# A Sourcebook on the TACKSMAN I and TACKSMAN II ELINT Bases in Iran

Version of 2024-08-01

#### http://www.siasatema.com/En/NSite/FullStory/Print/?Id=179

News code: 179

Date: 2011/07/05 Time: 18:15

CIA in Iran

Eavesdropping and surveillance bases in Iran 1334-1357 AH, 1955-1978 AD

[EXCERPT]

The most important espionage bases of CIA in north of Iran were located in Safi Abad of Behshahr, Kabkan of Khorasan and Pars Abad of Moghan which was equipped with the most advanced spy equipments and information systems of that time. Hashem Berenjian the lieutenant general, who was tried (in a court) after revolution, has said in regard of espionage bases of CIA in Safi Abad of Behshahr and other spy bases of CIA in northern parts of Iran as follows:

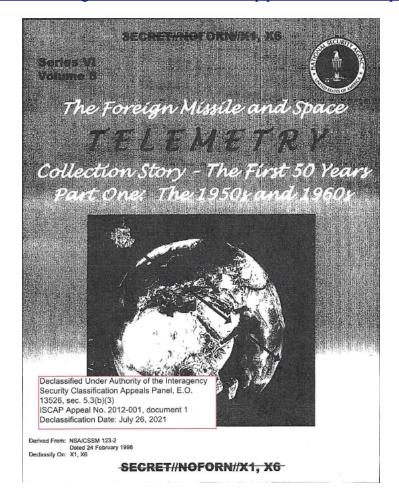
Since getting the right intelligence database of Behshahr and Kabkan after a few years, in that year air force commander came to me and said, Shah (king) has handed his private garden in Safi Abad of Behshahr to the CIA. He called his head of personnel, informed him about this situation and said: as they do their job, air force introduces about 250 students to them yearly, and I will send my reliable officers to protect them in Behshahr. I have done my affairs by sending workers, personnel, services or protective issues during this period. However, they had done their own affairs related to their king and definitely they had got king's permission, because the land of the base (station) was private property of king and did not have to do with air force and no officer had gone there against air counterintelligence.

Whenever it was necessary, one civilian came and talked about the need of bases with me then I reflected it to authorities in different positions, then they left. These civilians were being changed every two or three years and I was just an intermediary between command of air force and these stations and I had no direct relation with Americans, besides there were no advisors next to me for consulting.

Therefore, my relation with them was this, and no more. But what is certain is that Americans in Behshahr and Kabkan had such huge databases where could be seen from twelve miles. It is natural that these types of getting information were not related to inside, and every professional knew it.

# TACKSMAN I

Grounds of the Safi Abad Palace Behshahr, Iran 36.685 N, 53.528 E



#### (U) CIA Involved from the Beginning

(S) In 1956 CIA determined that COMINT, and perhaps telemetry, from the Kapustin Yar missile/space launch site could be collected from locations in northern Iran. Therefore, it set up a temporary "clandestine" facility at the Shah's hunting palace outside the city of Behshahr and called it EGGSHELL, initially manned on a TDY basis by CIA Office of Communications personnel. The "temporary" site soon expanded and in 1959 began to collect telemetry from newly operational Tyuratam Missile Test Range (TTMTR). It eventually became a permanent location, soon to be called TACKSMAN I. PCS personnel, with family accommodations and amenities would staff it as the operations expanded over the years.

# Engineering 145 Technology Entrepreneurship

# Hidden in Plain Sight: The Secret History of Silicon Valley



File:	E145_Aut_08_Session02_Part_1			
Title:	Stanford E145 Sept 24 2008.ppt			
Author:	Steve Blank			
Subject:				
Keywords:				

Created: 2008-09-23 6:30:50 PM

# Project: Melody ~1960

- Pick up Soviet radars bounced off their own ICBM's during test flights
  - Used existing CIA "Tacksman" intercept sites in Iran
  - Use the missiles' telemetry beacon to steer our antennas
- Produced intercepts of <u>all</u> ground-based Soviet missile tracking radars
  - Including all ABM radars
  - At a 1000 mile range

### Project: Melody ~1960

- First noticed at Cape Canaveral
  - The signals from one of our ground radars bounced off a Thor missile on a test launch
  - Was received by a second radar
  - Hmm...
- · Bistatic intercept receiver



Hidden in Plain Sight: The Secret History of Silicon Valley

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Melody The 1972 Anti-Ballistic Missile (ABM) treaty between the United States and the Soviet Union prohibited the development and testing of ABM systems. Soon after the treaty was ratified, the U.S. detected Soviet cheating via a highly classified feature of Project Melody that intercepted Soviet missile tracking radar signals [10]. During subsequent negotiations in Geneva, then Secretary of State Henry Kissinger confronted his Soviet counterpart with the dates and times that the Soviets had cheated on the treaty. The cheating stopped and the Soviets began a "mole hunt" for the spy who gave the information to the United States. America got its way without compromising its Melody sensors.

[10] E. Poteat, The use and abuse of intelligence: An intelligence provider's perspective, *Diplomacy and Statecraft*, vol. 11(2), pp. 1–16, 2000.

