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BY THE COMPTROLLER GENERAL

# Report To The Congress

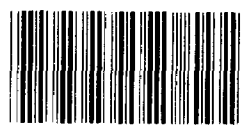
OF THE UNITED STATES

## Better Management Needed In DOD To Prevent Fraudulent And Erroneous Contract Payments And To Reduce Real Property Maintenance Costs

The Department of Defense (DOD) spends about \$1.9 billion annually on real property maintenance and repair. Requirements for additional work are being identified faster than funds become available. DOD could reduce costs and accomplish more work by improving its contract award and administration procedures.

Contract administration at the Army, Navy, and Air Force installations GAO visited was not adequate to prevent intentional or unintentional overcharges.

Several installations paid for much more work than was done; some ordered unnecessary work and accepted inferior work; and lower prices were not obtained at some because requirements forecasts were unrealistic, work specifications were inappropriate or poorly written, and price proposals were not properly analyzed.



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PSAD-80-14  
JANUARY 9, 1980

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COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-196952

To the President of the Senate and the  
Speaker of the House of Representatives

This report recommends strengthening the internal controls in effect at local procurement activities at military installations to ensure the Government gets what it pays for and that work set out in contracts is actually performed.

We made this review to determine whether Department of Defense installations are susceptible to the same type of problems that have plagued the General Services Administration. Although we see no need for more laws or more procurement regulations, there is a need to enforce the current laws and regulations.

Copies of this report are being sent to the Director, Office of Management and Budget; the Secretaries of Defense, Army, Navy, and the Air Force; and other Federal agencies that may have a special interest in this report.

*James A. Heath*  
Comptroller General  
of the United States



COMPTROLLER GENERAL'S  
REPORT TO THE CONGRESS

BETTER MANAGEMENT NEEDED IN  
DOD TO PREVENT FRAUDULENT AND  
ERRONEOUS CONTRACT PAYMENTS  
AND TO REDUCE REAL PROPERTY  
MAINTENANCE COSTS

D I G E S T

*See* The Department of Defense (DOD) says it is providing the maximum maintenance, repair, and minor construction of its real property possible with the resources available; about half the work is accomplished through contracts. Meanwhile, valid maintenance requirements have been identified faster than funds become available. As a result, the backlog of work not done was due to a lack of resources--\$2.3 billion at the end of fiscal year 1978 and estimated to increase another \$151 million by the end of fiscal year 1980.

FINDINGS AND CONCLUSIONS

At 10 Army, Navy, and Air Force installations, GAO found that some contractors had been substantially overpaid. (See ch. 2.) Because the installations' inspection and payment verification procedures were inadequate, they paid for work not done, for inferior quality work, and for the same work more than once. For example:

- Fort Sam Houston paid a contractor for painting 343,900 square feet of surface area on 42 buildings; the buildings measured 193,270 square feet, a 78-percent overpayment.
- Fort Knox paid a contractor \$419 for painting a small building that had not been painted.
- The Navy paid two different contractors for painting the same houses in the Sewells Point Area at about the same time. Available records do not show whether the houses were painted twice.

--Fort Hood paid a contractor for painting occupied quarters even though he actually painted unoccupied ones and should have charged about 25 percent less.

Effective inspection procedures and internal controls could have prevented or provided early detection of these overpayments. For most contracts reviewed, Government inspectors were responsible for verifying the quality and quantity of completed work. Their reports provided the basis for approval of the contractors' payment requests. However, the reports were often unreliable because they contained erroneous or incomplete information. Detailed records of work measurements and computations supporting the reports were often not maintained.

GAO concluded that frequent independent tests are needed to verify the quality of each inspector's work. In addition to reducing the potential for collusion between Government and contractor personnel, independent tests could detect other problems faced by inspectors, such as excessive workload, lack of training, misunderstanding as to their responsibility and authority, and insufficient familiarity with contract provisions.

Most overpayments occurred on "unit price" contracts. Payments were computed by multiplying a unit price by the quantity of work performed, expressed in such terms as square feet, square yards, board feet, or service calls. Since these contracts often require physically measuring the quantity of work done, they are more difficult to administer and more susceptible to intentional or unintentional overcharges than lump-sum contracts which provide fixed prices for specific jobs.

GAO found fewer and less significant overpayments at the Air Force installations where lump-sum contracts reduced the potential for abuses. Some overcharges occurred and GAO concluded that payment verification procedures should be strengthened to provide better control.

Military installations could further reduce maintenance and repair costs by improving their contracting methods and procedures. (See ch. 3.)

Opportunities for reducing costs were particularly apparent where installations used requirements contracts to obtain maintenance services. Requirements contracts are awarded to contractors who bid the lowest total price on the Government's estimated requirements.

Since the work actually ordered often differs from the original estimated requirements, these contracts are susceptible to a competitive strategy known as unbalanced bidding. (See p. 17.) By bidding low on work they expect not to be ordered and very high on work expected to be ordered, contractors obtain the contracts and receive higher payments than unsuccessful bidders would have received for the same work.

On six Army contracts, prices offered by unsuccessful bidders would have reduced costs by about \$707,000, or 16 percent of total costs. Unbalanced bidding can be eliminated by developing accurate requirements estimates or by using different contracting methods or bid evaluation procedures.

