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**COMMENTARY**

# The Logistics Of The War In The Sahel

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There are both positive and negative aspects of waging a counter-insurgency war in the Sahel. The impediments are easy to see. The terrain of the Sahel does not lend itself to conventional warfare. There are broad expanses of sand and dunes, broken up by small villages and, occasionally, a town or city. There are no petrol stations, wells, repair shops, water stores, food stocks or fuel reserves in most of the region. Trucks and buses, as well as conventional armour, are difficult to transport in such a terrain. Air bases are usually suited only to small aircraft and lack the fuel and equipment which allow the free flow of cargo. African insurgents are bands and groups of often, irregular soldiers. On the positive side, the lack of ground cover and a tree canopy in the region enables a strategy of using the most modern weapons, the Unmanned Aerial Vehicles (UAV) which can seek out, observe and destroy small and mobile enemy forces. This has meant that the logistical demands of the war in the Sahel has generated a strategy of high-tech weaponry deployed by Western forces combined with African troops on the ground as garrison forces for towns and cities.

The Sahel is a region in which it is difficult to fight a war with traditional weapons. There are broad expanses of sand and dunes, broken up by small villages and, occasionally, a town or city. It is difficult to mobilise military forces there without a detailed regard for logistics. There are no petrol stations, wells, repair shops, water stores, food stocks or fuel reserves in most of the region. Trucks and buses, as well as conventional armour, are difficult to transport in such a terrain. Air bases are usually suited only to small aircraft and lack the scissor-tables, cranes, fork-lifts and loading equipment which allow the free flow of cargo. Long route marches across the desert are also out of the question.

This has meant that warfare in Africa has had to be expeditionary war. This is a polite way of saying that massed troop formations have no real use as there are few opposing forces of equal size to fight. Across Africa troops must pass through jungles, deserts, mangrove swamps and hostile terrain to get to the enemy, often under heavy fire from the bush. The enemy of the peacekeepers is rarely an army battalion of any strength. African insurgents are bands and groups of often, irregular soldiers. Large-scale troop concentrations can sit in a city or town and maintain order, but they rarely can take the battle to the enemy.

## Logistical Constraints

African armies have virtually no equipment which will allow them to fight an expeditionary war. This is a war of helicopters – in and out movement of troops to desert encampments or remote landing zones or the shooting up of ground formations by helicopter gunships when the enemy can be located.

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This is how African wars are fought. Except for rented MI-8 and MI-24 helicopters leased from the Ukraine and Russia, most of Africa is bereft of air mobile equipment. They are certainly bereft of African pilots (other than South Africans and a small band of Angolans and Nigerians).

There are very few African military aircraft capable of fighting or sustaining either air-to-air combat or performing logistics missions. Either they don't exist or they are in such a state of disrepair that African combat pilots are unwitting kamikazes. There are very few airbases in the bush which allow cargo planes to land safely when a war is on given that every rebel group has its share of rocket-propelled grenades (RPGs) and mortars. There are no fuel reserves at the airports outside most African capitals, and there are no repair facilities. There is no air-to-air refuelling, except that provided by foreign militaries. Indeed, except for Denel in South Africa and the main airbase in Ethiopia there are no places on the continent which perform sophisticated aircraft maintenance. There are few workshops which repair half-tracks, Jeeps or tanks. Even Western European armies themselves don't have sufficient helicopters or heavy-lift capacities. The Africans have less. This lack of transport is critical to moving out the wounded. This takes its toll on the soldiers.

This is mirrored in the lack of effective battlefield communications. In Africa the phone system doesn't work in peacetime; why should it work in a period of war? Sending orders and receiving information between the central staff and outlying units is a 'sometimes' process. It sometimes takes days to contact units operating far from command headquarters.