#### www.tbp.org THE BENT of Tau Beta Pi

Engineering in the CIA: ELINT, Stealth, and Beginnings of Information Warfare by S. Eugene Poteat, South Carolina Gamma '57

#### [EXCERPTS]

The Oxcart mission planners were especially concerned about just how widespread the Soviet's early-warning radar was and where itwas located. It seemed impossible, however, to determine the number, exact location, or any other technical information on those installations. I recalled a story from my Cape Canaveral days in the early 1950s, when the signal from a ground-based radar located nearly a thousand miles beyond our horizon was picked up at the Cape — the signal was reflected off a Thor missile during a test flight. The suggestion was then made that this same phenomenon (later called bistatic intercept) could be used to intercept Soviet high-powered radar located well over the horizon by pointing the ELINT antennas at the Soviet ballistic missiles during their flight testing, by using the missile's radio beacon for pointing, or simply programming the ELINT antennas to follow the missile's predicted trajectory.

The idea to gain greater knowledge of Soviet air defense capabilities through bi-static interception was approved by CIA management, and project Melody was born. There were no computers in those days, so our feasibility studies and engineering calculations involved solving spherical trigonometry equations using slide rules, tables of logarithms, and hand-cranked calculators.

Melody was installed at a CIA monitoring site on the shores of the Caspian Sea in northern Iran. Over the ensuing years, Melody produced bi-static intercepts of virtually all the ground-based Soviet missile tracking radar, including all their anti-ballistic missile tracking sites located at a test range nearly a thousand miles away. The fixed location of Melody and limited trajectories of the Soviet missiles being tracked, however, still did not provide the locations of all the air defense radar installations throughout the Soviet Union that were needed by the Oxcart mission planners.

A new Soviet early-warning radar, called the Tall King, began to appear about this time, which if deployed widely, appeared to improve significantly the Soviets' air defenses. The new, very large, and obviously powerful Tall King radar quickly became the Oxcart's nemesis. Melody's success with the high-powered, missile-related radar led to the idea of using the moon as a distant bi-static reflector to intercept and locate the Tall King radar systems deployed in the Soviet Union.

This article is based on an article by S.E. Poteat, 'Stealth, ELINT, 1960-75: Some Beginnings of Information Warfare,

Studies in Intelligence, Vol. 42, No.1, 1998.

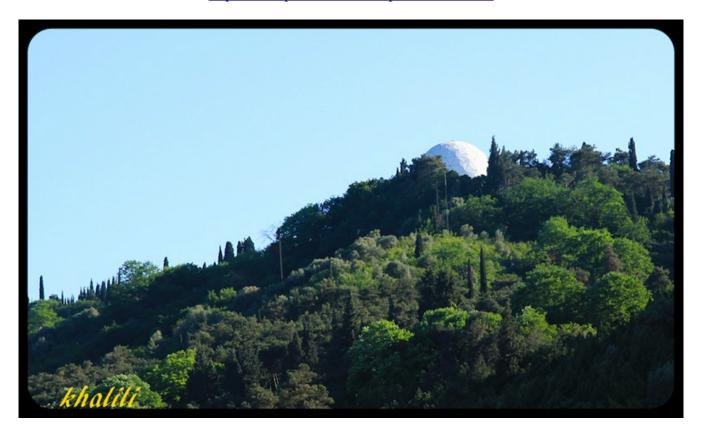
The volume is SECRET.

Ref. article has, however, been recently declassified.



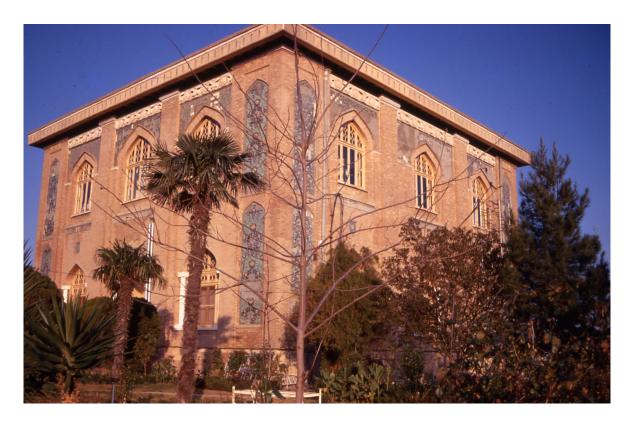
Safi Abad site in Google Earth

## $\underline{http://www.panoramio.com/photo/52206805}$



Iran - Mazandaran -behshahr Safi Abad

#### http://www.panoramio.com/photo/7956771



Safiabad Palace from the rear

Comments (18) [Accessed 2011-09-18]

[EDITED]

Eric77584, on July 30, 2008, said:

As a child in the 1970's I spent several years living at Safiabad Air Force Base. Most of the base in the satellite photos seems to be pretty much the same as I remember and seems to be maintained. Does anyone know what the base is used for today?

#### \*\*\*\*\*\*

kim77573, on April 30, 2009, said:

As a child, I also lived at Safiabad from '70-'72. We probably know each other. These photos really bring back memories. Would love to talk to anyone else who lived there.

#### \*\*\*\*\*

stanky, on May 29, 2009, said:

I lived there from 64-67. It was CIA. Iranian Air Force were trained there in electronics. After school we would sneak past the barbed wire and have adventures.