#### RECOMMENDATIONS

The Secretary of Defense should see that the Secretaries of the Army, Navy, and Air Force strengthen controls over the procurement of maintenance and repair services. (See pp. 30 and 31.) The services should consider deficiencies identified in this report and in ongoing internal audits. (See pp. 28 and 29.) Action should also be taken to collect past overcharges identified in this review and in the Defense audits.

Information developed on contracts at three different installations has been referred to the Department of Justice for investigation of possible Federal criminal law violations. The

specific cases referred are not identified in this report to avoid jeopardizing these investigations. All contractor names and contract numbers have been omitted.

DOD COMMENTS

DOD comments were not received in time to be included in this report.



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ABBREVIATIONS

DOD	Department of Defense
GAO	General Accounting Office
GSA	General Services Administration
NFEC	Naval Facilities Engineering Command
SACC	San Antonio Contracting Center



## CHAPTER 1

### INTRODUCTION

The Department of Defense (DOD) spends about \$1.9 bil-  
lion annually for maintenance, repair, and minor construc-  
tion of its real property, but the backlog of that work con-  
tinues to grow. The backlog of maintenance and repair--  
planned work which was not done due to a lack of resources--  
was \$2.3 billion at the end of fiscal year 1978 and is esti-  
mated to increase another \$151 million by the end of fiscal  
year 1980. In April 1979, the Deputy Assistant Secretary  
of Defense (Installations and Housing) testified before sub-  
committees of the House Appropriations Committee that the  
maximum amount of maintenance is being provided with the  
available resources. He also testified that the backlog  
has grown because valid maintenance requirements have been  
identified faster than funds have become available.

DOD accomplishes over half of its maintenance and  
repair workload through contracts. Table 1 shows DOD's  
fiscal year 1978 contract awards by type of service.

Table 1

<u>Service</u>	<u>Awards</u>
	(millions)
Painting	\$ 65.9
Building maintenance, repair, and alteration	558.7
Grounds maintenance and repair	19.3
Roads maintenance and repair	57.0
Other maintenance and repair	<u>396.4</u>
Total	<u>\$1,097.3</u>

Maintenance and repair service contracts for individual  
military installations are generally awarded and administered  
locally. This report discusses how installations we reviewed  
are managing their contracts.

### SCOPE OF REVIEW

During 1978, there were extensive Federal investigations  
and media coverage of fraud and mismanagement in General  
Services Administration (GSA) contracts for maintenance of  
public buildings. Overcharges by contractors and kickbacks to

Government employees emphasized the need for effective controls to prevent and detect fraud. Since DOD contracts have the same potential for mismanagement, our review was to determine if (1) controls were adequate to ensure proper contract payments and (2) the required services were obtained economically. The contracts reviewed at each installation were generally for recurring work, such as painting, building repair, floor covering, roofing, and paving.

During this review, we audited contract records and interviewed responsible personnel to identify contract administration procedures and problems. We also inspected and measured completed contract work and interviewed buildings occupants to verify that services paid for were received. Our review involved work at the following locations:

Army:

- Fort Sam Houston, Texas
- Fort Hood, Texas
- Fort Knox, Kentucky
- Fort McClellan, Alabama

Navy:

- Naval Facilities Engineering Command,  
Atlantic Division, Sewells Point  
Area Field Offices, Virginia
- Naval Training Center, Orlando, Florida

Air Force:

- San Antonio Contracting Center, San Antonio,  
Texas (provides procurement support to four  
area Air Force bases)
- Barksdale Air Force Base, Louisiana
- Wright-Patterson Air Force Base, Ohio
- Maxwell Air Force Base, Alabama

## CHAPTER 2

### CONTRACT OVERPAYMENTS--INADEQUATE INSPECTION

#### AND PAYMENT VERIFICATION AT FAULT

The Army and Navy installations overpaid maintenance and repair contractors because internal controls broke down. In the absence of effective controls, contractors billed and were paid for work not done. Overpayments also occurred because

- work was not billed in accordance with contract provisions,
- inferior work was accepted,
- less expensive materials were substituted for those specified in the contract, and
- some work was paid for more than once.

Overpayments occurred and went undetected because of several deficiencies relating to work inspection and payment verification. In some cases, contractors' bills were approved and paid without verifying that the charges were proper. In other cases, the contractors' bills were supported by erroneous, false, or incomplete Government inspectors' reports.

Overpayments occurred mostly on "unit price" contracts for which payments were computed by multiplying a unit price by the quantity of work performed expressed in such terms as square feet, square yards, board feet, or service calls. Since these contracts often require physically measuring the quantity of work done, they are more difficult to administer and more susceptible to intentional or unintentional overcharges than lump-sum contracts which provide for fixed prices to complete specific jobs.

We found fewer and less significant overpayments at the Air Force installations where the use of lump-sum contracts has greatly reduced the potential for abuses. Some overcharges occurred and we concluded that payment verification procedures should be strengthened to provide better control.

Information developed on contracts at three different installations has been referred to the Department of Justice for investigation of possible Federal criminal law violations. The specific cases referred are not identified in

this report to avoid jeopardizing these investigations. All contractor names and contract numbers have been omitted.

