

Design Characteristics of Egypt's Ballistic Missiles

Last update: February 2011

Name	Length (m)	Diameter (m)	Projected Warhead wt. (kg)	Actual Warhead wt. (kg)	Projected Range (km)	Actual Range (km)	Accuracy - CEP (m)	Propellant	Status
al-Zafir ¹	5.5	0.76	500-800	60	350-430	Less than 8	~1,600	Liquid	Discontinued
al-Kahir ²	12	1.20	680	220	600	8	~1,600	Liquid	Discontinued
Al-Ra'id ³	Unknown	Unknown	500-4,000	Unknown	580-1,000	Unknown	Unknown	Liquid	Never Produced
Scud B ⁴	11.25	0.88	950	950	300	300	450	Liquid	Deployed
Project T ⁵	11.25	0.88	1,000	1,000	450	450	Unknown	Liquid	Deployed
Scud C ⁶	11.25	0.88	600-700	600-700	500-550	500-550	700	Liquid	Unknown
Vector ⁷	10.5	0.8	450-1000	Unknown	800-1,200	Unknown	Unknown	Solid/Liquid	Never Produced
Nodong ⁸	16.2	1.36	1,200	1,200	1,300	1,300	,000	Liquid	Never Received/ Produced

Sources:

[1] U.S. intelligence estimated that a warhead larger than 60kg would drive the al-Zafir's projected range down to a few tens of kilometers. When tested by General El Shazly in 1971, the al-Zafir had an actual range of less than 8km. See: Joseph S. Bermudez Jr., "Ballistic Missiles in the Third

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World—Egypt and the 1973 Arab-Israeli War," *Jane's Intelligence Review*, 3, no. 12, December 1991, pp. 531-537; Owen L. Sirrs, *Nasser and the Missile Age in the Middle East* (London and New York: Routledge, 2006), pp. 46-47; Saad El Shazly, *The Crossing of the Suez* (San Francisco: American Mideast Research, 1980) pp. 78-79.

[2] The "actual warhead weight" is based on U.S. intelligence estimates. Cairo claimed that the al-Kahir could deliver a 680kg warhead over 600km. Later testing by General El Shazly in 1971 disproved this claim. See: Joseph S. Bermudez Jr., "Ballistic Missiles in the Third World—Egypt and the 1973 Arab-Israeli War," *Jane's Intelligence Review*, 3, no. 12, December 1991, pp. 531-537; Owen L. Sirrs, *Nasser and the Missile Age in the Middle East* (London and New York: Routledge, 2006), pp. 46-47; Saad El Shazly, *The Crossing of the Suez* (San Francisco: American Mideast Research, 1980) pp. 78-79.

[3] Estimated payload and range are from Egyptian propaganda figures. If the missile actually worked, the real payload and range would likely be much smaller. See: Joseph S. Bermudez Jr., "Ballistic Missiles in the Third World—Egypt and the 1973 Arab-Israeli War," *Jane's Intelligence Review*, 3, no. 12, December 1991, pp. 531-537; Owen L. Sirrs, *Nasser and the Missile Age in the Middle East* (London and New York: Routledge, 2006), pp. 82-83.

[4] Missilethreat.com, "Scud B/C/D Variants," The Claremont Institute, www.missilethreat.com.

[5] Joseph Cirincione, Jon B. Wolfsthal, and Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, Second ed. (Washington, DC: Carnegie Endowment for International Peace, 2005), p. 106; Missilethreat.com, "Scud B/C/D Variants," The Claremont Institute, www.missilethreat.com.

[6] Reducing the payload to an estimated 600-700kg appears to add extra distance to the Project T variant. See: Joseph S. Bermudez Jr., "Ballistic Missiles in the Third World—Egypt and the 1973 Arab-Israeli War," *Jane's Intelligence Review*, 3, no. 12, December 1991, pp. 531-537; Jon B. Wolfsthal, and Miriam Rajkumar, *Deadly Arsenals: Nuclear, Biological, and Chemical Threats*, Second ed. (Washington, DC: Carnegie Endowment

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for International Peace, 2005), p. 106; Missilethreat.com, "Scud B/C/D Variants," The Claremont Institute, www.missilethreat.com.

[7] Wisconsin Project on Nuclear Arms Control, "Egypt's Missile Efforts Succeed with Help from North Korea," The Risk Report, 2, no. 5, September-October 1996, www.wisconsinproject.org; Missilethreat.com, "Badr 2000," The Claremont Institute, www.missilethreat.com.

[8] Missilethreat.com, "No-dong 1," The Claremont Institute, www.missilethreat.com.

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