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Iraq: Weapons of Mass Destruction (WMD) Capable Missiles and Unmanned Aerial Vehicles (UAVs)

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Summary

This report addresses Iraq's missile and UAV programs and their employment of missiles against Coalition forces in Operation Iraqi Freedom. The UN supervised the destruction of a number of Al Samoud 2 missiles, but some of these missiles may be deployed with Iraqi forces. Intelligence sources estimate that Iraq has illegally retained up to 20 Al Hussein SCUD variant missiles and has fired a number of Ababil-100 missiles at coalition targets. Iraq has also been accused of modifying L-29 Czech jet trainers to be used as UAVs to disseminate chemical or biological agents. This report will be updated as events warrant. Additional information is provided in CRS Issue Brief IB92117, *Iraq: Weapons, Threat, Compliance, Sanctions, and U.S. Policy* and CRS Report RL31671, *Iraq: UN Inspections for Weapons of Mass Destruction*.

Iraq's Missile and UAV Program, 1991-1998

Since the conclusion of the Gulf War in 1991 and the subsequent imposition of United Nations Security Resolution (UNSCR) 687, United Nations Special Commission on Iraq (UNSCOM) inspectors have either supervised the destruction of, or accounted for:¹

- 817 of 819 Russian-supplied SCUD missiles;
- 19 transporter/erector/ launchers (TELs); and
- 30 chemical/biological warheads.

Prior to the first Gulf War, Iraq experimented with a variety of ballistic missiles, most based on the proven SCUD design, with ranges from 900 to 2,500 kms. Missiles such as the Al Abid, Tammouz I, and Badr-2000 have been developed with varying

¹ *Iraq Weapons of Mass Destruction Programs*, U.S. Government White Paper, February 13, 1998, p. 11.

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degrees of foreign assistance but either have failed during operational testing or the programs were discontinued because of the first Gulf War, UN disarmament activities, or lack of foreign assistance. These programs may have been resurrected after the departure of UNSCOM inspectors in 1998.

Baghdad has allegedly attempted to convert a number of L-29 Czech jet trainers into UAVs that can be fitted with aerial spray tanks for the dissemination of chemical or biological agents over a wide area. This was not a new endeavor as Iraq conducted experiments in converting Mig-21 aircraft into UAVs capable of carrying 2,000 liter spray tanks prior to the first Gulf War.² The L-29 UAV should not be confused with the somewhat primitive UAV aircraft depicted in recent press photos.

It is important to note that this report covers only Iraqi systems that are known through inspections to be WMD capable and not those systems that could be modified to carry WMDs. This report also does not cover Iraqi WMD capable artillery, rockets, aerial bombs, and mines.

Current Estimated Status of Iraq's WMD Capable Missiles and UAVs

Al Samoud II (Photo at [www.cbsnews.com/stories/2003/02/25/iraq/main541855.shtml])

The Al Samoud II missile is a liquid propellant, vehicle mounted missile that has undergone extensive development and testing since the first Gulf War. The Al Samoud II is estimated to have a payload capacity of 300 kilograms³ and intelligence sources believe that up to 50 missiles may already be deployed to units.⁴ UN weapons inspectors suggested that Iraq's Al Samoud IIs were in violation of the 93 mile (150 km) range restriction imposed by UNSCR 687 after reviewing Iraqi flight test data. Al Samoud IIs are assessed to be chemical/biological capable and it is also possible that the Iraqis might have produced chemical/biological submunitions for this system. Press reports on March 3, 2003 stated that Iraq had destroyed 16 Al Samoud II missiles under UN supervision at the Taji missile production and storage facility north of Baghdad.⁵

Al Hussein (Photo at [www.fas.org/nuke/guide/iraq/missile/01_alhussein.jpg])

Western intelligence believes that Iraq has up to 20 Al Hussein missiles and about a dozen TELs although, to date, coalition forces have been unable to verify these claims. In 1999 UNSCOM reported that they could account for all but 9 Al Husseins (2 of the modified Russian SCUDS and 7 domestically produced Al Husseins).⁶ The Al Hussein missile is essentially an Iraqi-modified version of the former Soviet Union's mobile

² Ibid.

