

WHAT WE ARE DOING WITH SURPLUS ICBM COMPLEXES

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THE United States Air Force spends more money yearly than any other government department or agency: some \$20 billion to approximately \$5 billion spent by the National Aeronautics and Space Administration. In keeping with such great fiscal responsibility, the Air Force is both cost-conscious and economy-minded. Thus when faced with the massive disposal job resulting from obsolescence of early intercontinental ballistic missiles, it did a great deal of head scratching. So far, the Air Force has apparently scratched its head in the right places, for the money we are saving from salvage and sales is quite gratifying.

Our problem was (and still is): How do we dispose of all those expensive Atlas and Titan launch facilities now that they are surplus to the strategic inventory?

The phase-down of Atlas E and F and Titan I created one of the largest disposal tasks the Air Force has undertaken since World War II. It is also the first disposal job of its kind that we have faced. We had 149 operational Atlas and Titan launchers, located on 113 separate pieces of real estate scattered from the East Coast to the West Coast—

specifically from Plattsburg AFB, New York, to Beale AFB, California.

We had fewer complexes than missiles because the Titan I housed three missile silos per complex. Including all the stored operational test missiles, those still on manufacturers' production lines, and the spare missiles owned by the operational units, a total of 216 missiles became surplus. The overall investment in the three weapon system programs, including R&D, had been \$5.5 billion.

Even if we had had to spend that sum of money with no thought of financial recoupment, we would still have had to do it: national security demanded massive deterrence, and these first-generation missiles filled the void known as the "missile gap." So it is an extra dividend that from our disposal program already nearly \$1 billion worth of equipment (based on original cost) is scheduled for scientific, educational, and service reuse as well as reuse by other government agencies.

First it was decided that this total of 216 surplus missiles should be stored for use as suborbital boosters in subsequent R&D projects. For the next five years a total of 133 suborbital missions have been identified for these

216 boosters. The remaining 83 may eventually be committed to missions not now envisioned.

As far as economical use of these surplus missiles is concerned, this arrangement is good business. It costs \$3.4 million to buy an Atlas missile and launch it for a Nike mission; but one of these surplus or outmoded missiles can be stored, overhauled, modified, and launched for less than \$1.5 million. That means we can expect a saving on these 133 missions of more than \$250 million in the next five years. This sum is not included in the \$1 billion in equipment to be reused already mentioned.

retention of selected complexes

What to do with the expensive complexes from which these missiles were to have been launched? Which ones should be retained? How should they be stored in a preservation status? We settled on 44 complexes for Atlas F's and 15 for Titan I's, a total of 59 retained complexes. (Since there are three launchers in a Titan I complex, the 15 complexes contain 45 Titan I launchers.)

The retention of these 59 complexes provided the time necessary to accomplish a sound evaluation of any possible future Air Force missions for these facilities. Because of the attractions of hardness, self-sufficiency, and dispersal of these complexes, a study was a prerequisite to any further consideration of dismantling and disposal. Twenty-seven Atlas E launchers (nine at each of three different bases) were considered too soft to be of future Air Force value and were declared excess. Three Titan I complexes at Larson AFB, Washington, and 24 Atlas F complexes at Lincoln AFB, Nebraska, and Schilling AFB, Kansas, were declared surplus because these bases were being closed. These complexes must be disposed of.

A later study of the 59 retained sites showed that only a small number of complexes—estimated at less than 10 percent—would be needed for new Air Force missions. The actual number of complexes needed for new and presently envisioned missions was finally reduced to four:

(1) The Elizabeth Titan I complex at Lowry AFB, Colorado, as a data-processing center.—A hardened facility for storage of records and other data is essential, our study group believes, for future command and control requirements. A Titan I missile complex would not only provide adequate space, with a nuclear hardness protection factor, but would also accommodate a data-processing center. The Elizabeth Titan I complex at Lowry was selected as most suitable for the new mission. A study contract for \$450,000 has been made available to prove or disprove the feasibility of this utilization.

