total* civilian casualties in Afghanistan between **14,000** to **34,000**. According to the *LA Times* and the Project on Defense Alternatives (PDA), from Oct 2001 to Jan 2002, between 1,000-1,300 civilians were killed in U.S. air strikes in Afghanistan following 9/11 (Prof. Marc Herold counted 3,000-3,400 civilian victims from Oct 2001 to Mar 2002 [35], and Jonathan Steele of the *Guardian* gave a figure of 20,000 civilian casualties for 2001-2003). Estimates of **total** civilian deaths in Afghanistan include:

<i>Source/Date</i>	<i>Civilian Deaths (Total)</i>
PDA/2001-2003	4,200
AP/2004-2005	1,700
HRW/2006	1,000
UNAMA/2007	1,523
UNAMA/2008	2,118
UNAMA/2009	2,412
UNAMA/2010	2,777
UNAMA/2011 (to Jul 2011)	<u>1,462*</u>
	17,192

* **368** civilian deaths in May 2011 was the deadliest month for civilians since 2007.

The Resistance

*“Who has given the license to kill and in what court?
What kind of democracy is America where people do
not ask these questions?”*

-Safdar Darwar, Pakistani Journalist

Peace activists are asking why so many people are dying in U.S. air attacks in Pakistan and Afghanistan, and why the American people are not demonstrating outrage at such deplorable loss of life. Over **19,000** civilians have lost their lives, either directly or indirectly attributable to the U.S. military occupation of Afghanistan and drone air war in Pakistan [36]. Some estimates claim between **14,000-34,000** civilian casualties in Afghanistan alone [37]. As of Aug 2011 more than **1,745** U.S. GIs are dead, *not including* more than **1,760** civilian “contractors” (mercenaries) [38].

“Ground the Drones”

On April 9, 2009, Creech AFB was surprised when 14 peace activists walked through the main gate to “break bread and dialogue” with drone flight crews inside. On April 22, 2011, 37 protesters were arrested in a peace action against drone warfare at Hancock Field in Syracuse, NY. Nonviolent resisters want the drone controllers to think about the horrific death and destruction they are raining down on people thousands of miles away and to contemplate that their bombs do not prevent or eliminate terrorism, but instead incite more hatred, revenge and retaliation, and make more recruits for the Taliban.

At a trial that took place in Las Vegas, NV, the “Creech 14” made the point that unlike the robust public debate around the A-bomb after 1945, the insidious creep of robotics into warfare is going generally unnoticed in the arena of public discussion. Yet, drones have become a devastating new weapon resulting in a deplorable loss of life in Arab countries under U.S. military domination.

The Creech 14 and Syracuse 37 have good reason to resist drone warfare as neither legal nor moral, and their nonviolent direct action is witness that people of good conscience have a duty to raise public awareness about drones. In the spirit of Martin Luther King, the Creech 14 and Syracuse 37 intend to dramatize the issue so that it can no longer be ignored. Only dialogue and human interaction, negotiation and diplomacy, not surveillance and bombing by robots, will ensure a more peaceful future for all of us.

Colonel Khadafy “violates international norms and every standard of human decency.”

-President Obama, Mar 23, 2011

The U.S. air war is “unacceptable and contrary to fundamental humanitarian laws.”

-Pakistani Gen. Kayani, Mar 23, 2011

President Obama disappointed peace activists when he not only doubled the number of drone air strikes in Pakistan, but also embraced the policy of *targeted killing*, the extrajudicial execution of specific persons, or “*high value assets*.” Executive Order 12333 (1981) said the U.S. government shall not engage in assassination, but was rescinded after 9/11. Drones were the perfect assassins, capable of finding and then striking a human target with a “precision” bomb. But when drone strikes occur in urban areas near civilian populations, it is not likely that a drone will minimize civilian casualties when a Hellfire missile leaves a crater *15 feet wide and 2 feet deep!* [39].

When drone strikes intensified in North and South Waziristan in 2009, two studies from the New America Foundation and the Brookings Institute found between **33%** and **90%** of deaths in drone attacks were civilians [40]. As analysts debate the controversy over civilian casualties, peace activists noted that news stories usually report that, disproportionately, civilian casualties are *women and children*. It is reasonable to conclude that the number of civilians killed in drone air strikes is much higher than is usually reported because *any military aged male is most likely considered a militant*.

Peace activists have a reasonable belief that the well-documented and grievous loss of human life from targeted killing by drones is a war crime explicitly prohibited by international and humanitarian law. Attacks against civilians are war crimes according to the *Universal Declaration of Human Rights*, the *Geneva Conventions (Art. 3)*, the *Nuremberg Tribunals*, the *Torture Victims Protection Act of 1991*, and the *War Crimes Act* adopted by Congress in 1996. Yet, no U.S. court has ever ruled on the legality of targeted killing by drones.

