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cultural geographies in practice

Late September at an undisclosed location in the Nevada desert

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I'm sitting in a lawn chair on a dusty desert mountain overlooking Nevada's Tikaboo Valley, watching the horizon and listening to the constant chirp of three radio scanners tuned to military frequencies. I began photographing and monitoring America's collection of 'secret bases' about four years ago, and although the silence and isolation you experience on these mountaintops has become familiar, I am continually amazed by the amount of activity that you perceive when you have the patience to do so.¹ Each car driving along the desolate highway 375 below us is an event, as are the plumes of dust kicked up by trucks on dirt roads criss-crossing the desert. In the lawn chair next to me is a man who asked me to use the name 'Lobo Solo'

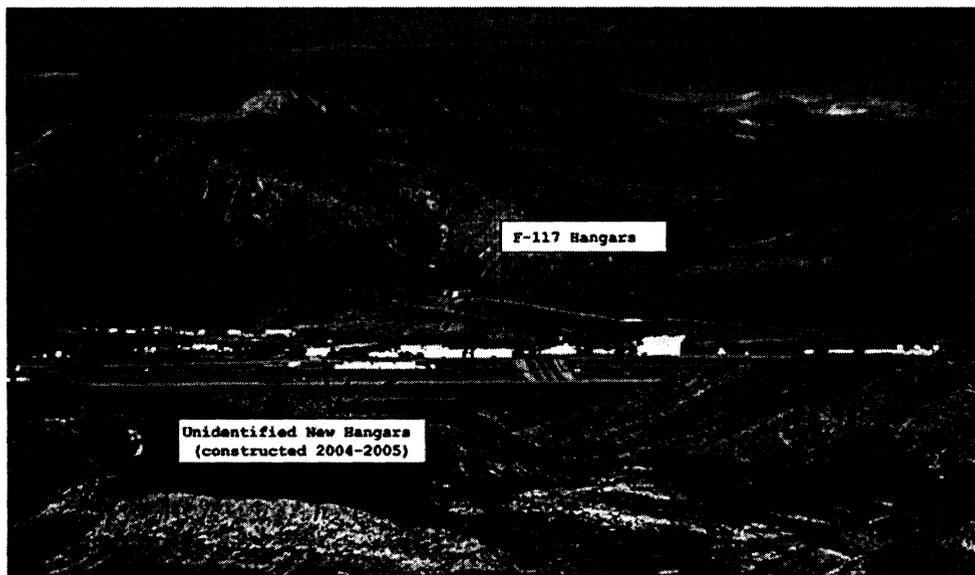


when referring to him. Like some of the other people who spend their time exploring the military's most secret landscapes, Solo tries to find a fine line between making the information he intercepts and interprets available to the public and avoiding becoming a public figure himself. To get to this particular spot, we've driven over almost 16 miles of abandoned mining roads to a place where Solo has stashed a collection of antennas custom-built to collect radio signals from a base that the US Air Force has only acknowledged as an 'operating location near Groom Lake'. In the popular mind, the hidden base to the west

is called 'Area 51', and it's famous for the fact that, as far as the Air Force is concerned, it 'does not exist'.²

The scanners are buzzing with activity this morning. 'Foxy 93, you are cleared for departure, Runway 14. Bird Watch Low.' Groom Lake's control tower gives lazy instructions to an unseen aircraft. 'Foxy is the code name this month,' explains Solo. 'Because Groom Lake "doesn't exist," they do all sorts of silly things to make it seem like this is all just regular air traffic. But everyone knows what they're up to.' Solo says that the 'Foxy' call signs we've been hearing all day are members of the Janet Fleet – a fleet of unmarked Boeing 737s and Beechcrafts that shuttle anonymous workers between Las Vegas, Palmdale, Edwards Air Force Base, the Tonopah Test Range, Groom Lake and other 'operating locations' around the south-west. Because the Janets are civilian planes (or at least pretend to be), they broadly obey civilian flight rules, which allows people like Solo to keep tabs on them.