\*\*\*\*\*

Eric77584, on September 24, 2009, said:

Interesting conversation that has been started by this pictures. I haven't been back to this site since I posted the original comment. I was on base from '70-'72 as well. I was 8-10 years old at the time. I lived above the BOQ on the road that went to the T-site. House #9, I think.

\*\*\*\*\*

IOR-, on October 18, 2009, said:

Probably we lived in the next to last home just before the T-site. Those were two home units and the cadet instructor and his wife, a school teacher, lived in the unit just before T-site. We kept in contact for many years after leaving the place, through children etc. It sounds like you lived in one of the two houses above the first VOQ.

\*\*\*\*\*

legreer102, on October 13, 2010, said:

I was there from 76 till the people were evaced out in 79. I lived in the first single person house. Also was the Bendix people.



Note square mesh antenna(?) to left of palace.

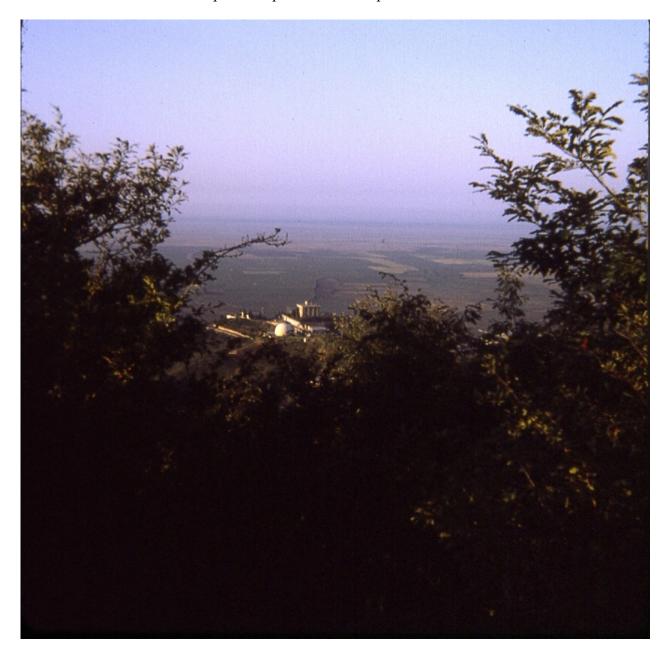


**Safiabad Operations** 









10-70 Safiabad from Ridge [Presumably 10-70 means October, 1970]

# http://www.panoramio.com/photo/7956800



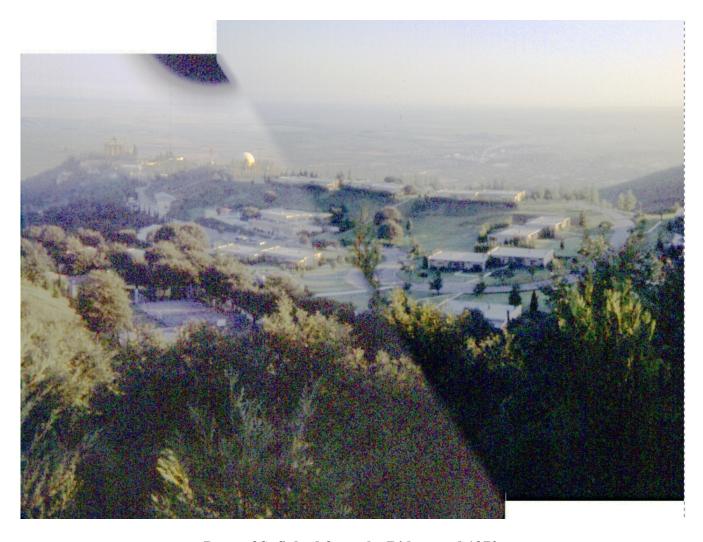
Safiabad Palace and Support Buildings

## $\underline{http://www.panoramio.com/photo/8685664}$



Pano of Safiabad from the Ridge road 1970

#### http://www.panoramio.com/photo/8685664



Pano of Safiabad from the Ridge road 1970

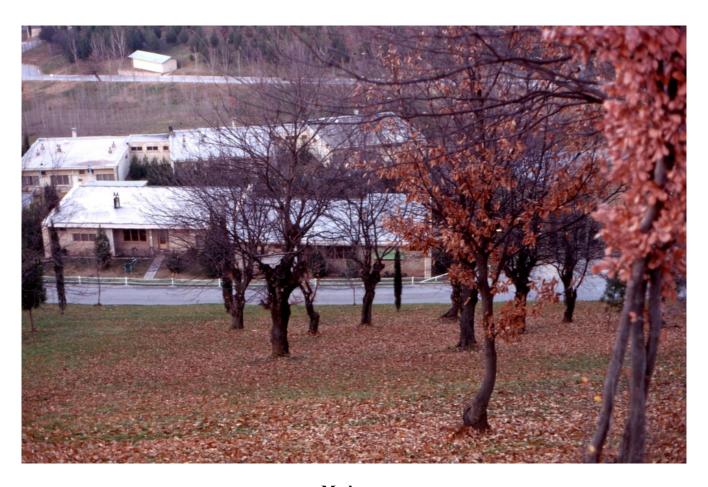
Auto color corrected in GIMP

Note that the buildings are single-floor and behind a ridge that conceals them from the surrounding plain.