Peace activists are reasonable to believe that individuals have the right, the responsibility and the duty, under the Nuremberg principles, to resist crimes against humanity. It was important to deliver the message to drone flight crews at Creech AFB that they also have the right and the duty to disobey orders to carry out targeted killings that could cause innocent people to lose their lives.

“It is our responsibility to escalate the level of risk we’re willing to take in nonviolent direct action to confront the militarists.”

-Kathy Kelly

Drones are the frontline in confronting militarism today. Military technology is speeding headlong toward autonomous weapons systems on land, sea, air, and space. From mini-bots and micro air vehicles to combat drones, high altitude airships and self-landing spacecraft, generals predict that future wars will be fought with “tens of thousands” of drones.

Peace activists understand the fallacious reasoning of robotic warfare: Drones make it politically convenient to order military actions without risking American lives, thereby making it easier and more tempting, to start or become involved in wars. As Human Rights Watch pointed out in a letter to President Obama, justifying drone attacks as part of a “global armed conflict” sees the world as one big global battlefield [41]. Allowing drones to set legal and moral norms for the rest of the world is a dangerous precedent.

Nonviolent direct action campaigns to raise public awareness about drones began at Creech AFB, NV in 2009. In 2010 drone protesters converged on the CIA in Langley, VA, and at General Atomics in San Diego, CA, and Ft. Huachuca, AZ. In 2011 drone resistance actions took place at Davis-Monthan AFB, AZ, Hancock Airfield in Syracuse, NY, and Beale AFB, CA. As drone air strikes continue to escalate with a mounting civilian death toll, and by sending Predators and Reapers into direct combat in Yemen and Libya, drone protests can be expected to spread to other Predator and Reaper ground control bases around the country. Groups organizing vigils and nonviolent drone resistance actions include:

Code Pink	codepinkalert.org
Nevada Desert Experience	nevadadesertexperience.org
Peace Resource Center of San Diego	prcsd.org
The Nuclear Resister	nukeresister.org
Upstate (NY) Coalition to Ground the Drones	
upstatedroneaction.peaceworksrochester.org	
Veterans for Peace	veteransforpeace.org
Voices for Creative Non-Violence	vcnv.org

The Future

*“We’re going to make more, we’re going to make them better,
and we’re going to employ them more. That’s the future.”*

-Gen. Robert Behler, USAF

The drone wars in Afghanistan and Pakistan are driving development of new military-related drones that will be bigger and smaller, fly faster and higher, and stay in the air longer (“persistence”). All manner of remote-control flying machines are rapidly filling the air, from robotic flapping wing insects to 300-foot airships. Combat drones will be “longer-loitering” while “robo-flies” will send surveillance video from inside a room. Solar-powered reconnaissance craft will be peering down from near space.

- Midget flying spies are mimicking the flight of birds and even insects, able to fly into small spaces with miniature cameras. The *Wasp III* is 1.25 ft. long and can fly 40-60 mph to 1,000-feet for 45 min. The 6 in. *Black Widow* can fly for 30 min. up to 600 feet and send back high quality video from a camera the size of a penny. The 6.5 in. *Hummingbird* is the world’s smallest flapping–wing drone.
- A disturbing new area of weapons development in hyperadjacent space is an initiative by the Defense Advanced Research Projects (DARPA) to develop Hybrid Insect Micro-Electro-Mechanical Systems (HI-MEMS), moths and beetles with embedded electronic chips. Pentagon-funded researchers at Harvard and Cornell have successfully inserted electronic surveillance devices into the pupa of insects which can then be remotely controlled once their metamorphosis is complete. [“Pentagon's Growing Appetite for Hyperadjacent Space”, Doug Holdread, *Space Alert*, Winter 2011]
- Northrop-Grumman’s 300-foot long hybrid-airship is under development to stay aloft 3-4 weeks up to 20,000 feet. The Long-Endurance Multi-intelligence Vehicle (LEMV) airship would carry a 3,500 lb. payload of surveillance sensors, including radar to detect and track roadside bombers. The airship is scheduled to be deployed to Afghanistan at the end of 2011.
- The 72-foot span, 110-lb. solar-powered Zephyr is designed to stay aloft at up to 60,000 feet for three months. Boeing and the Defense Department are designing the solar-powered Vulture to stay aloft in the stratosphere for five years. The Helios is another solar-powered contraption with a 247-ft. span and 14 propellers to stay aloft up to 100,000 feet.