Groom Lake was built in 1955 as a 'temporary' airstrip to test the CIA's top-secret U-2 spyplane, but it has grown to giant proportions over the past half-century. And as we sit listening to a constant stream of 'Foxy' 737s taking off and landing at intervals as short as those of major airports, I begin to confirm something that I'd suspected earlier in the summer when I spent a week watching the Janets from a different mountaintop. Groom Lake is not a small and remote test site where handfuls of military engineers test their next-generations prototypes. With thousands of people working at the site, one of the longest runways in the world, numerous buildings and hangars beneath 440 square miles of restricted airspace, and an aircraft control tower handling a seemingly endless parade of flights on both military and air bands, Groom Lake is, in fact, a city. Moreover, this secret base in the middle of the Nevada desert is a kind of global city. And if the paradigmatic 'global cities' like New York or Tokyo involve agglomerations of global



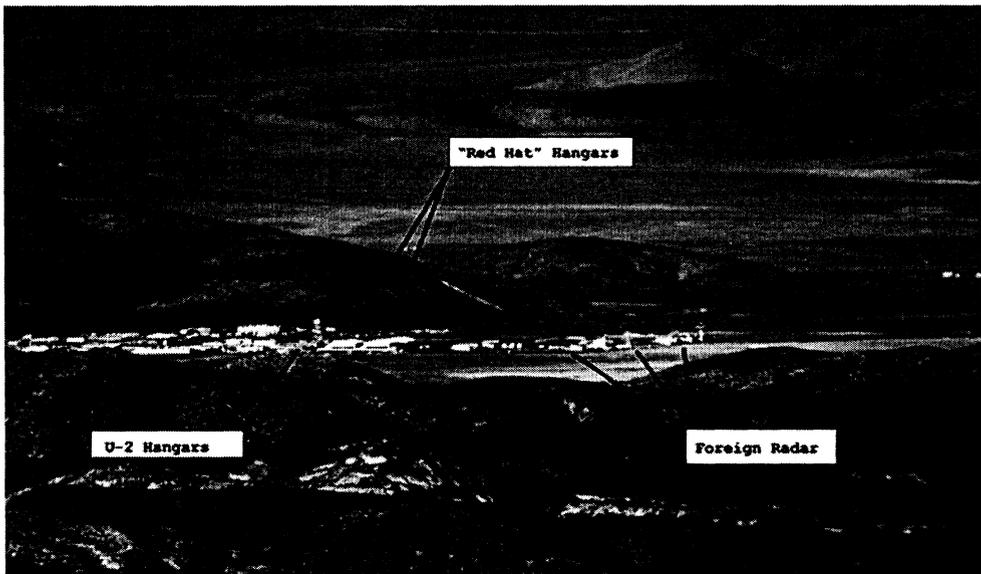
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financial and managerial power,³ Groom Lake – a site devoted to developing global military capacities – is one of their shadowy counterparts.

The previous day, Solo and I had climbed Tikaboo Peak, the only mountaintop offering a ‘taxpayer’s’ view of Groom Lake. The ascent is quite a hike, particularly if you’re not in very great shape. And if you’re carrying a full backpack, water, food, tent, sleeping bag and, in the case of Solo and I, dozens of pounds of optics, it’s even harder. The optics, or ‘glass’ as pros like to call it, is heavy and fragile, making it particularly difficult to transport up the two miles of loose shale to our lookout point. But if you want to see the base (which is still 30 miles distant) you need a lot of glass.

From Tikaboo Peak, you can see the ‘operating location’ spread out over about seven miles on a north–south axis. Towards the northern section of the base, barely visible over a mountain shielding part of the base from view, are the steep triangles of the oldest buildings at the facility: a set of hangars that were built to house U-2 spyplanes in the mid-1950s. Behind the U-2 hangars and a little further to the north are another set of much larger vintage hangars: these are the ‘Red Hat’ hangars, which have housed the US inventory of Soviet fighters since the late 1960s. I’ve always thought that the U-2 and Red Hat hangars signify a kind of spiritual centre to the secret base. They are some of the oldest structures at the site, and they represent two themes that have been at the core of Groom Lake’s mission since its early years – two aspects of military hegemony. The U-2 was the America’s premier ‘stealth’ plane, and the Red Hat hangars housed America’s fleet of appropriated foreign aircraft. These two collections of hangars represent two themes that are central to the global military capabilities developed in the Nevada desert: stealth and appropriation.