 $\underline{http://my.opera.com/Iorwearth/albums/showpic.dml?album=470141\&picture=6504991}$ 



Palace from housing. The roof is my house



My house



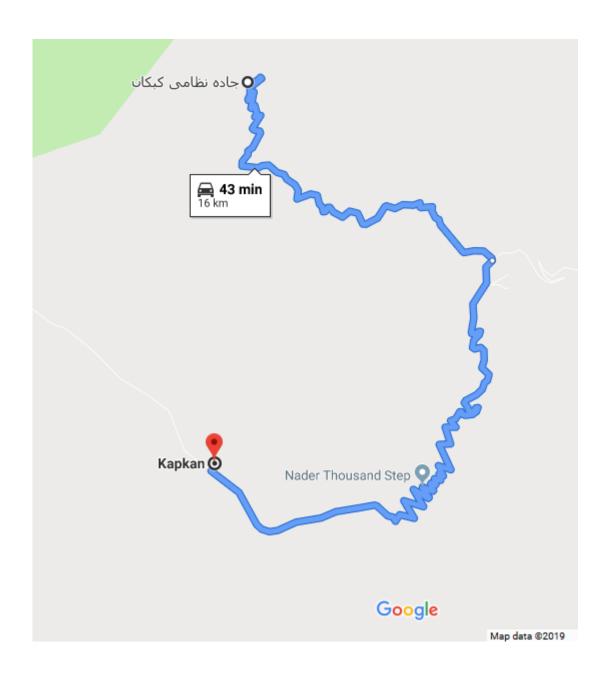
Safiabad from Behshahr [Dasht-e Naz??] Airport

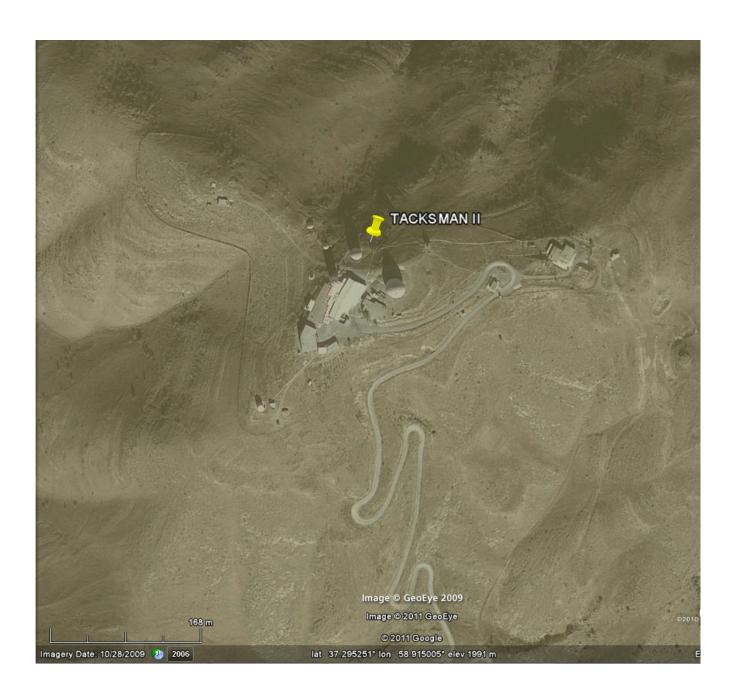


# **TACKSMAN II**

Near Kabkan/Kapkan, Iran 37.295 N, 58.915 E



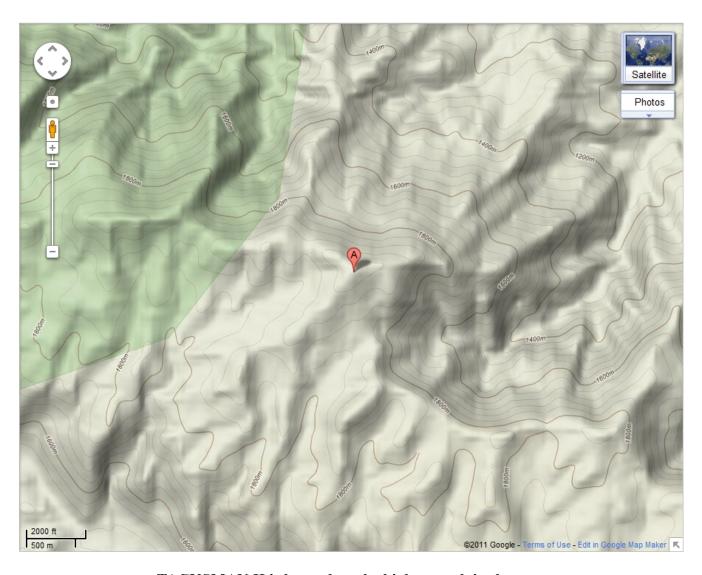






Google Maps photo [Accessed 2019-07-20]

[The dome in the foreground appears to be for a telescope, possibly LAZY CAT (see below).]



TACKSMAN II is located on the highest peak in the area

https://www.nytimes.com/1979/03/03/archives/excia-aide-tells-of-life-at-iran-listening-post-catandmouse-game.html

Ex-CIA. Aide Tells of Life at Iran Listening Post By HEDRICK SMITH New York Times MARCH 3, 1979

WASHINGTON, March 2 — "It was like an operation from the 21st century and it was so ironic," recalled Philip J. McCabe, a self-styled former intelligence analyst who now runs a resort in Maine.