- Autonomous flight is the future direction of drone technology: in 2011, a Global Hawk “tanker” will demonstrate autonomous aerial refueling of another Global Hawk. The *X-47B* UCAV will be self-landing on an aircraft carrier in 2013 and will also demonstrate autonomous aerial refueling in 2014. Technologies are being developed that would allow combat drones to “negotiate” with each other so a group of drones could be assigned a target and then coordinate themselves. [*Aviation Week & Space Technology*, Jul 5, 2010]
- The *X-37B Orbital Test Vehicle* (OTV) is a reusable spaceplane that is launched into orbit and then *autonomously* re-enters and lands itself. The first X-37B spy drone was in orbit 224 days and self-landed at Vandenberg AFB in Dec 2010. The OTV is linked to the secret operationally responsive space (ORS) program that peace activists suspect is part of U.S. military preparations for space war. A second X-37B OTV will be launched in the spring of 2011. [*Aviation Week & Space Technology*, Dec 13, 2010]
- The U.S. Air Force envisions “human performance augmenting technology” to keep pace with autonomous aircraft that fly themselves. “*Brainwave coupling*” will speed up the interaction of man and machines using eye readers to measure activities in the brain and then tells computers what the operator *subconsciously* wants to see or do (from “*Technology Horizons*,” a 150-page report envisioning what technologies the Air Force will be funding in 2030). [*Air Force Magazine*, Jan 2011]
- Other new communications technologies are trying to find new ways to process the flood of ISR electronic data from increasingly sophisticated sensors carried on an increasing number of drone patrols: the Manned Unmanned Systems Integration Concept (Music) replaces voice communications with “machine-to-machine” communications links that enable piloted aircraft to take direct control of unmanned drones. Triclops allows three separate sensors on one drone to be controlled by a piloted aircraft, a ground unit, and a drone controller. [*Aviation Week & Space Technology*, May 23, 2011]
- Military planners are also increasingly infatuated with the notion of optionally-manned drones: Northrop Grumman's *Firebird* is an optionally-piloted combat UCAV that enables it to overfly commercial and densely populated air space, most notably the national air space (NAS) of the U.S. Of particular concern is the Pentagon's commitment to spend \$3.7 billion between 2012-2016 on a new optionally-manned and ***nuclear armed*** long-range bomber. [*Aviation Week & Space Technology*, Feb 21, 2011]

The Questions Drones Can't Ask (*But Humans May*)

1. What does it mean to be human?
2. Do drones enhance or erode our humanness?
3. What drives the development of drones? Compassion? Fear? Love? Hate?
4. How will we react when drones drop bombs in our neighborhood?
5. What questions about the use of drones are suggested by these scriptures?
 - “Do unto others what you would have them do unto you.”
 - “Those who take the sword will die by the sword.”
 - “Whatsoever a man (nation) sows that will he (it) reap.”
6. When will we ever learn what makes for peace?

A Better Way to Peace (*Tune: Mine eyes have seen...*)

Mine eyes have seen the horror of the bombs dropped from our drones
They rain terror on the Afghan people and on Pakistan
We must stop this senseless killing
Ground the drones and stop the bombs
There's a better way to peace.

Ground the drones and stop the bombing!
Ground the drones and stop the bombing!
Ground the drones and stop the bombing!
There's a better way to peace.

With computers at Creech Air Force Base they guide these deadly planes,
Watch the body parts go flying, wish the children weren't there.
They can't hear the cries of anguished families
Picking up remains.
There's a better way to peace.

Ground the drones.....

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Addenda

September 1, 2011

1. *Global Hawk, "the Escalade of drones"*

The Air Force scaled back its acquisition of Northrop Grumman's *RQ-4 Global Hawk* from 77 to 55, a price of **\$218 million** per drone (compared to \$28 million for the MQ-9 Reaper). In ten years costs have more than doubled from \$5.3 billion for 63 drones to **\$12.4 billion** for 55 Global Hawks. The Navy will buy another 68 *MQ-4C Global Hawks* for **\$11 billion**.

The Global Hawk is the first High Altitude/Long Endurance (HALE) drone and will replace the legendary *U-2* spy plane by 2015. The Global Hawk flies 24-hour missions over a range of 10,000 miles and can send video imagery from above 60,000 feet to ground stations anywhere in the world. By Jan 2011 the Global Hawk had flown 35,000 combat hours over Iraq and Afghanistan. According to the *Air Force Times*, one Global Hawk flight costs **\$35,000 per hour**.

Sources:

Air Force Times, Dave Majumdar, Aug 10, 2011.

Bloomberg News, "Northrop's \$12.4 Billion Global Hawk Still Vital, Pentagon Says," Roxana Tiron, Jun 15, 2011.

New York Times, "Costly Drone is Poised to Replace U-2 Spy Plane," Christopher Drew, Aug 2, 2011.