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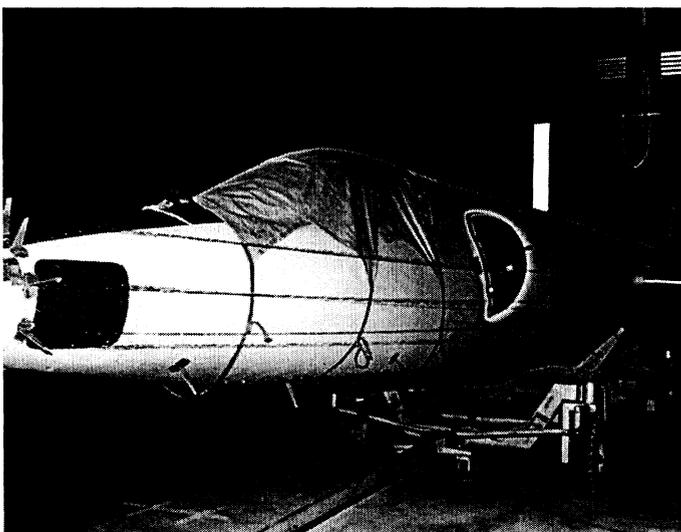


The CIA's U-2 project began in 1954 with a project codenamed AQUATONE. The 'article' (workers were told to never say the word 'airplane') was designed to overfly the Soviet Union, collecting strategic and tactical intelligence. Moreover, the design was meant to be undetectable and unstoppable. The U-2 philosophy towards stealth was based on achieving extremely high altitudes, which the CIA reasoned would protect the article from both radar and anti-aircraft weapons. They assumed that Soviet radar would not be able to detect an aircraft flying above 65 000 ft, an assumption based on the fact that the Soviets were using American-built radar (provided by a Lend-Lease programme during the Second World War), of which the CIA knew the limitations.⁴ The CIA's second assumption was that Soviet MiG-17 interceptors had a maximum altitude of 45 000 ft, making anything over 60 000 ft safe from enemy fire.⁵

With a contract from the CIA and a working design for the CIA's aircraft in hand, the head of Lockheed's Skunk Works, Kelly Johnson, instructed his chief test pilot, Tony LeVier, to 'find somewhere where we can test this thing in secret'.⁶ After cataloguing the dry lakes of the south-west, the U-2 team decided on Groom Lake as a place to build their secret airfield, and constructed 'Paradise Ranch' (as the Lockheed chief liked to call it) as an 'essentially temporary'⁷ testing and training site.

Soviet overflights began the following year, and the CIA quickly realized that the Soviets had improved upon the American-built radar. The Soviets easily tracked the U-2s, but were initially powerless to stop them.⁸ In response to this information, the CIA initiated Project RAINBOW in late 1956, which sought to reduce the radar cross section (RCS) of the U-2 by fitting the aircraft with anti-radar coatings and reflectors.⁹ A different kind of arms race had begun, but unlike the spectacle of nuclear missiles and global holocaust, stealth was about being unseen; it was about becoming invisible.

After building another stealthy CIA spyplane called OXCART during the 1960s, Lockheed's Skunk Works had acquired enough expertise with reducing RCSs that they were able to propose the world's first 'stealth fighter': a plane code-named HAVE BLUE that would evolve into the F-117A. The difference between this 'third generation' stealth concept and its predecessors was a revolution in design made possible by computers. By the mid-1970s, computers had become fast enough to predict RCSs of aircraft test shapes, making far more complicated (and far more stealthy) designs possible.¹⁰ Once Lockheed had developed a technique of



computer-aided stealth design, everything having to do with stealth (even the word 'stealth') was stamped 'Above Top Secret',¹¹ and a seemingly endless world of stealth machines began to fly at Groom Lake. To this day, almost all of them remain 'Above Top Secret'.