"Here we were out in the wilderness, living among nomads who were mostly living in the 18th and 19th century, and we had this supersophisticated electronic surveillance base."

He was describing the incongruities of Kabkan, the remote American intelligence outpost overlooking the Soviet frontier, straining with its advanced Buck Rogers surveillance antennas for electronic signals from Soviet missile tests at Tyuratam, 650 miles to the northeast.

Mr. McCabe, a 31-year-old former Air Force sergeant, called The New York Times and offered information about his tour at Kabkan in 1973 and 1974. He drew a picture of a remote region, with roads cut sharply into the sides of mountains. The listening post was perched at 6,500 feet, overlooking what he called "the open Russian frontier — I mean there were nomads who used to wander back and forth across the border with the seasons."

"This was a supersophisticated base," he said, "but it was vulnerable because we were so close to the Russian border. In fact, we csed to be buzzed sometimes by Soviet aircraft. The Russians used to get permission from the Iranian Government to do flyovers when they had military maneuvers up there off the Indian Ocean. They would fly over our base by a few hundred feet and take photographs."

#### Cat-and-Mouse Game

In a telephone interview, Mr. McCabe gave a picture of the cat-and-mouse game being played by the Russians and Americans in the remote Iranian mountains.

"They were interested in our equipment, in our antennas, because we were always getting new experimental antennas and other equipment," he said. "From the size and shape of our antennas they could figure out what we were looking for and what frequencies we were monitoring."

Once the Russians worked out the American capabilities and intentions, he said, "they would take various means to try to fool us, trick us, and try to stop us from acquiring information on their missile development."

Mr. McCabe said he had been recruited by the Central Intelligence Agency its two bases in Iran because he had me a specialist on monitoring Soviet rocket experiments while serving as an Air Force sergeant at the American listening Post in Peshawar, Pakistan.

#### First Sent to Benshahr

After joining the agency in 1971, Mr. McCabe said, he was sent to the C.I.A. facility at Behshahr, on the Caspian Sea, which he described as being within commuting distance of Teheran. He said it was a larger facility than Kabkan, where about 15 to 18 Americans, with Iranians as clerks, cooks, technicians and guards, manned an electronic outpost on a mountain perch. Another three or four would be resting in a valley base that had a swimming pool, tennis court and a private airstrip.

"We would go down there for a few days to relax," he recalled. "Twice a week an American plane would come up from Teheran and bring us food and our supplies. Morale was good, the compensation was good. The plane would take our data. But when there was a special event, one of us would courier it. One of us would take the data immediately to the United States so it would be there within 29 hours."

Although he was paid \$27,000 a year plus an ample expense allowance whenever he traveled, Mr.McCabe said that he resigned from the C.I.A. in November, 1979, after three years in the two Iranian listening posts. He returned to Maine to get a master's degree in business administration. Two years ago he bought his own resort, The Moorings, at Pine Point outside of Portland.

"I was shocked when I saw all the business about Kabkan on TV last night," he said. "I was shocked to see it identified as a C.I.A. facility because it could be dangerous if any of those Americans was still there. You're sure they are all out?"

Mr. McCabe had been hesitant to speak until he was assured that the Government said all 22 technicians from the outpost had left Iran.

https://www.washingtonpost.com/archive/politics/1979/05/20/irans-airmen-keep-us-listening-posts-intact-and-whirring/

Iran's Airmen Keep U.S. Listening Posts Intact and Whirring By William Branigin
The Washington Post
May 20, 1979

A secret American monitoring post abandoned Jan. 31 by Central Intelligence Agency technicians, is still in working order and is being kept that way by Iranian Air Force personnel who show signs of pro-American, anticommunist sentiments.

The Iranian airmen are under orders to maintain the facility just the way the Americans left it until the two governments decide what to do with it.

So far no decision appears imminent. Authorities say there have been no negotiations on either removing the post's sophisticated equipment or letting the Americans back in to resume running it. The latter prospect, they say, appears highly unlikely.

No U.S. officials have been to the Behshahr station, which overlooks this town near Iran's Caspian Sea coast, or to a similar post on a remote mountaintop near Kabkan in north-eastern Iran since the posts were evacuated in the turmoil of the Iranian revolution.

American technicians who were evacuated in late February from the Kabkan post after having been held captive by revolutionaries said the facility was vital for verification of Soviet compliance with the strategic arms limitations treaty.

After the stations were abandoned, U.S. officials also expressed concern that sensitive equipment and materials might fall into the wrong hands and be passed on to the Soviets.

A visit to the Behshar post Thursday by two American correspondents showed security to be rather weak. The post's 30-foot-high white radar dome and nearby radio monitoring and relay towers were found to be intact. Big air-conditioning units were still keeping the dome climate-controlled, and the steady whir of machinery indicated that the equipment behind the structure's locked doors was still functioning.

"We haven't done anything with these devices," said Sotvan Javaheri, a shy, 23 year-old second lieutenant who is in charge of the facility. "Anytime you come here you will see that everything works, even the lights."