The logistical constraints on fighting within the Sahel region have contributed to the development of a different sort of warfare to cope with these constraints. The Sahel is unique in Africa in that it is so barren and a place where human activities are so widely scattered. The biggest factor in conducting a war in the Sahel is that, unlike in much of Central and Southern Africa, it has no canopy of trees and foliage which can block out visual access to the terrain of battle. It is difficult to mask human movements from observation from the air or from satellites. So, despite the logistical difficulties posed by maintaining forces on the ground to cover such a wide expanse of territory, the Sahel is observable from the air and vulnerable to sky-borne observational devices to discover where the concentrations of enemies are. As a result of the development of weapons systems in the wars in Afghanistan and Pakistan these observation platforms also are armed with weapons, missiles and bombs to attack these concentrations when they are discovered. Most importantly, this type of sky-borne counter-insurgency activity (e.g., drones) does not require the deployment of troops on the ground and the myriad logistical problems their presence engenders.

However, the need for these sophisticated weapons has meant that large amounts of materiel from outside Africa have been needed to be sent to the Sahel to supply the French or ECOWAS soldiers engaged in the fighting. This has meant that the forces in Mali and elsewhere have had to use large aircraft to bring in weapons, equipment and soldiers from Europe or North America. The French Operation Serval has used four Rafale Air, five C-135FR, one A310, one C130, three C-160 Transall, three Mirage 2000D, and a CN235 which have been based at N'Djamena, Chad; two Mirage F1CR, eight Gazelle, three Mirage 2000D, four Super Puma, three Tigre helicopters based at Bamako, Mali; and two Harfang drones based at Niamey, Niger; five French Navy's Atlantique II Maritime Patrol Aircraft based at Dakar, Senegal have been involved in intelligence, surveillance and reconnaissance. These are military planes. The French have chartered a Volga-Dnepr An-124 and an Il-76 with Belarus registration. The US Department of Defence (DoD) has been supporting the French operation with five C-17 Globemaster II cargo planes

(in addition to the same kind of plane dispatched by the Royal Canadian Air Force and by the UK's Royal Air Force). The Italian Air Force has committed two C-130J Hercules aircraft and one Boeing KC-767A tanker to Mali as well. Other heavy lifters are being provided by Germany, Denmark, Belgium, Spain, Netherlands and the UAE. The Nigerians have provided G222 Transport Aircraft as well as Alpha Jet and F7s. The United States has also provided RQ-1 and RQ-4B Global Hawk drones and the US Air Force is currently flying weaponised MQ-1 Predator drones over Mali.

## The Importance of Drone Technology

There are now several drone bases in Africa (**Figure 1**) with the ability to reach most of the areas in which counter-terrorism is undertaken.

While flying this type of military aircraft to and from the Sahel is effective, there is some question about its sustainability in terms of cost. These are very expensive planes to fly and the cost of the fuel alone is more than the total military budgets of several of the nations of the Sahel. It is clear that there has to be a change in plan for warfare in the Sahel which uses local African "boots on the ground" and the increased use of unmanned drones from bases in places central to the action, especially Niger. In February 2013 President Obama announced that the United States was setting up a drone base in Niamey, Niger and staffing it with 100 US military personnel. It is scheduled to eventually have around 300 US military stationed there and deploy additional Predators there under the aegis of United States Africa Command (AFRICOM).

Since US President Obama took office in 2009, the United States has relied heavily on drones, particularly in regions which resemble the terrain of the Sahel, in Afghanistan, Iraq, Pakistan, Yemen, Libya and Somalia. US drones also fly from allied bases in Turkey, Italy, Saudi Arabia, Qatar, the United Arab Emirates and the Philippines. The inescapable conclusion to the logistical problems which beset this type of warfare is that it is necessary to combine low-tech African soldiers to garrison cities, airports and strategic installations with high-tech unmanned Western drones and equipment to carry the war to the counter-insurgent forces. In order that a sustained and affordable presence is created to fight the forces of Al Qaida in the Islamic Maghreb (AQIM) and other ethnic dissidents in the Sahel it has become clear that the military effort must use minimal air support from the West except for unmanned drones. These will be maintained, supported, serviced and flown by Western technicians in bases outside the theatre of conflict (e.g., Niger). There is no economical alternative.