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On 12 August 1968, two Syrian fighter pilots on a routine training mission became lost, and landed on an airfield that they believed to be in Lebanon. When Walid Adham and Radfan Rifai realized that they had inadvertently landed in Israel, they both 'went white with shock', and were quickly taken away as POWs by the Israeli military. They may or may not have been tricked into landing by an Arabic-speaking Israeli.¹² When France ended military sales to Israel in the aftermath of the Six Day War, Israel turned to the US to supply weapons. The US was initially reluctant, but when Israel put the captured MiGs and other Soviet military hardware on the table, a deal was struck, the MiGs ended up at Groom Lake, and those involved in the project were warned that they would 'disappear' if they spoke about the MiGs.¹³

When the US acquired a small wing of Soviet MiGs to test against their own fighters and shipped them to Groom Lake, the theme of appropriation began at the base. Groom Lake was now not only a laboratory producing and testing invisible aircraft, it was also a place to test and overcome foreign military hardware.

After the first MiG showed up at the base, more and more foreign hardware began to arrive as well. By 1970, a collection of Soviet radar and electronic threats had accumulated in an area around 'Slater Lake', a pond on the north side of the base named after a former commander, and was evaluated under a programme codenamed HAVE GLIB. Expansions at Groom Lake were being built from military hardware secretly acquired from around the world.

As the US accumulated more MiGs and more foreign military hardware, the people who flew the MiGs and operated the electronic hardware formed their own squadrons. The 4477th Test and Evaluation Flight, the 'Red Eagles', was formed in 1975 to use the



MiGs in order to develop tactics against them, and the group soon evolved into an entire squadron. Two years later, the same year that Lockheed tested the first stealth fighter prototype (HAVE BLUE), the Air Force created another squadron, the 'Red Hats', to test-fly foreign aircraft.

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In this secret landscape of stealth and appropriation, the base at Groom Lake becomes both the subject and object of the military power that it produces – a top-secret pre-enactment of future wars. When stealth planes were (and presumably still are) flown against the base's collection of foreign aircraft and radar, base workers are put in an uncomfortable position. To test their efficacy against defence systems from around the globe, prototype stealth planes simulated attack runs against the base that they had just taken off from. Encounters between the two types of programme at the base made workers' nervous



enough when they involved unproven experimental aircraft, but we can only imagine what went through the workers' heads when the Air Force launched a collection of prototype stealth cruise missiles against the base in a project whose codename inevitably suggests various combinations of bliss and gore: SENIOR PROM.

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With the fall of the Soviet Union, the secret base at Groom Lake was not abandoned as an anachronistic relic of the Cold War. In fact, the stealth fighters built in the 1970s and early 1980s only made their public debut *after* the Cold War, when six F-117As dropped the first bombs in the US invasion of Panama. In the aftermath of the first Gulf War, they became icons of George H.W. Bush's 'New World Order'. Throughout the 1990s and into the present, the base at Groom Lake has continued to grow and grow, with the combination of stealth weapons and appropriated hardware creating a microcosm of global military power hidden in the Nevada desert.

We know very little about the programmes conducted at Groom Lake since the late 1970s, but we do know that the themes of stealth and appropriation have persisted as central to the activities at the base, and that those themes have become increasingly formalized. Some time during the 1980s, the Air Force created a squadron unique in its lack of a numerical designation. The 'Special Projects Flight Test Squadron' appears on workers' résumés as the 'nation's only classified flight test



squadron'.¹⁴ Members of this secret squadron wear patches featuring the sigma symbol, representing both the cultural and radar signatures that they seek to achieve in their operations: zero.

The Red Hats were deactivated in the early 1990s (subsumed by the Air Force's Electronic Warfare Directorate), but Groom Lake is still home to plenty of foreign 'birds'. In 1997, the US bought 21 MiG-29s from Moldova,¹⁵ and plane-spotters have taken numerous pictures of SU-27s flying above the

base. These planes are flown by a newer version of the Red Eagles, now called Detachment 2 of the 57th Fighter Wing. On their patches, they still wear an image of a red eagle.

Somebody is using the call-sign 'Eagle' on a military frequency this morning, and we hear it talking to the Groom Lake tower as it practises a set of simulated flame-outs (SFOs) over the base. 'SFOs aren't anything special,' says Solo, providing periodic commentary on the cryptic radio transmissions, 'they're a standard proficiency training exercise that pilots have to do to stay current. Whoever that is, he must be based at Groom.' We speculate about whether our 'Eagle' might be a reference to an F-15 (nicknamed the Eagle), a MiG (referencing the Red Eagles), or something different altogether.