The equipment runs on Behshahr electricity, but generators are designed to cut in automatically if the power fails. Javaheri said his men were keeping the generators topped with fuel oil.

"We don't have any orders from the U.S. government," Lt. Javaheri said. "But the [Iranian] Air Force has told us to keep everything working until the Americans tell us what we should do with it."

He said townspeople, long barred from the site when it was run by Americans under the government of the deposed shah, could come and see the dome on visiting days. "But nobody can go inside it."

Javaheri said he was the only one at the post who knows the combination for a lock consisting of five black buttons on the facility's steel double doors. Nor is anyone else allowed inside a windowless operations bunker built into the hilltop just below the white bubble, which sits on the grassy surface like a huge golf ball.

The whirring and purring of electronic equipment inside the facility has raised speculation that it may be continuing to transmit data on Soviet missile tests and military communications back to the United States via satellite. A knowledgeable foreign source today dismissed this idea, however, saying technicians were needed to run the Behshahr post and similar facilities.

Javaheri, who received some training in the United States, was reluctant to describe his ventures inside the dome. He explained in English that it was dark and he didn't see much. Then, in an aside to a companion, he said in Persian, "I don't want to get in trouble with the CIA."

Most of the visitors to the hilltop compound are mainly interested in seeing a 16th century palace on its grounds which commands an excellent view of the town below and the Caspian coast about nine miles to the north.

The palace, once the summer residence of the Savafid dynasty monarch, Shah Abas, was formerly the headquarters of the monitoring post, which was established 20 years ago. A radar dome still sits in front of the palace, plainly visible from the highway linking Behshahr with other Caspian coastal towns.

"After the revolution people were curious to see the palace," Javaheri said. "For them it is a historical place. Most people don't have the education for taking much interest in the dome. They just say, 'ooh, look at the big ball."

Javaheri said he had received six months of training as a "missile minder," or officer who commands a missile silo, at U.S. bases at Van Nuys, Calif., and San Antonio, Tex. "I like American people," he said.

"No Russians have been here," Javaheri said. "We wouldn't let them come in."

Despite his assurances, it seemed debatable whether the guards would be able to tell the difference between Soviet agents and other visitors who wanted to tour the facility.

In any case, according to an informed source, a spy could not hope to learn much from such a visit. The source tended to dismiss the value of any intelligence that could be gleaned even by entering the radar dome or its command bunker. All the top-secret cryptographic gear at the facility has been "taken care of," he said.

It was unclear, however, what, if any classified technical manuals or other documents remained at the site. According to a reporter who visited the Behshahr installation immediately revolution, the place bore the look of a "latter-day Pompei."

Clothes and personal effects were abandoned in the Americans' homes, indicating a hasty departure that might not have afforded enough time to destroy sensitive materials. Beside the radar dome were six metal barrels marked "document destroyer drum type without igniters" - all of them unused.

Lt. Javaheri said he is careful about who comes into the compound. He said he keeps it under th control of the approximately 50 airmen under his command and only allows militiamen from the local revolutionary committee to man a checkpoint at the entrance to a nearby access road.

He indicated that he distrusted the committee gunmen, hinting that he was unsure of their loyalties and that they could be Communists. Besides, he said, they were inexperienced in handling their weapons and not as reliable generally as his own men.

People can come on Mondays but we don't let just anybody in because some Iranians are Communists and they shouldn't come here," Javaheri sai although it was unclear how visitors were screened for political persuasions.

At night the dome is guarded by two airmen armed with Iranian-made G-3 automatic rifles.

Armed airmen also guard the compound's main entrance gate, and a lone sentry is positioned halfway down the access road. His sentry box is linked to the base by telephone.

The Lieutenant said he had taken it upon himself to have the personal belongings of the departed Americans packed in containers ready for shipment back to the United States whenever he gets the word to send them.

Asked if he thought the Americans could return to the post, he said, "I don't know. It's not in my hands."

Given the present political climate in Iran and the anti-American sentiment of the followers of Ayatollah Ruhollah Khomeini, authorities say there is virtually no chance that such stations can be reopened under the Islamic republic.

Most of the 32 brick bungalows that once belonged to the resident American personnel have been sealed, but station employes still trim the lawns every once in awhile.

Except for the palace on a rise overlooking the entrance and the white radar dome visible behind a stand of trees a few hundred yards away, the post resembles an American suburb.

American cars are very much in evidence and there are road signs in English.

A reminder that this is an illusion comes at twilight with the wail of a muezzin, or Moslem prayer caller, rising up clearly from the town below.

And meanwhile, the white dome, now illuminated around its base by floodlights, drones on – unattended.

# **Developments Post-1979**

Satellite photography available as of the date of this writing indicates that Iran has maintained the TACKSMAN facilities and has been active at TACKSMAN I since at least 2006. A hilltop adjacent to the TACKSMAN II base underwent leveling in 2019 in a pattern suggesting it was being prepared for a large antenna or, possibly, an optical telescope.

#### TACKSMAN I

Summary: In the period subsequent to 2004, three 8-meter steerable dish antennas were installed at a site centered at 36.6841 N, 53.5277 E. Available imagery shows two 8-meter antennas at the site in 2004 – their date of installation is unknown. Subsequently, the antennas were seen pointing at different azimuths ranging from east to southwest. Association with satellites in geosynchronous orbit seems likely, but confirmation awaits further analysis.