**Figure 1:** Drone Bases in Africa


**Figure 2:** US Military Presence in Africa

## The Importance of Intrinsic Forces in the Sahel

The notion of intrinsic forces (**Figure 3**) is important in the evaluation of warfare in the Sahel. These terrorists are not, for the most part, invading foreigners coming to seek domination, power or advantage. They are locals who have taken up the Salafist ideology to further their joint aims of setting up an Islamic State and in preserving the smuggling routes across the Sahel. The ancient salt caravans across the Sahel from Mali making their way to Europe and the Middle East have evolved into caravans of drugs, diamonds and gold from Mali to Europe and the Middle East. The large revenues earned from this smuggling have helped fund the AQIM, the MNLA, MUJAO and other bands and have generated financial and political support from the Wahhabi extremists of Saudi Arabia and the Gulf States. The collapse of Libya under Kaddafi left these smugglers without a protector so the radical extremists who supplanted Kaddafi offered the smugglers of the Sahel the same protection as before but required their ideological support in the cause of radical Islam as an additional price. Their successes were aided by the breakdown of competence and cohesion of the states of the Sahel as they reverted to incompetent competing military cliques. The smugglers were left with few natural enemies and they spread their wings.

While France has a long and undistinguished history of colonial involvement in Africa and Africa's wars, the role of the United States in Africa is part of a long tradition which is often overlooked (see **Figure 2**). According to a US Congressional Research Service study published in November 2010, Washington has dispatched anywhere between hundreds and several thousand combat troops, dozens of fighter planes and warships to buttress client dictatorships or to unseat adversarial regimes in dozens of countries, almost on a yearly basis (Ploch 2010). The record shows the US armed forces intervened in Africa forty-seven times prior to the current Mali endeavour (Grimmett 2010). The countries suffering one or more

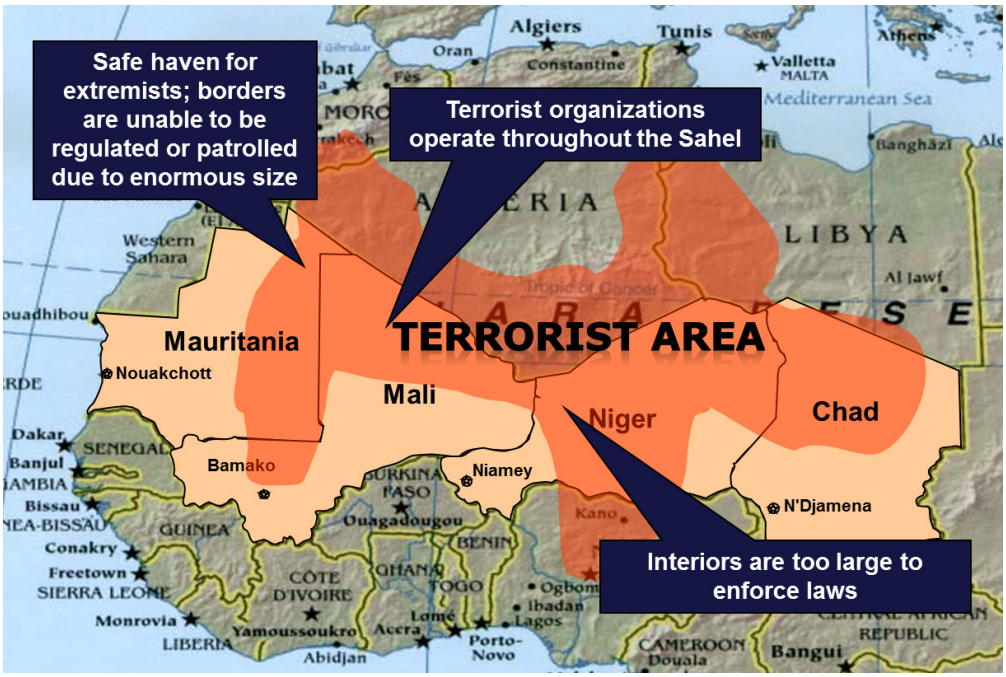


**Figure 3:** Intrinsic Forces in the Sahel

US military intervention include the Congo, Zaire, Libya, Chad, Sierra Leone, Somalia, Rwanda, Liberia, Central African Republic, Gabon, Guinea-Bissau, Kenya, Tanzania, Sudan, Ivory Coast, Ethiopia, Djibouti and Eritrea. Interventions, under this description, included sending troops, advisers, trainers and logistics specialists – but rarely large-scale troop efforts as in Somalia.