³ *Iraq's Missiles: A Brief History*, Iraq Watch, November 7, 2002, p. 11.

⁴ *Iraq's Weapons of Mass Destruction: The Assessment of the British Government*, September 24, 2002, p. 27.

⁵ *UN: Iraq Destroys More Missiles*, CNN.com. March 3, 2003.

⁶ S/1999/94, UNSCOM Report on the Status of Disarmament and Monitoring, January 29, 1999.

SCUD-B missile that was developed in the 1950s based on German World War II V-2 missile technology. During the Iran-Iraq War in the 1980s, Iraq fired more than 500 SCUD-type missiles at Iranian military and civilian targets; 93 SCUD-type missiles were fired at Israeli and Coalition forces during the first Gulf War.⁷

The Al Hussein can carry high explosive, chemical, or biological warheads. After the first Gulf War, the Iraqis admitted filling at least 75 of their SCUD warheads with either chemical or biological agents.⁸ Fifty chemical warheads were intended to carry a mixture of Sarin and Cyclosarin nerve agents but technical analysis of warhead remnants indicated that some of these warheads were likely filled with VX nerve agents.⁹ Iraq also claimed to have unilaterally destroyed all 25 biological warheads (16 botulinum, 5 anthrax, and 4 aflatoxin) in mid-1991.¹⁰ UNSCOM later claimed that the alleged Iraqi destruction of these biological warheads “could not be reconciled with the physical evidence.”¹¹ These warheads were bulk filled but it is possible that Iraq has developed submunition chemical and biological warheads for their missiles since the cessation of UN inspections in 1998.¹² Upon the conclusion of inspections, UNSCOM reported that between 40 to 70 chemical/biological capable warheads were unaccounted for.¹³

Ababil-100 (Photo at [www.globalsecurity.org/wmd/world/iraq/images/ababil-100.jpg])

The Ababil-100 missile is a solid propellant missile and is also believed to have undergone engineering modifications to extend its range. The Ababil-100 is estimated to have a 300 kg payload capacity¹⁴ and it is believed that it is currently being developed as an unguided missile with the intent of eventually including a guidance package to enhance its accuracy.¹⁵ There are no known unclassified estimates of the number of Ababil-100's that Iraq might be able to operationally deploy and the Ababil-100 is also assessed to be chemical/biological capable with submunition potential. UN inspection reports issued prior to their recent departure from Iraq did not include production figures on Ababil-100 missiles or discuss what, if any, modifications may have been made to the missile in order for it to achieve ranges greater than 150 kms.

⁷ Ibid.

⁸ *Iraq's Weapons of Mass Destruction Programs*, Unclassified CIA Report, October 2002, p. 18.

⁹ *Iraq's Weapons of Mass Destruction: The Assessment of the British Government*, September 24, 2002, p. 23

¹⁰ *Iraq Weapons of Mass Destruction Program*, p. 11.

¹¹ Ibid.

¹² The efficacy of all missile systems would be significantly enhanced if Iraq employed chemical or biological submunitions. Submunitions allow for a wider and more effective dispersion and concentration of chemical or biological agents and also permit a larger portion of agent to survive a missile intercept.

¹³ *Iraq Weapons of Mass Destruction Program*, p. 11.

¹⁴ *Iraq's Missiles: A Brief History*, Iraq Watch, November 7, 2002, p. 11.

¹⁵ *Iraq's Weapons of Mass Destruction: The Assessment of the British Government*, September 24, 2002, p. 27.

L-29 UAV (Photo at [www.globalsecurity.org/wmd/world/iraq/images/l-29.jpg])

A variety of intelligence sources report that Iraq has converted an unspecified number of L-29 Czech jet trainers into UAVs designed to conduct long range chemical or biological spray attacks.¹⁶ The L-29 UAV's estimated range is approximately 600 kms and its payload is approximately 160 kgs. This UAV configuration would be best suited for conducting biological spray attacks due to the L-29's relatively small payload capacity. It is not known how the L-29 UAV would be controlled, either from fixed or mobile ground sites or from an airborne platform.