### ARMY INTERNAL CONTROL PROBLEMS

The Army installations we visited used annual requirements contracts extensively for recurring work, such as painting, building repair, roofing, floor covering, and paving but did not have adequate procedures for administering these contracts. As a result, three of the four installations made significant overpayments to contractors.

#### Payments for work not done

Inflated measurements were a major cause of overpayments. Contractors at Fort Sam Houston, Fort Hood, and Fort Knox billed and received payment for more painting, sandblasting, and floor covering than was done. The following are examples of such overpayments.

--After a test of selected payments on two Fort Sam Houston painting and repair contracts showed sizeable overpayments, we recommended that the Post Commander obtain independent measurements of all prior work. At the conclusion of our fieldwork, 42 buildings had been remeasured. The remeasurements showed that although the Army had paid for painting 343,900 square feet of exterior surface, only 193,270 square feet had been painted. This remeasurement revealed a 78-percent overpayment rate. If this rate occurs on the remaining untested payments, total overpayments will exceed \$300,000. One of the 42 buildings is pictured on page 5.

--We tested payments for four types of maintenance work at Fort Hood and found overpayments of 15 percent or more for three of the four. On floor covering contracts, for example, inflated measurements resulted in payments totaling \$50,570 for work that should have cost \$42,782--an 18-percent overpayment.

--Fort Knox paid for more sandblasting than was done. On one building, for example, the contractor was paid \$1,400 for sandblasting 7,000 square feet of exterior surface, but the building only measured about 3,100 square feet and should have cost \$620.

In addition to the inflated measurements, two installations paid for painting three small buildings which were not painted. Fort Knox, for example, paid a contractor \$419 for



**FORT SAM HOUSTON PAID A CONTRACTOR \$560 FOR PAINTING 28 SQUARES (2,800 SQUARE FEET) ON THIS STONE BUILDING. ONLY 2.1 SQUARES WERE ACTUALLY PAINTED AND THE WORK SHOULD HAVE COST \$42.**

painting the building shown on page 7, but the building was not painted. Although overpayments for the three buildings totaled less than \$500, payments for work not done at all illustrate the need for better inspections.

#### Inferior work

Fort Knox had paid for poor quality painting work on three contracts. Surfaces were poorly prepared (see p. 8), insufficient paint was applied to provide adequate coverage, some areas were not completely painted, paint drippings were on windows, and trim work was uneven or lapped. Although there is no way to quantify the overpayment, we believe they are substantial because deficiencies were found on nearly every building inspected.

#### Work billed and paid incorrectly

Overpayments occurred at Fort Sam Houston, Fort Knox, and Fort Hood because payments were made under the wrong contract line item numbers. At Fort Hood, for example, the contractor was supposed to paint the interiors of occupied quarters, but unoccupied ones were substituted and painted. Unoccupied quarters should have cost about 25 percent less, but no price adjustment was made. The need for an adjustment was concealed from the contracting officer because the inspector's reports and the contractor's bill showed that the originally planned quarters, rather than the substitutes, had been painted.