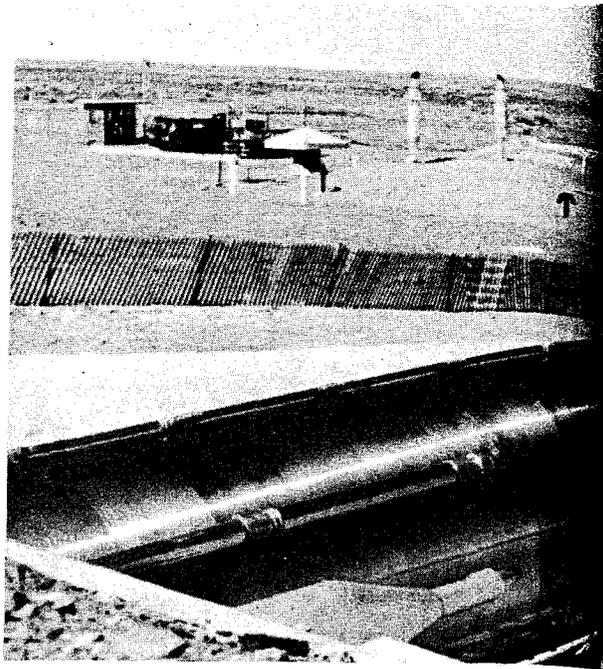
(2 and 3) The Bennett Titan I complex at Lowry and the Oreana Titan I complex at Mountain Home AFB, Idaho, as atmospheric observation stations.—Our study group believes that hardened atmospheric observation stations will be required in the near future. Preliminary studies indicate that this pair of complexes will meet the requirement and that the necessary modifications will be economically and technically feasible.

(4) The Chico Titan I complex at Beale AFB, California, as a communications center.—Our study group found that a hardened, self-sufficient, remotely located Titan I complex could make an ideal facility for a communications and control center. A RAND Corporation study "On the Possibility of Using Titan I Sites as Command and Control Centers" has established that conversion of a Titan I complex for this mission would be more economical than construction of a new facility. The complex at Beale was selected as the most feasible and cost-effective in which to locate such a facility, particularly since a commercial airfield is adjacent to the site.

Presentations have been made to the Air Staff requesting approval of the resources required to support these recommended missions. A final decision is pending.

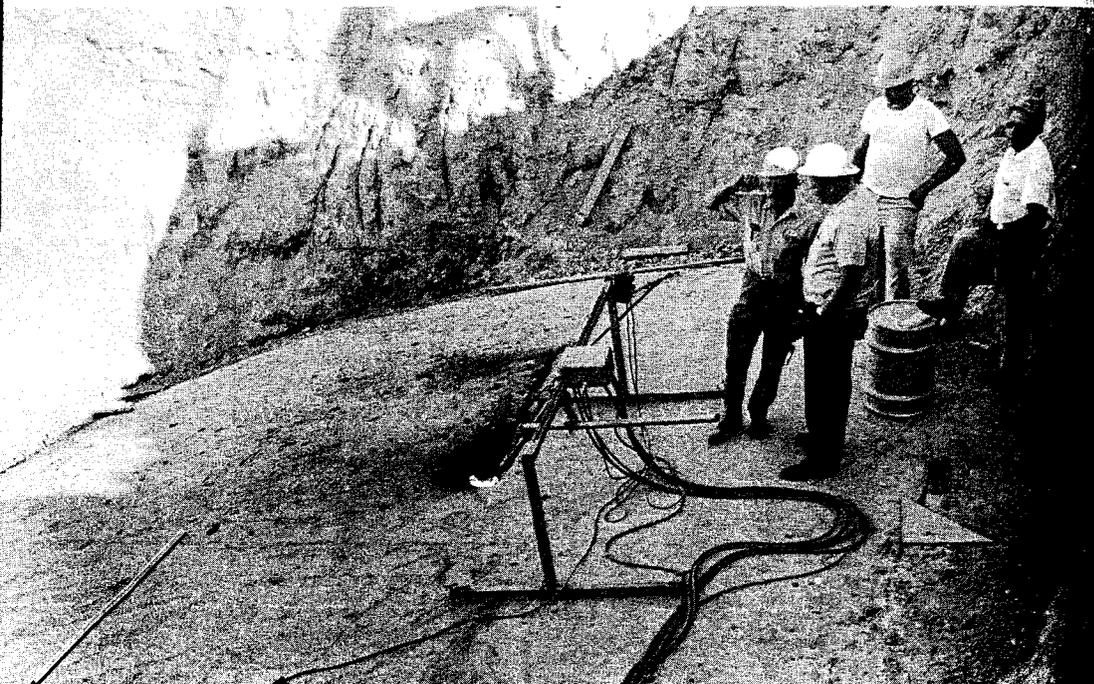
Although all Atlas E and F and Titan I complexes (except Chico) were determined to be excess to known Air Force needs, we nevertheless retained withdrawal rights and authority should any of these complexes be needed for a new Air Force mission not yet known.