## The US Military Presence in Africa

Between the mid 1950's to the end of the 1970's, only four overt military operations were recorded, though large scale proxy and clandestine military operations were pervasive. Under the administrations of US Presidents Ronald Reagan and George Bush Sr. (1981–1993) military intervention accelerated, rising to eight, not counting the large scale clandestine 'special forces' and proxy wars in Southern Africa. Under the Clinton regime, US militarised intervention in Africa took off. Between 1992 and 2000, 17 armed incursions took place, including a large scale invasion of Somalia and military backing for the Rwandan genocidal regime. Clinton intervened in Liberia, Gabon, Congo and Sierra Leone to prop up a long standing troubled regimes. He bombed the Sudan and dispatched military personnel to Kenya and Ethiopia to back proxy clients assaulting Somalia. Under George W. Bush, 15 US military interventions took place, mainly in Central and East Africa.

Most of the United States' African outreach is disproportionally built on military links to client military chiefs. The Pentagon has military ties with 53 African countries (including Libya prior to the recent war). Washington's efforts to militarise Africa and turn its armies into proxy mercenaries in protecting property and fighting terrorists were accelerated after 9/11 (Petras 2011). The Bush Administration announced in 2002 that Africa was a "strategic priority in fighting terrorism" (The White House 2002). Henceforth, US foreign policy strategists, with the backing of both liberal and neoconservative congress-people, moved to centralise and coordinate a military policy on a continent wide basis form-

ing the African Command (AFRICOM). The latter organises African armies, euphemistically called "co-operative partnerships," to conduct neo-colonial wars based on bilateral agreements (Uganda, Burundi, etc.) as well as 'multi-lateral' links with the Organization of African Unity (OAU).

A typical building-block is the annual "Operation Flintlock" exercises. In the midst of a major drive to increase security in Africa's Saharan and Sahel nations, American, African and European military forces combine to engage in a version of Operation Flintlock, a series of multinational military exercises designed to foster and development international security cooperation in North and West Africa. The manoeuvres are conducted as part of the Trans-Sahara Counter Terrorism Partnership (TSCTP). The new AFRICOM program, of which Mali is a part, combines many of the US military programs from the past, including the JCET training and co-operation programs and the various 'Operation Flintlock' joint exercises.

This training and equipping of African soldiers work if these forces are supplemented by high-tech Western equipment. In the last decade there have been significant developments in military technology which have revolutionised military capabilities and created a number of important political policy options which have rarely been addressed in public debate.

## The Next Generations of Military Equipment

The very nature of military conflict has changed as the sophistication of the weapon systems brought into service has dramatically increased. Very few nations have access to the last two or three generations of weapons systems and have shown neither the will, the cash or the wit to produce their own. With the massive expansion of the US military budget there have been heavy investments made in improving weapons and their delivery systems. An important result has been the ability of these systems to reduce the dangers faced by the armed forces in pursuing their military assignments while augmenting their battlefield lethality. Humans on the ground or in the air with guns in their hands are gradually becoming a Third World business. Modern warfare involves air and sea drones of increasing sophistication, electro-magnetic pulse weapons, cyber warfare with killer viruses, targeted laser heat rays and a growing ability to use satellites for military purposes.

This has meant that there has been a change in the type and training of the soldiers needed in combat and the ascendance of highly sophisticated logistical and support systems which maintain and repair the new weapons systems. While this has allowed the US military to gradually shift into an advisory and training role, it has also meant that the maintenance of the high-tech equipment based in Africa requires increasing numbers of specialists on the ground to perform their tasks.

There has been a dramatic increase in the use of Unmanned Aerial Vehicles (UAV). The expansion of the US UAV arsenal is increasing each fiscal year as they become the 'weapon of choice' in the asymmetrical war against terrorists (or at least those designated as terrorists). Over the last decade, the American use of UAVs and unmanned aerial systems (UAS) has expanded exponentially, as has media coverage of their use. The number of UAV bases has also risen to around 63 (when the latest in Niger is finished). From UAV bases in the Seychelles and at Camp Lemonnier in Djibouti UAV's are sent almost daily to destroy targets in Yemen, Somalia and neighbouring countries. Most UAVs, such as the ones frequently reported in operations in Pakistan and Afghanistan, are missile-armed MQ-Reaper drones. It was such a drone which killed numbers of leading Taliban fighters in Waziristan and took out the important Al Qaida leader Anwar al-Awlaki in the Yemen. These UAV bases are operated by both the US military and the CIA.

