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THE SUNDAY TIMES

Revealed: the secrets of Israel's nuclear arsenal

INSIGHT

THE SECRETS of a subterranean factory engaged in the manufacture of Israeli nuclear weapons have been uncovered by The Sunday Times Insight team.

Hidden beneath the Negev desert, the factory has been producing atomic warheads for the last 20 years. Now it has almost certainly begun manufacturing thermo-nuclear weapons, with yields big enough to destroy entire cities.

Information about Israel's capacity to manufacture the bomb comes from the testimony of Mordechai Vanunu, a 31-year-old Israeli who worked as a nuclear technician for nearly 10 years in Machon 2 — a top secret, underground bunker built to provide the vital components necessary for weapons production at Dimona, the Israeli nuclear research establishment.

Vanunu's evidence has surprised nuclear weapons experts who were approached by Insight to verify its accuracy because it shows that Israel does not just have the atom bomb — which has long been suspected — but that it has become a major nuclear power.

Vanunu's testimony and more than 60 photographs he secretly took inside have been scrutinised by nuclear experts on both sides of the Atlantic. They show that Israel has developed the sophisticated and highly classified techniques needed to build up a formidable nuclear arsenal. They confirm that:

- Israel now ranks as the world's sixth most powerful nuclear power, after America, the Soviet Union, Britain, France and China — with an arsenal far greater than those other countries, such as India, Pakistan and South Africa, which are also suspected of developing nuclear weapons.
- It has possessed its secret weapons factory for more than two decades, hiding its plutonium extraction processes from spy satellites and independent inspections during the 1960s by burying it



Above ground: the reactor that produces plutonium



Below ground: the nerve centre of the bomb factory

Pictured for the first time in detail: Israel's nuclear bomb plant is built deep beneath the Negev desert and has been secretly operating for more than 20 years

beneath an innocuous, little used building.

● The plant is equipped with French plutonium extracting technology, which transformed Dimona from a civilian research establishment to a bomb production facility. Plutonium production rates amount to 40 kilograms a year, enough to build 10 bombs. In the past six years Israel has added further equipment to make components for thermo-nuclear devices.

● The 26 megawatt reactor, also built by the French, has been expanded and is probably now operating at 150 megawatts to allow it to extract more plutonium. An ingenious cooling system disguises the output.

The nuclear scientists consulted by The Sunday Times are convinced by Vanunu's evidence. They calculate that at least 100 and as many as 200 nuclear weapons of varying destructive power

have been assembled — 10 times the previously estimated strength of Israel's nuclear arsenal.

The scientists include Theodore Taylor, one of the world's most experienced nuclear weapons experts. He was taught by Robert Oppenheimer, the father of the atomic bomb, and worked on America's first bomb designs. He later went on to head the Pentagon's atomic weapons test programme.

Dr Taylor studied the photographs taken by Vanunu inside Dimona and a transcript of his evidence last week. He said: "There should no longer be any doubt that Israel is, and for at least a decade has been, a fully-fledged nuclear weapons state. The Israeli nuclear weapons programme is considerably more advanced than indicated by any previous report or conjectures of which I am aware."

He added that Vanunu's

testimony was entirely consistent with an Israeli capacity to produce 10 nuclear weapons a year that are significantly smaller, lighter and more efficient than the first types of weapons developed by Russia, America, Britain, France or China.

Another scientist who authenticated the evidence uncovered by Insight is Dr Frank Barnaby, a nuclear physicist who worked at Aldermaston, the British nuclear weapons research establishment in Berkshire and who recently retired as the director of the Swedish Institute for Peace Research, which monitors nuclear proliferation.

"As a nuclear physicist," says Barnaby "it was clear to me that details he gave me were scientifically accurate and clearly showed that he had not only worked on these processes but knew the details of the techniques. Also

the flow rates through the plant which he quotes exactly confirm the quantities of plutonium that were being made."

Vanunu says that, despite tight security, he was able to smuggle a camera into Machon 2. Insight debriefed him for four weeks and invited Barnaby to interview Vanunu in an attempt to find scientific flaws in his story. "His testimony is totally convincing," concluded Barnaby.

The assessments of Taylor and Barnaby have been confirmed by other top nuclear scientists who were shown the pictures and detailed evidence. Because they work in sensitive positions in Britain's atomic energy industry and nuclear weapons manufacturing they have asked to remain anonymous.

Israel has refused to comment on the evidence. But it has confirmed that Vanunu did work for the Israeli

Atomic Energy Commission in Dimona. He was made redundant last November with 180 other Dimona workers during a cost-cutting drive by the establishment. Security men had grown concerned about Vanunu's developing political contacts with West Bank Arab students during a part-time philosophy degree course he was taking at Beersheba University.

Israel is a small nation surrounded by hostile Arab states, most of whom have sworn at various times to try to destroy Israel and sweep its people into the sea. Although Israeli conventional forces have been able to hold off Arab attacks, it has always been suspected that the Israelis would want weapons of last resort to protect themselves. Israel would have no difficulty in dropping its nuclear bombs on any of its Arab neighbours. It has been suggested,

though never proved, that when Israel was in danger of losing the Yom Kippur War in 1973 after the initial Egyptian attack, the then prime minister, Golda Meir, ordered nuclear devices to be moved to air bases.

Last Thursday, a senior US government source at the time, now retired, confirmed the incident to The Sunday Times.