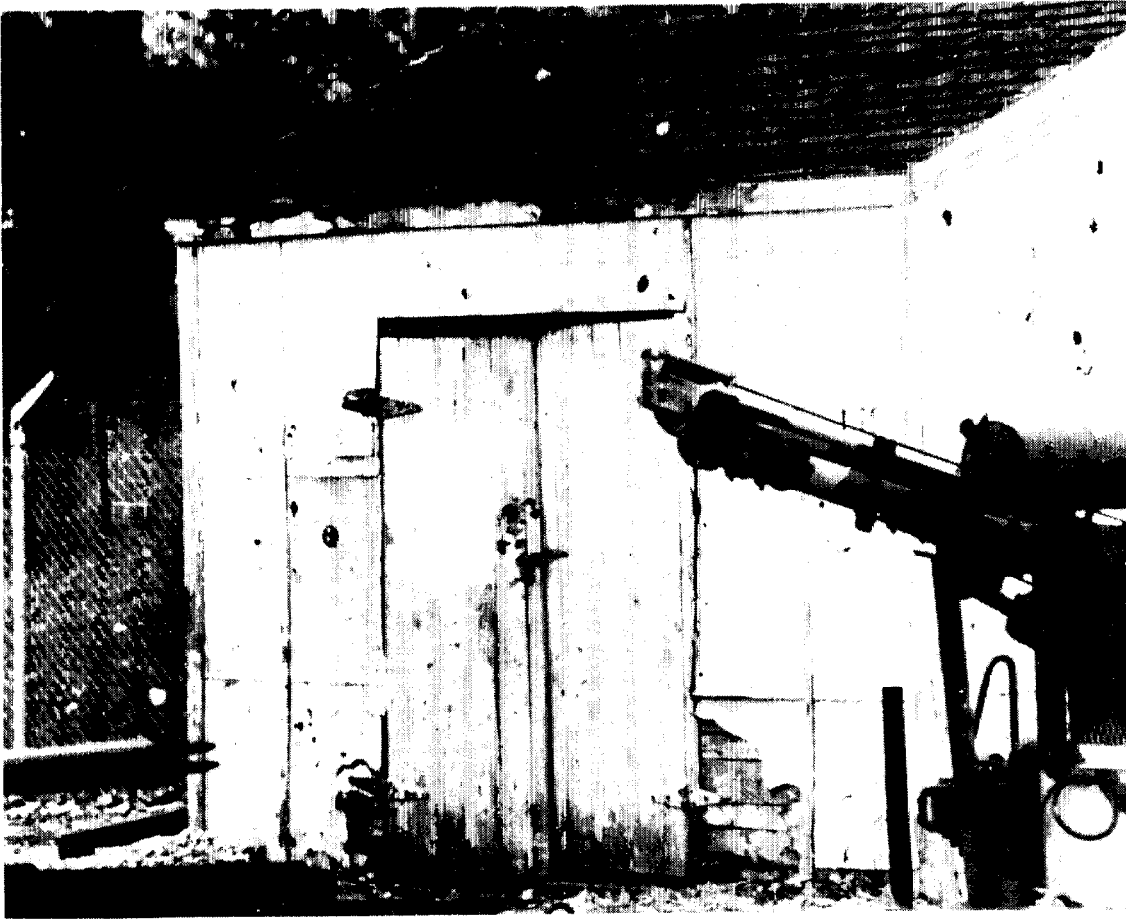
#### Duplicate work

Fort Knox and Fort Hood paid for work performed twice. Fort Hood, for example, paid \$3,200 to have 14 small buildings painted; 6 months later they reordered the same work at a cost of \$4,600. We could not determine if the buildings were actually painted twice. Army regulations state that exterior painting should not be done at less than 3-year intervals.

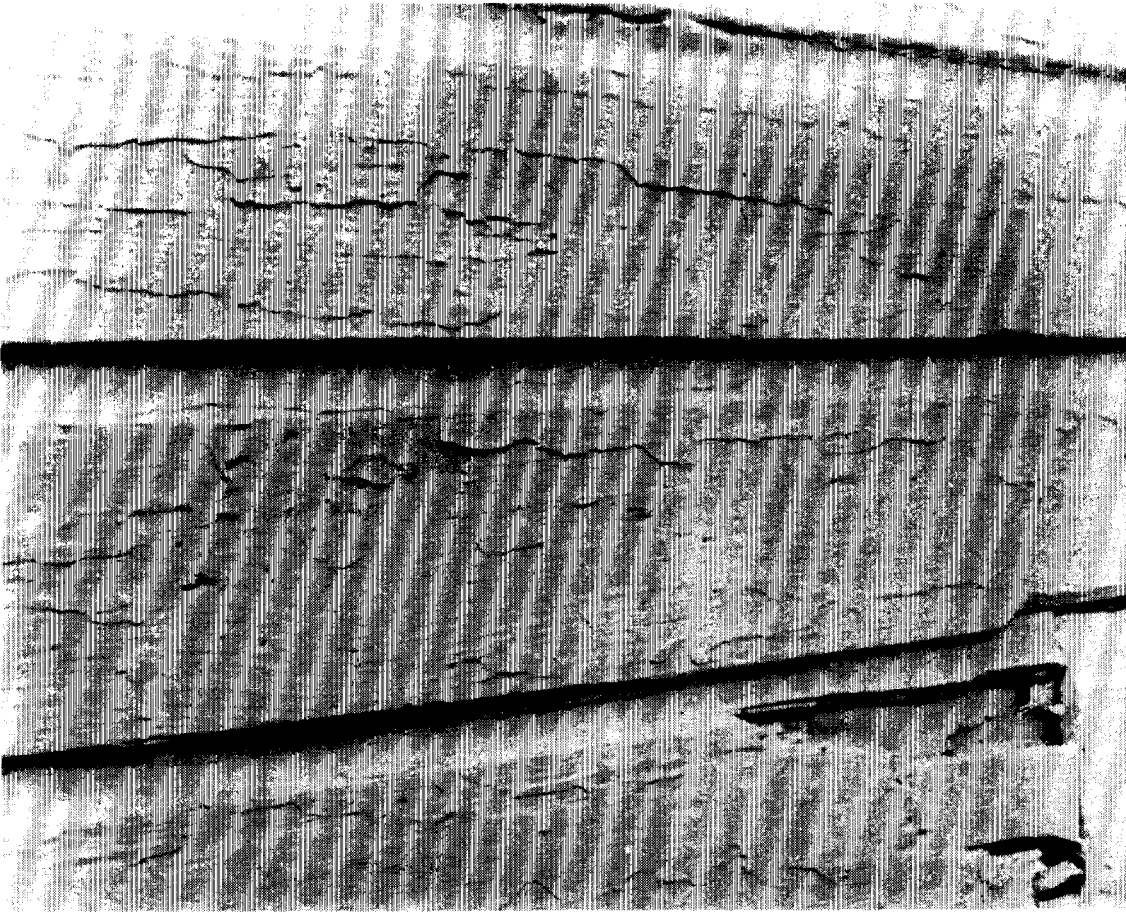
#### Why it happened

At each post, Army inspectors were responsible for verifying the quality and quantity of completed work, and the inspectors' reports provided the basis for reviewing and approving the contractors' payment requests. We found that the inspectors' reports supported the contractors' billings, but the reports were unreliable and, in some cases, lacked sufficient detail to serve as a basis for payments.





FORT KNOX PAID \$419 FOR PAINTING THIS BUILDING BUT THE WORK OBVIOUSLY WAS NOT PERFORMED.