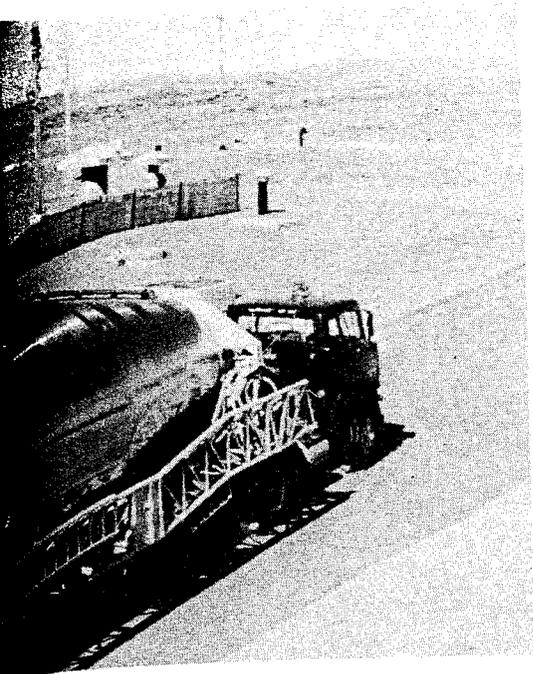
Site Deactivation



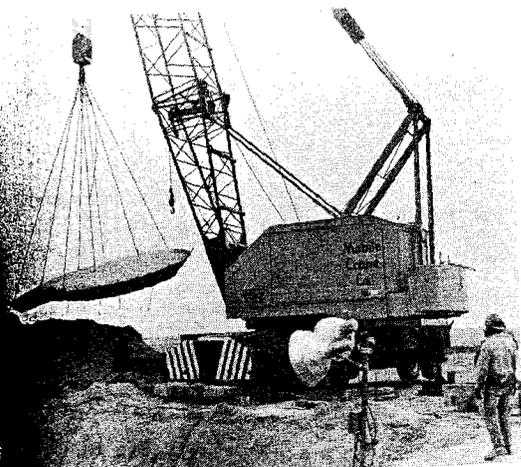
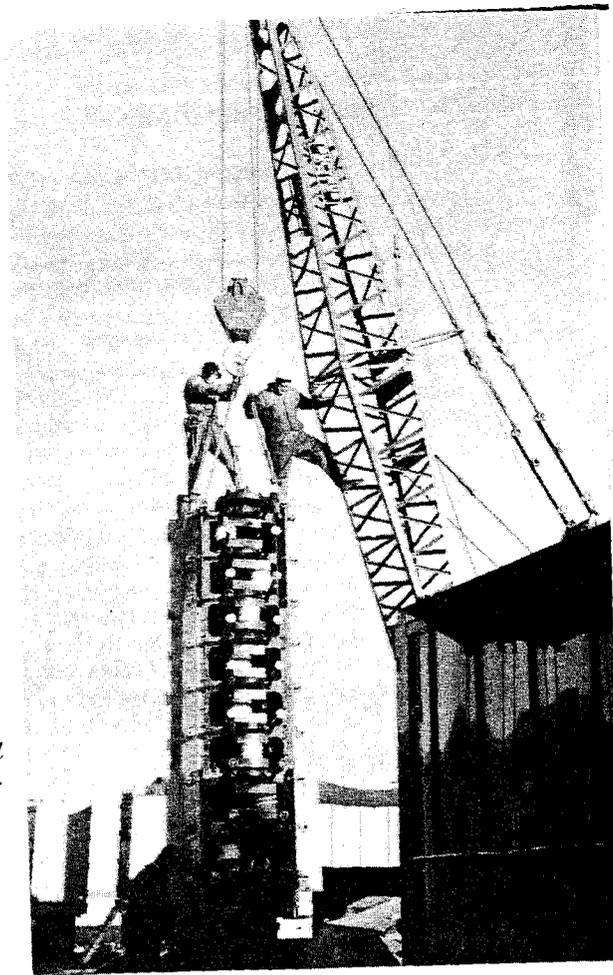
From its deactivated launch site at the Fairchild AFB, Washington, complex, an Atlas E heads for storage at the San Bernardino Air Materiel Area, California.

To remove the generator from an underground power plant required use of a special torch to open a big enough hole through the thick roof.