Iraq's Use of Missiles and UAVs in the Current Conflict

Despite some initial reports, the Iraqis are not believed to have fired any of their suspected Al Hussein missiles at coalition targets or neighboring countries nor employed UAVs to deliver WMD payloads. Iraq is suspected of firing no more than a dozen shorter-range missiles and is believed to have hundreds of these missiles in southern Iraq within range of U.S. forces and facilities in Kuwait.¹⁷ U.S. and coalition special operations forces and aircraft have been unable to locate any ballistic missile launchers in Western Iraq that are capable of striking Israel, according to Joint Chiefs of Staff Chairman Richard Meyers.¹⁸ Some experts speculate that this may be due to an extensive special forces presence in the western region well in advance of hostilities and the employment of Coalition manned and unmanned surveillance aircraft.¹⁹ As coalition forces advance on Baghdad, the Iraqis will probably find it more difficult to employ any Al Hussein missiles that they might have, as suitable launch sites and the time needed to set up and launch these missiles will likely become increasingly scarce.

Iraq is making use of their shorter-ranged missiles. Defense officials had confirmed as of March 23rd, that Iraq had fired six Ababil-100 missiles at the 101st Airborne Division, Ali Al Salem airbase in Kuwait, a command center, a large Marine logistics facility, and other critical regional targets.²⁰ C.I.A. analysts stated that telemetry data indicated that some of the missiles that were fired exceeded the UN-mandated 150 km range.²¹ Four of these missiles were reportedly intercepted by improved Patriot GEM-2²² missiles and two Iraqi missiles were permitted to land harmlessly in the Persian Gulf and

¹⁶ Ibid., p. 23.

¹⁷ *Hussein's Worst Weaponry Is A No-Show, So Far*, Paul Richter, Los Angeles Times, March 22, 2003., p. 1

¹⁸ *U.S. Forces Haven't Found Scuds in Western Iraq, Myers Says*, Tony Capaccio, Bloomberg.com, March 21, 2003, p. 1.

¹⁹ Richter, p. 2.

²⁰ *U.S. Says The Iraqis Are Repositioning Their Missile Sites*, Michael R. Gordon, New York Times, March 23, 2003, p. 1.

²¹ Ibid., p 3.

²² GEM - guidance-enhanced missile.

the desert without being engaged.²³ Some analysts suggest that the missile that landed in the Persian Gulf may have been intended for Kuwait City or Camp Doha, a large U.S. staging base near the city. Defense officials said that these attacks were not random but were based on Iraqi intelligence on suspected U.S. positions.²⁴ Inspections have shown that all of the missiles that have been fired have had conventional high explosive warheads.

Despite bombings by U.S. forces, these missile batteries were reported to be heading north on the highway out of Basra, possibly to fire on the right flank of U.S. forces as they advance on Baghdad.²⁵ According to U.S. officials, the Iraqis seem to be shifting their Ababil-100s from the Basra area towards Qurnah, an area where there are currently no known coalition ground forces.²⁶ The area around Qurnah includes palm groves, marshy areas, and buildings which will make it easier to hide the Ababil-100s which are much easier to move and hide than the liquid-fueled Al Hussein or Al Samoud II missiles.²⁷

There are numerous theories as to why Iraq has not employed chemical or biological weapons on Al Husseins, Al Samoud IIs, Ababil-100s, or UAVs. Some analysts speculate that Baghdad will employ these weapons when coalition ground forces close in on Baghdad. Other analysts believe that a broken chain of command or fears of post-war prosecution as war criminals may be keeping Iraqi commanders from launching chemical or biological-laden missiles. Another theory is that U.S. and British intelligence may have overstated Iraq's WMD and missile capabilities and Baghdad may not have enough of these proscribed weapons to make any sort of battlefield operational impact. Some have theorized that Hussein may have either hidden or destroyed these weapons to take advantage of the international opposition to the war and to discredit the Bush Administration's position regarding Iraqi possession of prohibited weapons of mass destruction. In this regard, even if the Iraqi regime falls, Iraq might claim a moral victory over the U.S.-led coalition. Despite the limited use of missiles and the absence of WMDs on the battlefield to date, coalition forces still could face the use of these weapons in the days that lie ahead and will likely continue their efforts to attempt to locate and destroy these weapons.

²³ Gordon, p. 1.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid., p. 3.

²⁷ Ibid.