As the day wears on, Solo and I hear a series of 'tests' that a group from Los Alamos is conducting at the Nevada Test Site in the valley just beyond Groom Lake. There are a series of countdowns: 'T-minus three minutes...' We half-expect to be blinded at any moment by an apocalyptic flash of light. But the tests keep getting delayed. On the Groom Lake civilian frequencies, a 737 pilot on approach accidentally identifies himself as 'Janet' rather than the 'Foxy' code-name-of-the-month. 'They mess up all the time,' says Solo.

To pass the time, I create a little exercise for myself and begin to count the number of cars coming in and out of the base. They're easy to spot by the amount of dust that they kick up as they drive along the dirt road, disappearing into the horizon. After about an hour or so, I conclude that there is about twice as much traffic on the dirt road as there is on the highway below us.

Notes

- ¹ All of my work involves finding multiple forms with which to represent a given topic. For my current project on secret military bases in the US, I have been preparing a photography exhibition, several museum installations, and 'how-to' information in addition to more traditional written material. For the past several years, I have also led a series of expeditions (open to the public) to mountaintops overlooking restricted military sites. By employing multiple media strategies, I create perspectives with which to 'see' more than the written word allows for on its own. See www.paglen.org. All the photographs in this essay are part of this work.
- ² The question of whether Groom Lake officially 'exists' or not has a complicated answer. The most detailed description that the Air Force has ever issued with regards to Groom Lake is as follows: 'We do have facilities within the complex near the dry lakebed of Groom Lake. The facilities of the Nellis Range Complex are used for testing and training technologies, operations and systems critical to the effectiveness of U.S. military forces. Specific activities conducted at Nellis cannot be discussed any further than that.' See 'Groom Lake exists: USAF', *Aviation week and space technology* **141** (3 Oct. 1994), p. 31. On the other hand, the Air Force maintains that 'Area 51' does not exist, and that the 'operating location near Groom Lake' has 'no name'. See Trevor Paglen, *Goatsucker* (MS, 2005).
- ³ See e.g. S. Sassen, *The global city* (Princeton, NJ, Princeton University Press, 1991), p. 6.
- ⁴ G. W. Pedlow and D. E. Welzenbach, *The CIA and the U-2 Program 1954-1974* (History Staff, Center for the Study of Intelligence, Central Intelligence Agency, 1998), p. 7.
- ⁵ *Ibid.*, p. 5.
- ⁶ B. Rich with L. Janos, *Skunk work* (Boston, Little Brown, 1994), p. 132.
- ⁷ The Department of Energy issued a press release on 18 May 1955 announcing the creation of an 'essentially temporary' facility adjacent to the Nevada Test Site. US Atomic Energy Commission press release, Las Vegas Field Office, LAV-55-16, 18 May 1955.
- ⁸ Rich, *Skunk work*, p. 145.
- ⁹ *Ibid.*, pp. 151–52.
- ¹⁰ B. Sweetman, *Lockheed Stealth* (St Paul, MN, MBI, 2001). p. 27.
- ¹¹ Rich, *Skunk work*, p. 40. I use the phrase 'Above Top Secret' to signify 'Top Secret – Special Access Required', which designates compartmentalized information.
- ¹² C. Peebles, *Dark eagles*. (Novato, Presidio Press, 1999) p. 222.
- ¹³ *Ibid.*, pp. 222–23. These 3 aircraft were actually not the first MiGs that the US had acquired. The previous year, a MiG-21F was tested at Groom Lake under a 1968 programme codenamed 'HAVE DOUGHNUT'.
- ¹⁴ See e.g. Col. J. A. Lanni's biography at <http://www.edwards.af.mil/units/bio/lanni-bio.html>. (accessed 10 Oct. 2005).
- ¹⁵ D. A. Fulghum, 'Moldovan MiG-29s to fly for USAF', *Aviation week and space technology* **147** (11 Nov. 1997), p. 37. Rumours persist in the defence community that Moldova was 'strong-armed' into the sale.