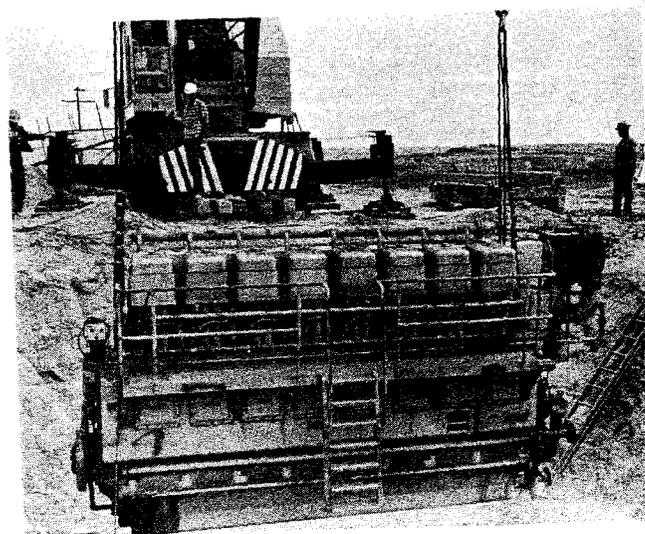




The generator crankshaft is hoisted from an elevator shaft by a crane.



A 32-ton section of roof is lifted from the underground power plant.



The 50-ton, 1500-kilowatt diesel generator reaches the surface. Components of the power plant will be put back together and reconditioned for new use, probably in South Vietnam.

Assuming a cost of \$24 million to duplicate the usable portions of one of these underground hardened buildings, the annual expense of storing it until utilized would amount to only .01 percent of its overall structural value—a nominal cost.

The Air Force has advertised the availability of the surplus complexes to all commands, requested review by the commands, convened an all-ConUS-commands symposium on the subject, and conducted cost-effectiveness studies in detail. It therefore seems reasonable to state confidently that the remaining complexes have been considered in depth for conversion to new missions and are indeed surplus to Air Force needs. (General Services Administration will retain one Titan I complex at Lowry for transfer to the City of Denver. csa will also retain 17 other complexes to be converted to other uses by federal agencies, such as the National Science Foundation for an "on the horizon" celestial body observatory. This is where part of the \$1 billion savings will be realized.)

As an economy measure we determined that commercial power should be provided to all the surplus complexes. Although this switchover was initially expensive, the cost was amortized by August 1965, and 24-hour Air Force operation of diesel generators, requiring operators, parts, fuel, and maintenance, would have been more expensive during the 10 to 15 months required for disposal and some dismantling of the complexes.

disposal of equipment

A major part of our disposal job is the redistribution of surplus equipment. Normally, redistribution of assets and disposition of surplus equipment and real estate (to be sold by csa) would take 15 months and cost an estimated \$12 million. This schedule was shortened through joint screening and review of the lists of available equipment by csa, Defense Supply Agency (dsa), the three services, and all other federal agencies.

Invitations for bids were advertised to all potential salvage contractors. Already more than \$3.5 million has been realized from sal-

vage contractors. Still to be realized are the proceeds from sale of all the real estate.

An interesting aside relates to some "cross-fertilization." dsa personnel includes Army, Navy, and Air Force members. During a discussion of dsa's part in the Air Force disposal program, a Navy officer referred to the service-salvage type of contract by which the Navy dismantles and disposes of surplus or outmoded battleships. A participating Air Force officer pricked up his ears at this reference, asked some pertinent questions, and the upshot was that the Air Force borrowed the Navy's battleship method for disposition of its surplus missile equipment.

Briefly, the service-salvage type of contract works this way: "service" refers to the removal of equipment by the private contractor for reutilization by dOD and other federal departments and agencies. In this way the contractor pays for the privilege of obtaining the remainder of the equipment as salvage for himself. Any money received by dsa as contract manager is credited to the Department of Defense. The service-salvage contract is even more attractive to the government, since 150 to 200 sac military personnel at each affected base have been performing dismantling tasks within their capability.

When the service-salvage contractor has stripped the silo, as a safety measure the metal doors will be welded in a closed position and the gate of the chain link fence locked. This will reduce Air Force caretaking expenses to practically nothing. The complex in this condition will go to csa for sale as real estate.

If necessary, the complete complex could be released to csa for dismantling and disposition as real estate, and any money received would revert directly to the U.S. Treasurer. Close cooperation with csa and dsa will be continued throughout this period of service-salvage contracts, which ends in April 1967. Turnover of 21 complexes to csa for sale as real estate was accomplished in less time than normally required.

Two Atlas F missile sites at Plattsburg AFB were selected as pilot models for awarding service-salvage contracts. Both these silos had a history of excessive water leakage (more

than 60 gallons an hour), and the estimated cost to connect commercial power to one silo was more than \$30,000. In addition to these reasons for early removal from the inventory, the purpose of letting contracts on these particular complexes was to test the market from a salvage contractor's viewpoint and later to measure the profit or loss to the successful bidder. Defense Logistics Services Center of DSA was the contract manager.

GSA and DSA both have advertised, through national news media, the availability of the complexes as well as individual pieces of surplus equipment. We hope this advertising will not only promote broader interest in the surplus equipment and real estate but also attract more contractors interested in performing salvage or dismantling operations.