**DUE TO POOR SURFACE PREPARATION ON THIS FORT KNOX BUILDING, PAINT WAS PEELING AND FLAKING OFF EASILY.**

Our efforts to determine exactly why the reports contained inaccurate information were hampered by the lack of detailed supporting records. At Fort Sam Houston and Fort Hood, for example, inspectors' reports showed the square footage painted in each building, but the inspectors did not normally retain the field measurements and detailed computations they used to arrive at the reported figures. Because the records were not available, we could not determine whether the inflated measurements resulted from negligence, intent, lack of ability, or oversight. Regardless of the specific reasons for overpayments, we found that the Army had relied on the inspectors' reports without sufficient independent tests to ensure the inspectors were performing properly.

#### Conclusions and agency actions

At the conclusion of our fieldwork, Fort Sam Houston, Fort Hood, and Fort Knox were reviewing prior payments on certain contracts to identify overpayments that should be collected. Officials at Fort Hood and Fort Knox reported that they would improve contract administration to avoid future unnecessary costs. Fort Sam Houston no longer contracts for real property maintenance. This function is now performed by Air Force organizations under a consolidation program planned before our review.

Fort Hood and Fort Knox officials further indicated that additional training for their inspectors would improve the quality of inspections. Fort Hood officials indicated that they need additional personnel to improve the quality of inspections and measurements of their increasing contract workload.

#### NAVY INTERNAL CONTROL PROBLEMS

The Naval Facilities Engineering Command (NFEC), Atlantic Division, is responsible for contract maintenance and repair of Navy facilities in the Sewells Point Area. In the Sewells Point Area, the Atlantic Division has established two contracting offices to administer and award contracts. Both offices had serious deficiencies in contract administration, and the Navy had made large overpayments on the contracts we audited.

We tested payments on three contracts for painting and other maintenance work in Sewells Point family housing. Two of the three were unit price contracts with payments based on the quantity of work performed. The third contract provided for a lump-sum payment but required the contractor to

perform a specific quantity of work which could be determined only through measurements. Table 2 summarizes the results of the tests.

Table 2

<u>Contract service</u>	<u>Value of billings tested</u>	<u>Correct amount</u>	<u>Net overcharge</u>	<u>Percent overcharge</u>
Painting	\$ 51,860	\$ 36,533	\$ 15,327	42
Painting	3,671	1,971	1,700	86
General maintenance	<u>381,610</u>	<u>232,391</u>	<u>a/149,219</u>	64
Total	<u>\$437,141</u>	<u>\$270,895</u>	<u>\$166,246</u>	61

a/Documentation of the work done in some houses was not available, and overcharges were estimated using available records for other houses.

As shown in table 2, overcharges for the work tested ranged from 42 to 86 percent. Based upon these rates, the Navy may have overpaid about \$897,000 on total contract payments of \$2,341,000. The overpayments occurred and went undetected for a variety of reasons, all indicative of poor inspection and payment verification procedures and weak internal controls.

#### Painting contracts

Overpayments on the two painting contracts occurred because the Navy paid for painting more square feet than were actually painted and for a more expensive paint than was used.

The inspector for one painting contract incorrectly computed square footage and produced measurements which on an average were grossly overstated. The contractor challenged some of the inspector's low measurements, but did not challenge the inflated measurements. For example, when the inspector reported measuring 3,264 square feet in a room about one-fourth that size, the contractor billed for the inflated amount.

The inspector for the other painting contract verified that each housing unit had been painted, but did not verify the square footage claimed by the contractor or that utility rooms and baseboards had been painted. As a result, the contractor was paid for about 70 percent more area than

was actually painted. There were spaces on the work request forms for each unit where the inspector could have recorded square feet and noted work not done, but the spaces were left blank.

The price for painting with oil-based enamel was about 35-percent higher than the price for latex paint on both painting contracts. The contracts called for painting wood trim with the oil-based enamel, but housing managers, acting outside their authority, asked the contractors to use latex on the trim. The contractors apparently complied with the requests but billed for trim work at the more expensive, oil-based enamel prices. Because of a lack of coordination among the housing managers, contract administrators, and inspectors, the incorrect billings went unchallenged.

### Housing maintenance

Government inspection on the housing maintenance contract was almost nonexistent, and many of the contractor's payment requests were approved and paid, although neither the inspectors nor the building occupants had certified that the work was satisfactorily done or even done at all. Also, there were no effective procedures for (1) verifying quantities of work, (2) ensuring that payments were in accordance with contract provisions, and (3) ensuring that work was paid for only once. The contractor had taken advantage of these weaknesses, as indicated by the following examples.

- The contractor billed and was paid for excessive quantities of wallpapering and painting. On one building, for example, the Navy paid six times the proper amount for interior painting.
- The contractor billed and was paid more than once for the same maintenance work. After installing a new furnace in one unit, for example, the contractor billed and was paid the full price in 2 consecutive months.
- The contract provided for various types of maintenance work to be paid at a fixed price per service call, but the contractor billed and was paid for excessive numbers of service calls. In one case, for example, the contractor was to receive \$9 for 1 service call to repair 17 interior doors; however, he billed a separate service call charge for each door.
- The maintenance contractor and a painting contractor, discussed earlier, billed for painting some of the

same housing units at about the same time, and both received full payment. We could not determine from available records which contractor painted the units.