2. *Drone War Exposed - the complete picture of CIA strikes in Pakistan.*

The Bureau of Investigative Journalism based in London released a new drone database on Aug 10, 2011, describing its report as "the most complete picture yet" of the CIA drone war in Pakistan. The report cites **1,842** people killed, including **160** children, since President Obama's escalation of drone air strikes in the North and South Waziristan tribal areas of Pakistan.

The *Bureau* drone database is a comprehensive and well researched effort by British and Pakistani journalists and lead reporter Chris Woods. What stands out is that the Bureau's drone strike casualty figures generally agree with statistics presented by Peter Bergen and Kathleen Tiedmann in the *New America Fountation's* drone database, but do not even reference findings of the drone database compiled by Dr. Zeeshan Usmani's *Pakistan Body Count*.

A comparison of drone databases for Pakistan includes:

<u><i>Drones Database</i></u>	<u><i>Total Drone Strikes</i></u>	<u><i>Obama Drone Strikes</i></u>
New America Foundation*	267	225
Bureau of Investigative Journalism#	294	242
Pakistan Body Count+	237	199

<u><i>Drones Database</i></u>	<u><i>Total People Killed</i></u>	<u><i>Total Civilians Killed</i></u>
New America Foundation*	1,650 - 2,588	293 - 471
Bureau of Investigative Journalism#	2,303 - 2,873	388 - 779
Pakistan Body Count+	1,263 - 2,451	1,004 - 1,046

* To Aug 17, 2011

To Aug 10, 2011

+ To Jul 5, 2011

Sources:

New America Foundation [www.counterterrorism.newamerica.net/drones]

Bureau of Investigative Journalism [www.thebureauinvestigates.com]

Pakistan Body Count [www.pakistanbodycount.org]

Ground the Drones...

Lest We Reap the Whirlwind

**A witness in the desert that peace will come through love
and not through predators armed with hellfire.**

Creech Air Force Base is home to the latest high tech weapons that use unmanned aerial systems (UASs) to carry out surveillance and increasingly lethal attack missions in Pakistan, Afghanistan and Iraq.

The idea that technology can provide a cleaner and safer battlefield is seductive but has been proven a lie. From the catapult and crossbow, through the use of poison gas and airplanes in World War I, the atom bomb, helicopters and napalm in Vietnam to the “smart bombs” of the Gulf War, war has only grown deadlier. Technological advances may reduce the danger of casualties among the military personnel in the short run, but with each advance the number of civilian deaths multiplies and every war of the past century has numbered more children than soldiers among its victims.

Proponents of the use of UASs insist that there is a great advantage to fighting wars in “real-time” by “pilots” sitting at consoles in offices on air bases far from the dangerous front line of military activity. With less risk to the lives of our soldiers and hence to the popularity and careers of politicians, the deaths of “enemy” noncombatants by the thousands are counted acceptable. The illusion that war can be waged with no domestic cost dehumanizes both us and our enemies. It fosters a callous disregard for human life that can lead to even more recklessness on the part of politicians.

With audacity that would confound Orwell, the Pentagon touts the “true hunter-killer role” of these robot “drones.” Armed with “Hellfire” missiles and other weaponry, they have names that suit their lethal uses: the MQ-9 “Reaper” and the MQ-1 “Predator.” Such tools can kill but not pacify. By killing civilians, UAS drones do not prevent or eliminate terrorism, but instead incite more violence and retaliation.

We wait in vigil at the gates of Creech AFB to witness that peace will not come through the work of predators armed with hellfire. Antagonisms against the U.S. in Pakistan, Afghanistan and Iraq will be reduced when we actively respond to the reality of the poverty and lack of infrastructure revealed to us by the drone's own surveillance

cameras. Human interaction, negotiation, diplomacy and dialogue, not surveillance and bombing by robots, will ensure a more peaceful future at home and abroad.

People of all faiths are invited to gather from April 1-13 in the Nevada desert, sacred land stolen from the Western Shoshone. Our vigil marks the holy days of Passover and the last days of Lent, the season in which the Christian Church commemorates Jesus' struggle of forty days with demons in the desert. We come to this desert parched and thirsty – with intention to act as the winds and breath that will erode and sculpt the structures of war into thirst-quenching rivers. We come to confront and resist our own high tech demons. On Good Friday, the day of Jesus' execution by the Roman Empire, we act nonviolently in solidarity with the victims of our own empire.

Vigil sponsors include Voices for Creative Nonviolence, Nevada Desert Experience, the Des Moines Catholic Worker, Strangers and Guests Catholic Worker Farm, Prescott (AZ) Peace Action, Catholic Peace Ministry, Iowa Peace Network, Pace e Bene Nonviolence Service.

Flyer for the nonviolent drone resistance action at Creech AFB on April 9, 2009.