The following images show the appearance of the antenna field over time and the changing pointing azimuths of the antennas. For reference the individual antennas are given the arbitrary designations NW, NE, C, SW and SE:

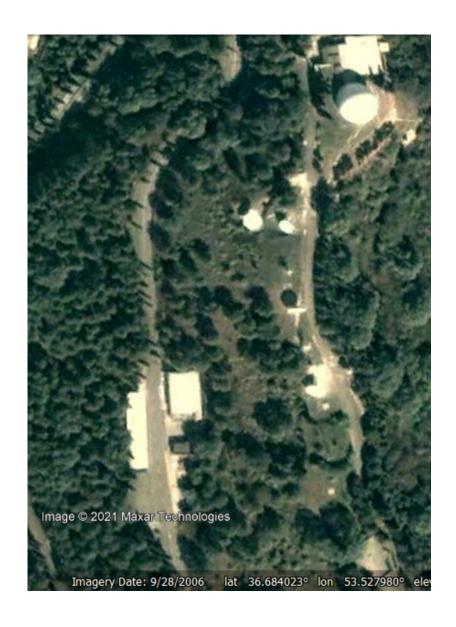
Summary Table of Pointing Azimuths

Date	NW	NE	C	SW	SE
2004-08-30	198	196	Absent	Absent(?)	Absent
2006-09-28	Vertical?	210	180 (Horizontal?)	Absent(?)	Absent
2013-10-16	141	147	120	277(?)	137
2015-05-29	233	201	128	223	172
2016-06-19	222	191	158	216	156
2018-09-12	225	205(?)	180	267	158
2019-03-09	243	219	192	263	190
2020-07-16	233	204	163	204	210
2021-07-20	238	205	213	204	209

Note: NW and NE are present in the earliest available satellite imagery of August 2004 but absent in ground-level photography of the early 1970s (see above).



Date NW NE C SW SE 2004-08-30 198 196 Absent Absent(?) Absent



Date NW NE C SW SE 2006-09-28 Vertical? 210 180 Absent(?) Absent (Horizontal?)



 Date
 NW
 NE
 C
 SW
 SE

 2013-10-16
 141
 147
 120
 277(?)
 137



 Date
 NW
 NE
 C
 SW
 SE

 2015-05-29
 233
 201
 128
 223
 172



 Date
 NW
 NE
 C
 SW
 SE

 2016-06-19
 222
 191
 158
 216
 156



 Date
 NW
 NE
 C
 SW
 SE

 2018-09-12
 225
 205(?)
 180
 267
 158



 Date
 NW
 NE
 C
 SW
 SE

 2019-03-09
 243
 219
 192
 263
 190



 Date
 NW
 NE
 C
 SW
 SE

 2020-07-16
 233
 204
 163
 204
 210



 Date
 NW
 NE
 C
 SW
 SE

 2021-07-20
 238
 205
 213
 204
 209

## TACKSMAN II

Images showing initial site preparation activity at 37.2963 N, 58.9131 E.











Site on 2021-09-09. No progress since 2019-08-20 is obvious.