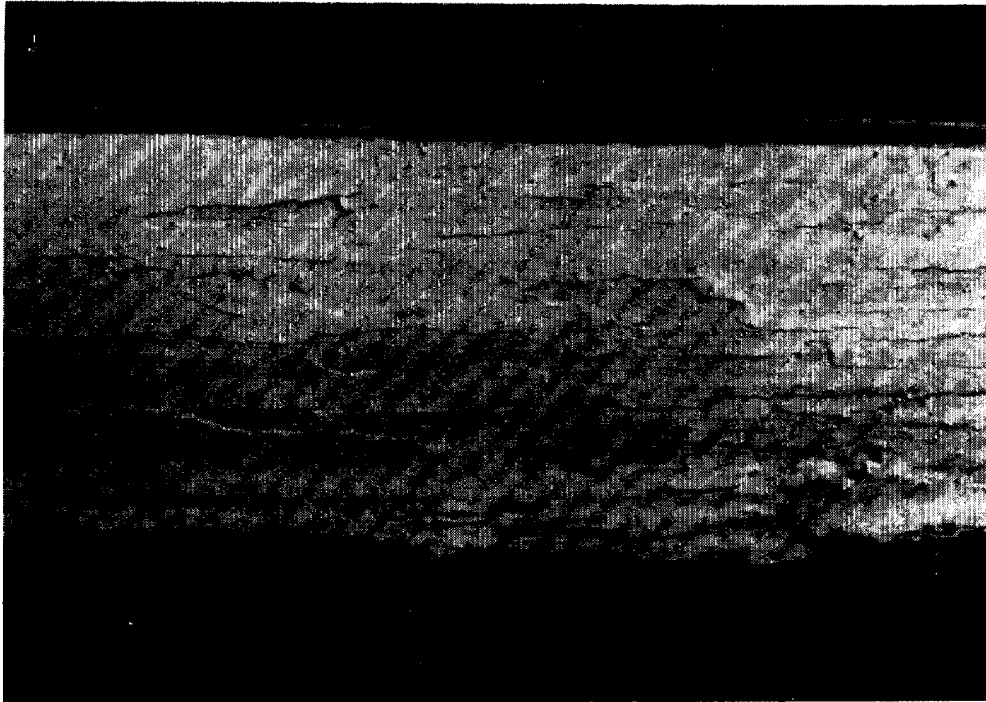
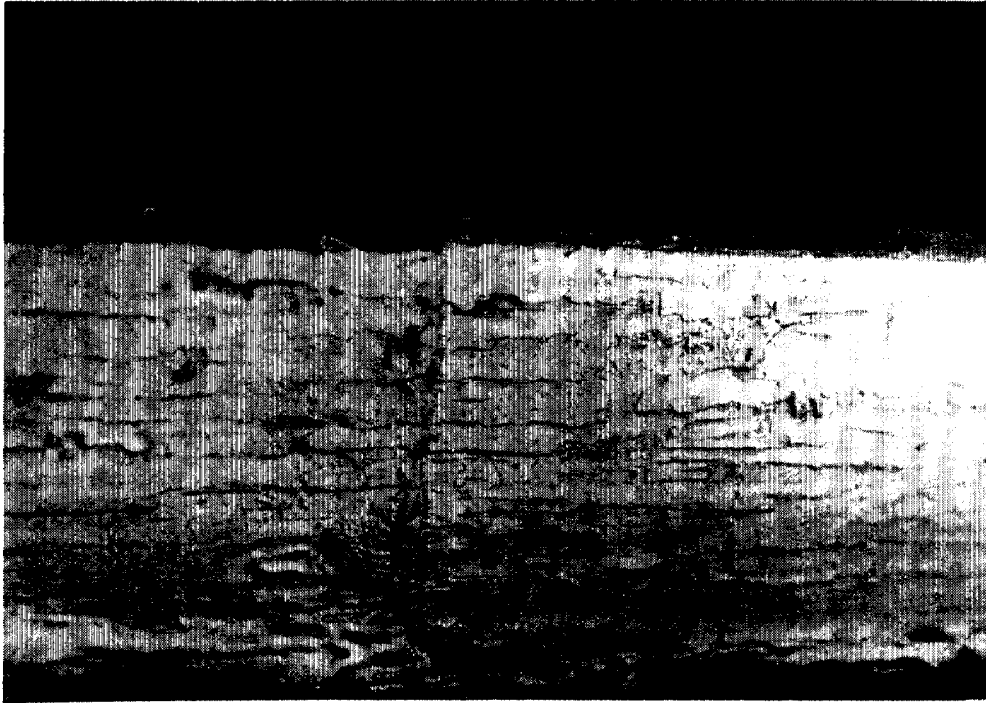
#### Other contract administration problems

In addition to direct overpayments, there were other contract administration deficiencies which had resulted or could result in unnecessary costs.

- One work order placed under a paving contract called for an asphalt overlay on a parking lot. The work was needed to correct a drainage problem. Because of a lack of coordination between the requesting organization and the contract administrators, no grading was done when the asphalt was laid. As a result, the drainage problem was not corrected.
  
