

VIII. Israeli nuclear forces

PHILLIP PATTON SCHELL AND HANS M. KRISTENSEN

Israel continues to maintain its long-standing policy of nuclear opacity: it neither officially confirms nor denies that it possesses nuclear weapons.¹ It is estimated here that Israel has approximately 80 intact nuclear weapons, of which 50 are for delivery by Jericho II medium-range ballistic missiles and 30 are gravity bombs for delivery by aircraft (see table 6.9). The operational status of a longer-range Jericho III ballistic missile is unknown. On 12 July 2013 Israel conducted a launching test of a 'rocket propulsion system', which appeared to be a test firing of a Jericho III ballistic missile.²

Israel is widely believed to have produced plutonium for its undeclared nuclear weapon programme at the Negev Nuclear Research Center, near Dimona. It is estimated that Israel had 730–990 kilograms of weapon-grade plutonium as of 2013 (see section X below). However, only part of this plutonium could have been used for nuclear weapons.

Rumours persist that Israel may be equipping its current fleet of Type 800 Dolphin class diesel-electric submarines with nuclear-armed sea-launched cruise missiles (SLCMs), possibly an extended version of the Israeli-made Popeye Turbo.³ Israel has consistently denied these reports. ThyssenKrupp, the German company responsible for construction of the submarines, has also stated that, after delivery, it is technically impossible to retrofit the submarines to be armed with such a missile system.⁴ A fleet of six Dolphin submarines is planned.

¹ On the role of this policy in Israel's national security decision making see Cohen, A., 'Israel', eds H. Born, B. Gill and H. Hänggi, SIPRI, *Governing the Bomb: Civilian Control and Democratic Accountability of Nuclear Weapons* (Oxford University Press: Oxford, 2010).

² Ben David, A., 'Israel tests enhanced ballistic missile', *Aviation Week & Space Technology*, 29 July 2013; and Agence France-Presse, 'Ministry: Israel tests rocket system' *Defense News*, 12 July 2013.

³ Von Bergman, R. et al., 'Made in Germany', *Der Spiegel*, 4 June 2012 (in German).

⁴ 'Thyssen Krupp', Devianzen, 21 Jan. 2013, <<http://www.devianzen.de/2012/01/21/thyssen-krupp/>>.

Table 6.9. Israeli nuclear forces, January 2014

Type	Range (km) ^d	Payload (kg)	Status
<i>Aircraft^b</i>			
F-16	1 600	5 400	205 aircraft in the inventory; some are believed to be certified for nuclear weapon delivery
<i>Ballistic missiles^c</i>			
Jericho II	1 500– 1 800	750– 1 000	c. 50 missiles; first deployed in 1990; test launched on 27 June 2001
Jericho III	>4 000	1 000– 1 300	Possibly under development; based on Shavit space launch vehicle; test launched on 12 July 2013; status unknown
<i>Cruise missiles</i>			
Popeye Turbo Mod	Rumoured nuclear version for Dolphin-class diesel submarines; denied by Israeli officials

^a Aircraft range is for illustrative purposes only; actual mission range will vary. Missile payloads may have to be reduced in order to achieve maximum range.

^b Some of Israel's 25 F-15I aircraft may also have a long-range nuclear delivery role.

^c The Shavit space launch vehicle, if converted to a ballistic missile, could deliver a 775-kg payload to a distance of 4000 km.

Sources: Cohen, A., *The Worst-Kept Secret: Israel's Bargain with the Bomb* (Columbia University Press: New York, 2010); Cohen, A. and Burr, W., 'Israel crosses the threshold', *Bulletin of the Atomic Scientists*, vol. 62, no. 3 (May/June 2006); Cohen, A., *Israel and the Bomb* (Columbia University Press: New York, 1998); Albright, D., Berkhout, F. and Walker, W., SIPRI, *Plutonium and Highly Enriched Uranium 1996: World Inventories, Capabilities and Policies* (Oxford University Press: Oxford, 1997); *Jane's Strategic Weapon Systems*, various issues; Fetter, S., 'Israeli ballistic missile capabilities', *Physics and Society*, vol. 19, no. 3 (July 1990)—for an updated analysis, see unpublished 'A ballistic missile primer', <<http://faculty.publicpolicy.umd.edu/fetter/pages/publications>>; 'Nuclear notebook', *Bulletin of the Atomic Scientists*, various issues; and authors' estimates.