To interest and instruct customers in the equipment, an Atlas silo at Lincoln AFB was dismantled as a demonstration. The equipment was placed on display in a large hangar on the commercial side of the field. Signs on each piece of gear described its use, function, and original cost. The cost of this six-week demonstration was 8000 military man-hours and \$18,000 for two cranes. This price was small compared with the gain already realized through obtaining equipment for DOD reutilization, and it is expected to be much smaller relatively when all the gain is counted.

disposal considerations

Some of the background of our disposal actions and proposed actions will indicate the great care that was exercised before conclusions, firm or tentative, were reached.

We extensively developed and expanded the ideas and suggestions made for disposal of the surplus launch complexes. The second report, "Atlas E and F and Titan I Facility Utilization Proposals," dated 5 February 1965, recommended an engineering survey contract to include compatibility and cost effectiveness on the four most promising potential missions:

- (1) Automatic Digital Information Network (AUTODIN),
- (2) command and control centers,
- (3) communications centers, and
- (4) Minuteman storage.

The RAND Corporation was requested to undertake a study and research project to consider the practicality and feasibility of converting the surplus facilities to new Air Force uses. RAND's study, "On the Possibilities of Using Titan I Complexes as Command and Control Centers," reached the conclusion that "... Titan I operational squadrons being deactivated would provide useful and economical sites for housing command and control centers that might be needed in the near future."

This report contained mathematical formulas for cost computations and was used as the basis for several Air Force reviews. In general it provided the background for helping to persuade new users of the practicality, feasibility, and cost effectiveness of converting Titan I and Atlas facilities to new missions:

—as major USAF headquarters. A Titan I complex or series of complexes at Denver, Colorado, was considered and reviewed in detail as the possible location of a survivable, alternate major headquarters as compared with the present location. An Air Staff study group published its report on this subject in June 1965. Although the Titan I facility with its hardness was attractive, there were other considerations such as personnel manning and costs of initial communications installations which were of overriding concern. For this particular requirement, use of a Titan I complex was determined to be uneconomical.

—as reconstitution team center. Extensive study was made by the Sacramento Air Materiel Area of the Chico Titan I complex at Beale AFB, for use by an emergency aircraft maintenance team and for storage of emergency hospital equipment. Many factors were considered in this evaluation. However, the annual cost of facility operation, including permanently assigned personnel, was too high in view of the relatively low priority of the mission. It was decided not to use a Titan I facility for this purpose.

—as storage for surplus Minuteman missiles. The Boeing Company had made a preliminary review from an engineering standpoint of the feasibility of storing surplus Minuteman missiles in Atlas F silos. It is possible to store

about 18 missiles in an upright position in two layers in an Atlas F silo. Air conditioning and quantity distance capabilities (the explosion separation distance necessary for safety of personnel and equipment) were the attractive characteristics. Because of wide dispersal across the nation and lack of suitable roads or railroads, all Atlas F sites were eliminated from this consideration except the three at Vandenberg AFB, California. Atlas engineers from San Bernardino Air Materiel Area drew up detailed engineering plans for conversion of a silo to Minuteman storage requirements. Ogden Air Materiel Area, as Minuteman project office, was assigned responsibility for investigating methods of storage of the surplus missiles. At present, although the Vandenberg Atlas F silos are not surplus as real estate, it appears that the surplus Minuteman missiles will be stored by other methods.

DURING the past two years many suggested uses have been studied and reviewed by the ConUS commands and the Air Staff to insure that no Air Force requirement has been overlooked prior to dismantling and disposing of these surplus complexes. Of the 59 complexes available, retention of the four Titan I complexes represents the total confirmed Air Force

requirement, the other 55 being in our current disposal program.

Configurations of complexes for other federal agencies vary considerably as a result of equipment removal. In some only the minimum environment equipment remains; in a few, almost all equipment remains. All diesel generators and associated gear will be removed for use in Southeast Asia. Immediate availability of more than 200 of the diesel generators alleviated an emergency situation by providing electrical power for new airfields in Southeast Asia. The diesel generator industry was unable to supply this many diesels on such short notice.

Our disposal effort, necessary for economic reasons, has not yet ended, but all known potential follow-on Air Force missions for the phased-out facilities have been thoroughly reviewed to insure that they are not dismantled and disposed of until there is no further U.S. government need for them. The high cost of these complexes was justified, regardless of profit or loss, when they were needed to meet the threat then existing in the world. Now that national security has benefited to the full from their use, we will still salvage a pretty penny of the taxpayers' dollars.

Hq United States Air Force