They are gradually being accompanied by UCAVs (Unmanned Combat Aerial Vehicles), the first weapon designed to be dropped by

gravity from an UAV. Lockheed Martin has developed a new weapon: a drop-glide bomb called Shadow Hawk. Weighing in at only 4.9 kilograms (11 pounds) the bomb has a diameter of 6.9 centimetres (2.75 inches) and is guided by laser designator attached to the drone. Once used only to perform intelligence, surveillance reconnaissance, UAV drones are now being armed with missiles and other weapons. The important point of this change in military posture is that these UAVs are Remotely Piloted Aircraft. They can be operated from thousands of miles away or on a distant vessel, in relative comfort and safety. Creech Air Force Base outside Las Vegas is ground zero in America's military drone campaign.

There are many more sophisticated weapons now deployed. One of these is the Firestrike, produced by Northrop-Grumman. Firestrike, first delivered in 2008 is a family of high-energy, solid-state lasers capable of emitting a light which will cut through the skin and critical components of anti-ship cruise missiles or aircraft (as well as buildings). The laser, called Gamma, uses "slab" architecture similar to previous Northrop Grumman high-power lasers. It operates at 13.3 kilowatts for a number of shots over a total of 1.5 hours with stable performance and a coherent beam quality. The Gamma demonstrator is a single "chain" or building block that is designed to be combined with other chains to create laser systems of greater power. This is a big leap in laser weapons because, until now, the only effective way to get laser weapons to work with enough lethal power was using chemicals. These were extremely heavy and the whole firing process was extremely hazardous. The laser in Firestrike is solid and very easy to manage, as it only requires electricity and has no by-products. In fact this has been coupled together with the technology garnered in earlier "killer ray" projects and there is now an operating laser so powerful that it can destroy nuclear-tipped missiles shortly after launch. This can be mounted on an aircraft or also mounted on a satellite which can be empowered by an electromechanical pulse from the ground which powers the satellite-mounted laser. These can be augmented by satellite-mounted mirrors which can assist in focusing and targeting the pulse laser destroying nuclear missiles at their launch.

This anti-missile laser capability has been bolstered by a new anti-personnel weapon, the Active Denial System, a heat ray that sends out a high-frequency electromagnetic ray. People hit with the ray feel an intense, unbearable heat. With a range of about the length of seven football pitches this weapon is ideal for perimeter security, crowd control, entry control points and destroying enemy formations on the ground and invading concealed spaces. These can be mounted on unmanned vehicles.

## Conclusion

The nature of modern warfare, especially in Africa, has been driven by the constraints of logistics. If warfare is to be conducted against small bands of insurgents in a large undeveloped territory the war must be fought differently than by the confrontation of armies lined up against each other in battle. Keeping enough troops on the ground in such a vast area creates overextended supply lines which are difficult to secure. Food, fuel and medical supplies are difficult to store and distribute. Repair facilities for equipment and routine maintenance are difficult tasks in such an expanse of territory. The destruction of the enemy's troops and encampments are best done by high-tech equipment which can be returned to base on completion of the mission for repair, servicing and refuelling. African troops fill more of a policing role in maintaining security in populated areas. The Western nations add capital equipment as their contribution and skilled technicians to maintain and deploy the equipment. There is no need to put them at risk.

After the wisdom gained in years of African training exercises by the US military and the experiences garnered in Afghanistan, sending in local troops to conduct counter-

insurgency is a not always a safe bet and despite that fact that the conflicts in Iraq and Afghanistan have gradually desensitised the broad public to the costs of putting one's own troops at risk the numbers of dead and wounded from these conflicts will create a political backlash if they look to be repeated elsewhere. Killing effectively and from a distance is the future of African warfare using high-tech equipment and surrogate forces. That is the lesson of logistics for the Sahel.

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