- Several housing area managers routinely request that all walls and ceilings in a room be repainted even if only one wall actually needs painting. Furthermore, most units in one particular housing area are completely repainted each year. The managers indicated that complete rooms or complete units were painted so that all walls would be the same shade. In our opinion, it may occasionally be necessary to repaint all walls within a room, but repainting ceilings, closets, and entire units strictly for cosmetic reasons is unnecessary. Also, the cosmetic problems associated with partial painting could be reduced if all contractors were required to use the same shade of white paint.
  
- Inspectors on one contract accepted inferior work. We observed evidence of inadequate surface preparation (see p. 13) and sloppy paint application.

#### Conclusions and agency actions

In our opinion, contract administration procedures for real property maintenance in the Sewells Point Area do not ensure the Navy is getting what it pays for. Inspections need to be more thorough and better documented; coordination between personnel involved in ordering, inspecting work, and approving invoices needs to be improved; and personnel involved in contract administration need to more clearly understand contract specifications and requirements. Also, and perhaps more important, the inspectors' work should be sufficiently reviewed and independently verified to assure they are performing their duties properly.



INFERIOR PAINT WORK AT THE NORFOLK NAVAL BASE.

We advised NFEC officials of the problems we identified, and in most cases NFEC has taken or has planned corrective measures. Regarding inflated measurements, we pointed out that it is unnecessary to physically measure each time a house is painted. Accurate measurements of each type of house could be made on a one-time basis and used to verify future payments. NFEC is developing the standard measurements and will use them to verify payments and to determine the extent of prior overpayments.

#### AIR FORCE INTERNAL CONTROL PROBLEMS

Most real property maintenance and repair contracts at the Air Force installations were lump-sum contracts. Since these contracts usually did not require physical measurements to verify the amount of work done, they offered less potential for overpayments than did the unit price contracts used at Army and Navy installations. However, even the predominantly lump-sum contracts often provided for some portion of the payments to be based on measured quantities, and the Air Force inspectors had some of the same measuring problems as their Army and Navy counterparts.

#### Inflated measurements

Contractors at the San Antonio Contracting Center (SACC) and Wright-Patterson Air Force Base have been paid for more work than was done. On a SACC contract, for example, in a test of payments for painting two family quarters, we found overpayments of 27 percent. A review of administration procedures on this and other contracts disclosed that

- inspectors did not verify contractor claims for some measured work,
- some inspectors did not document their measurements and some reported actual measurements were apparently only estimates, and
- the inspectors' work was inadequately reviewed and verified.

#### Other overpayments

Additional overpayments at Wright-Patterson occurred for the following reasons.

- A contractor was paid for some material more than once and was also paid for materials which should not have been reimbursable.



- A contractor was paid twice for painting one housing unit.
- Prompt payment discounts were not taken.
- The price negotiated for a painting contract modification included \$3,869 for a nonworking supervisor. The contractor did not provide the supervisor, but the contract administrator took no action to enforce compliance or reduce the contract price.

#### Other contract administration problems

In addition to overpayments, we identified other administration deficiencies which could result in unnecessary costs. These deficiencies related to inadequate inventory controls and informal agreements between inspectors and contractors.

SACC and Wright-Patterson contracts for family housing maintenance required the contractors to acquire and maintain supplies of parts and materials. Since the contractors are reimbursed for their purchases, the materials are Government property. Administration procedures for some contracts provided effective control over the supplies, but others did not. On a SACC contract, for example, the inspector had neither taken a physical inventory nor required the contractor to maintain records of the stocks received and used. Consequently, Air Force personnel did not know the value of parts for which the contractor was accountable.

Also, Wright-Patterson inspectors were exceeding their authority by making informal agreements with contractors on changes in work scope. Changes in the work can affect contract price and should be made and negotiated only by the official contract administrators. However, in four instances, inspectors agreed to changes without consulting the administrators. One inspector, for example, agreed to pay the contractor for a second coat of paint at a rate of 75 percent of the cost of the first coat. The contractor has been billing in accordance with this agreement since February 1978, but as of May 1979, the contract had not been modified to allow for these charges.

#### Conclusions and agency actions

In our opinion, the overpayments at SACC and Wright-Patterson could have been avoided by more thorough work inspections and reviews of contractor billings. Inspectors should be required to fully document all measurements used

to determine payments, and the inspectors' work, including control of Government inventory, should be reviewed in sufficient detail to ensure their proper performance. Also, the inspectors should be made aware that they have no authority to negotiate contract changes. Finally, contractor billings should be more thoroughly reviewed to eliminate inappropriate or duplicate reimbursement for materials and to ensure that discounts offered are taken.

Officials at the Air Force installations generally agreed with our findings and planned or took action to collect prior overpayments and establish more effective contract administration procedures.

## CHAPTER 3

### POTENTIAL SAVINGS THROUGH BETTER

#### CONTRACTING PROCEDURES

In addition to the contract administration problems discussed in chapter 2, improvements in contracting procedures are needed at most installations to ensure obtaining the best prices available. Although the potential savings could not be fully measured, we believe that maintenance and repair services could be obtained more economically through increased emphasis on

- planning, estimating, and coordinating contract work;
- developing clear, specific, and appropriate contract specifications; and
- evaluating contractor proposals and negotiating fair and reasonable prices.