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Inside Dimona: full story pages 4 & 5

Thatcher to fly to Reagan talks

MRS THATCHER is to visit Washington, probably next month, for East-West arms talks with President Reagan. These will take place before the planned summit in the United States between Reagan and Mikhail Gorbachev, the Soviet leader. She is also expected to visit Moscow next spring for follow-up talks with Gorbachev.

The prime minister received personal messages from both superpower leaders last week before the announcement of their pre-summit meeting in Iceland next weekend. Government sources are anxious to portray her as being "at the centre of the web" in the latest moves towards détente.

Thatcher is likely to support summit moves towards cuts in US cruise and Pershing-2 missiles in exchange for Soviet reductions of SS-20s. She believes that the removal of some cruise missiles at Greenham Common and the abandonment of Molesworth as a future cruise site — in return for equivalent Soviet reductions — would be a strong election card.

After last week's Labour conference vote endorsing Neil Kinnock's policy of unilateral nuclear disarmament and the closure of US nuclear bases in Britain, the prime minister is preparing to counter-attack vigorously at this week's Conservative

by Michael Jones and John Witherow

Britain's withdrawal from Nato, Tony Benn and Jeremy Corby, MP for Islington north, in a booklet sponsored by the group, called Peace Through Non-alignment, say that a "clear potential contradiction" exists between Labour's commitments to Nato and its defence policy.

US offers to help sub

SOVIET ships in the North Atlantic were last night giving urgent assistance to a Russian nuclear ballistic missile submarine that was damaged by fire. America has also offered assistance.

The Soviet leader, Mikhail Gorbachev, has personally assured President Reagan there is no risk of nuclear explosion or of radioactive contamination.

Full story page 2

"A stark choice may have to be made," they warn. Urging constituency Labour parties and trade unions to put the Nato question on their agendas, they say support for on-alignment will grow "until it wins a majority inside the Labour party just

cannot be part of US negotiations with the Russians until the superpowers have made substantial cuts in their own strategic nuclear arsenals.

The Russians have insisted until recently that any arms deal with the US should be dependent on the inclusion of British and French nuclear weapons. Thatcher has refused to include British nuclear weapons into any talks, despite approaches by the Soviet foreign minister Eduard Shevardnadze and by Paul Nitzke, Reagan's arms control adviser.

Thatcher will also press Reagan to abide by the restrictive terms of the Anti-Ballistic Missile Treaty which prevents the testing and deployment of star wars weapons. She is alarmed that a looser interpretation could accelerate the arms race and heighten tension.

The prime minister also wants greater flexibility in the restrictions governing nuclear testing. She would like the permissible threshold, currently 150 kilotons, to be reduced gradually. Thatcher has supported Reagan's negotiating stance with Gorbachev but has criticised the president over his plans to abandon the Salt-2 agreement, which restricts the growth of nuclear arsenals.

In Washington, there were reports yesterday that the Americans were expecting

Nunn intends to quit the RSC in the next few months.

What The Sunday Times said in June

Nunn steps down at RSC

by Rowena Webster and Peter Hounam

TREVOR NUNN has resigned from his post as chief executive of the Royal Shakespeare Company in a move predicted by The Sunday Times three months ago.

Nunn, who had headed the company for 18 years, is leaving his post in the wake of mounting criticism of his personal money-making activities and lack of commitment to the RSC.

Nunn, however, is not completely severing his links with the RSC. He will remain as a joint artistic director and deputy chief executive of the company. His successor will be Terry Hands, his former deputy. Nunn describes the changeover as "passing the baton" to Hands.

Sir Kenneth Cork, a board member of the RSC and its former chairman, said last night: "I've been expecting he would hand over to Terry



Trevor Nunn: Criticism

difference at the RSC. "It is different to being chief executive of a company. There's a general manager at the RSC to take care of day-to-day things. I think it is right this is happening. Trevor had been there a long time."

Nunn broke the news to colleagues at the RSC in an internal memorandum dated last Thursday, saying: "When the governors invited Terry Hands to join me in the leadership of the RSC, I assumed the title of joint artistic director and chief executive, and Terry became joint artistic director and deputy chief executive. It was implicit that in due course he and I would exchange roles. "Now that the first season in our new theatre (The Swan at Stratford-upon-Avon) is well and truly launched, we believe that exactly the right moment for the transition had been reached.

Earlier this year, a Sunday Times investigation into Nunn's activities revealed

BA bars terrorist

BRITISH Airways is refusing to fly the IRA terrorist William Quinn from America to Britain to stand trial for the murder of a London policeman.

The decision was taken by the airline's head of security, David Joyce, "on the grounds of security."

It is thought likely that Quinn may have to be flown to London by the RAF or the US Airforce.

Victory in sight

THE world chess champion, Garry Kasparov, defeated challenger Anatoly Karpov in the 22nd game of the title rematch yesterday in Leningrad, virtually clinching the series with only two games remaining.

Cyclists named

THE COUPLE found bound and shot dead in a French cornfield were yesterday named as the missing Norfolk teachers, Lorraine Glasby, and her fiance, Paul Bellion, after a post mortem. They were found in a shallow grave outside Dinan, south of St Malo.

Coalfield hope

GEOLOGISTS commissioned by the Dublin government have indicated there could be enough coal under the Irish Sea to make the Irish self sufficient in supplies of the fuel.

Soccer battle

FIGHTING broke out yesterday at the Second Division derby football match between



Winter looks warm

The CHESTER BARRIE

collection of superbly hand tailored winter coats. Show here, a classic design