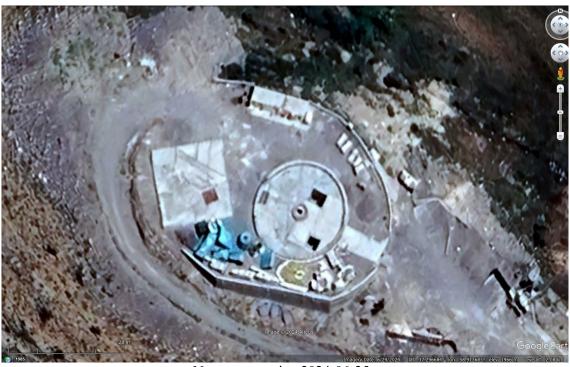




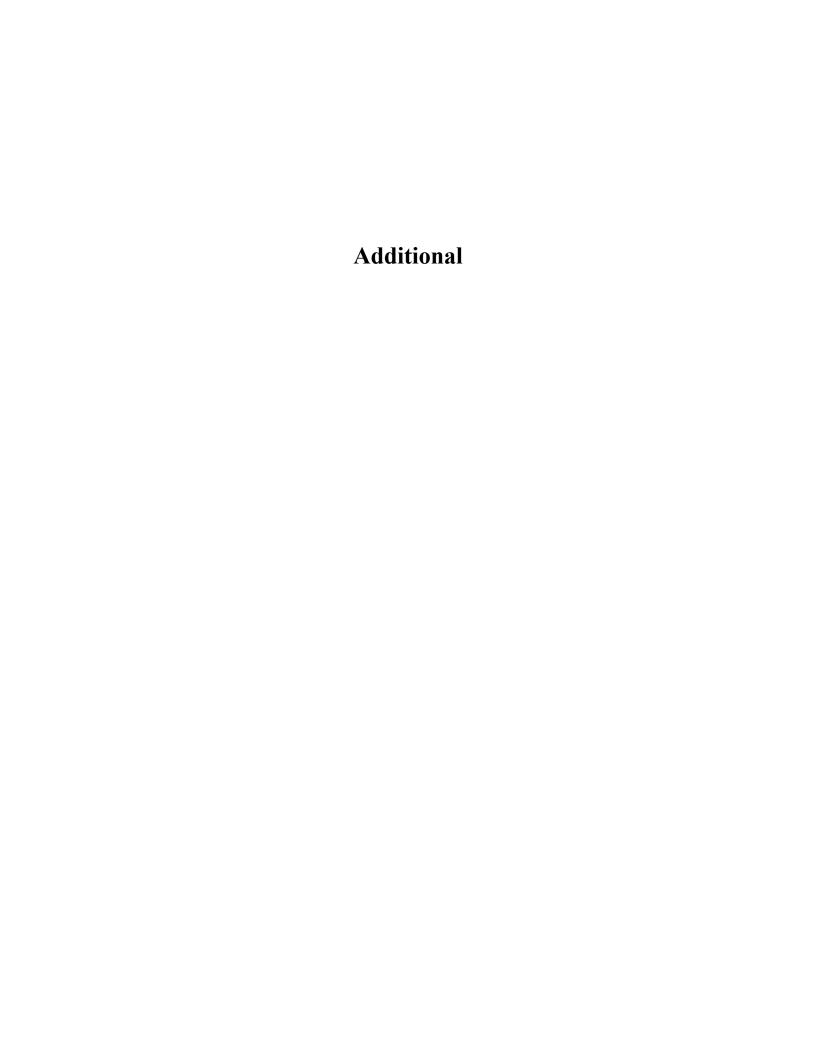
Comparison of the sizes (40 meter diameter circles) of the site preparation and the largest previously existing dome at TACKSMAN II



Site overview 2024-06-24



New construction 2024-06-25. The circular structure is 20 meters in diameter and appears to be the base for an altazimuth mount.



## From the Shadows by Robert M Gates

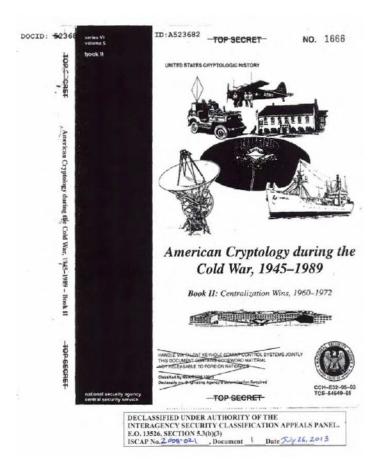
The telemetry issue was made harder by the fact that the Iranian revolution had eliminated U.S. access to its Tacksman monitoring sites in northern Iran and significantly reduced the quality and quantity of telemetry we could collect. Those in the Senate skeptical of the treaty knew this and used it to full advantage. The senior intelligence community leadership, the SCC, and the Congress spent an extraordinary amount of time and effort in the spring of 1979 figuring out how to replace the Tacksman sites. The answer was found in China.

The Wizards of Langley by Jeffrey T. Richelson Westview Press Basic Books. Kindle Edition ISBN 0-8133-4059-4

The loss of the stations was damaging in both an intelligence and a political sense. The Iranian sites had unique capabilities. In 1979, a worst-case view was given by one official: Kabkan is not replaceable. No tricks are going to overcome that in the short run, and the short run could be three or four years. It is going to affect our capability on verification. I don't think people realize how important that base was, not just for SALT, but generally for keeping up with the Soviet missile program. It provided basic information on Soviet Soviet missile testing and development. You're talking about a pretty big loss. It's serious...

Also left behind in Kabkan was a system designated LAZY CAT, which had been only recently installed in reaction to concern expressed by intelligence directorate analysts that the Soviets might be testing an antisatellite laser weapon at Sary Shagan. But neither signals intelligence nor imagery was conclusive. In an attempt to provide answers, the Office of SIGINT Operations installed a system similar to the TEAL AMBER space surveillance telescope at Malabar, Florida. The expectation was that if the Soviets were conducting such tests, the laser signal would "scatter stuff our way" after hitting the target, according to one CIA officer knowledgeable about the project. That same official, William "Al" Nance, was dubious about whether the project would have provided any intelligence of value—even assuming the Soviets were conducting such tests and not simply using the laser for tracking. Potential problems included the need for the LAZY CAT system to be looking in the right direction as well as the need for clear air and an absence of cloud cover. Nance assessed the probability of success as "near zero."

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SUBJECT:	Conversation Defense,	n with the 25 October	Secretary of	B.		
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tnat but, to better some work carefully alternative supplement	TACKSMAN altrove ahead it of the additions of the sust for this was interest signal to not on feed hor at the divide mission alto also lootals. I told	litional fure satellite purpose seed in making oise ratio, ins and recession of expend actions k at whether him I didn!	nding would the and that the semed very hing those important in told him sivers. We appears between to make this ever we should think ever	I pope primarily expense of gh. He seem ovements who that we we greed that in actions to a better to do this with that would	inted out to mainta med to agra ich would out I would loo preserve elemetry ra h a Fiscal be adequa	that in the ee with lead doing ok more the ecciver. *80 te.
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Wonus, Corley. "The TACKSMAN Project: A SIGINT Success Story." Studies in Intelligence, Fall 1991. (Also reprinted in Cryptologic Quarterly, Vol. 12, 1993.)