#### PREAWARD PLANNING

Effective preaward planning includes (1) identifying the types of work needed, (2) identifying or estimating the required quantity for each type of work, and (3) coordinating the work with other projects to avoid duplications and scheduling conflicts. Because these tasks were performed inadequately on some contracts, there were many undesirable consequences. Some of these consequences are presented under the separate side captions which follow.

##### Unbalanced bidding

Solicitations for requirements contracts usually contain several line items identifying the various types of work to be done and the Government's estimated quantity requirement for each type. During bid evaluation, the bidder's unit prices are multiplied by the quantity estimates, and the contract is awarded to the contractor bidding the lowest total price for all line items. Therefore, the successful bidder may not be the lowest bidder for every line item.

For the above reasons, multiple-line item requirements contracts are susceptible to a competitive strategy known as unbalanced bidding. If, for example, a contractor suspects or knows the Government quantity estimates are inaccurate, he may choose to bid very low on items he believes are overstated and very high on items he believes are understated.

If the contractor's beliefs are correct, he will be required to perform little or no work at the lower prices and much more work than estimated at the higher prices. This can and does result in the contractor being paid more than unsuccessful bidders would have received for the same work.

We found unbalanced bidding on requirements contracts at three Army posts and one Air Force base. Also, the potential for unbalanced bidding occurred at a Navy installation because quantity estimates used to evaluate bids were inaccurate.

To demonstrate the potential adverse effect of unbalanced bidding, we compared amounts paid under eight Army contracts to the amounts unsuccessful bidders would have received for the same work. In six of the eight cases, the unsuccessful bidders would have charged less for the work actually ordered. Table 3 shows that comparison.

Table 3

<u>Installation</u>	<u>Amount paid contractors</u>	<u>Cost based on unsuccessful bids</u>	<u>Potential savings</u>	<u>Percent savings</u>
Fort Sam Houston	\$1,381,686	\$1,085,932	\$295,754	21
Fort Hood	<u>3,111,262</u>	<u>2,699,898</u>	<u>411,364</u>	13
Total	<u>\$4,492,948</u>	<u>\$3,785,830</u>	<u>\$707,118</u>	16

Contractors obviously could not benefit from unbalanced bidding if the Government used accurate quantity estimates to evaluate bids. We recognize that forecasting requirements with complete accuracy is difficult; nevertheless, estimating could be greatly improved. The fact that contractors identify and take advantage of inaccuracies in the estimates indicates that Government contract planners should be capable of correcting the inaccuracies. Inadequate planning rather than unpredictable circumstances caused many of the inaccuracies. For example:

- Although Fort Hood and Sewells Point Area requirements estimates on annual contracts proved to be very inaccurate, the same estimates were used to evaluate bids and award contracts the following year.
- Work orders issued shortly after contract award often exceed quantity estimates for the entire year. One Fort Hood roofing contract, for example, contained an estimated annual requirement for replacing 50 linear feet of roofing gravel stop, but the first work order,

issued 6 weeks after contract award, included a requirement for 3,500 linear feet. This indicates that Army estimators should have known, before award, that their 50-linear-foot estimate was inaccurate because gravel stop does not deteriorate in 6 weeks.

--Some Fort Sam Houston procedures permitted unbalanced bidding because they included requirements to paint the interiors of specified buildings in both an occupied and unoccupied status. Obviously, both conditions would not exist for a particular building, but Army personnel indicated it is sometimes difficult to predict whether buildings will be occupied when they are painted. The successful bidder, however, more accurately predicted building status and unbalanced his bid accordingly.

--Requirements estimates for Fort Knox painting contracts included buildings which had recently been painted as well as buildings scheduled for demolition or already demolished. Other buildings which did need painting were omitted.

Although not a substitute for adequate planning, an alternative bid evaluation procedure developed by GSA could be used to prevent unbalanced bidding. Under this procedure, the procuring activity provides unit prices and estimated quantities for each line item included in the solicitation. Offerors can then evaluate the prices and increase or decrease them by any percentage factor they wish. However, they are only permitted to submit one percentage factor covering all line items. The low bidder is the one offering the largest percentage discount, or in the event all bidders submitted premium factors, the one offering the lowest such factor.

For this procedure to be effective, the procuring activity must establish realistic and accurate line-item prices. The prices should not be based solely on past contract prices which may have been unbalanced. Also, the bidders would still need reliable information on expected quantity requirements.

#### Claim for price adjustment

Inadequate planning can also result in contractor claims for price adjustments. On a paving contract at Sewells Point, for example, the Navy estimated it would place orders totaling \$159,710, but ultimately ordered work costing only \$50,349. The contract provided that the contractor could request an adjustment in unit prices if actual

orders were less than 75 percent of the estimate and the contractor submitted a claim for a price increase. This claim could have been avoided if the contract estimate had been realistic. Rather than forecasting actual needs, Navy personnel had apparently based their estimate solely on past funding levels, a procedure which had proven to be unreliable on the two preceding contracts.

#### Delayed work

Delays or cancellation of contract work caused by inadequate planning can also increase costs. At Wright-Patterson Air Force Base, for example, painting contract work had to be stopped because another contractor was scheduled to make repairs on the same buildings at the same time. The painting was later resumed, but it cost an additional \$6,467.

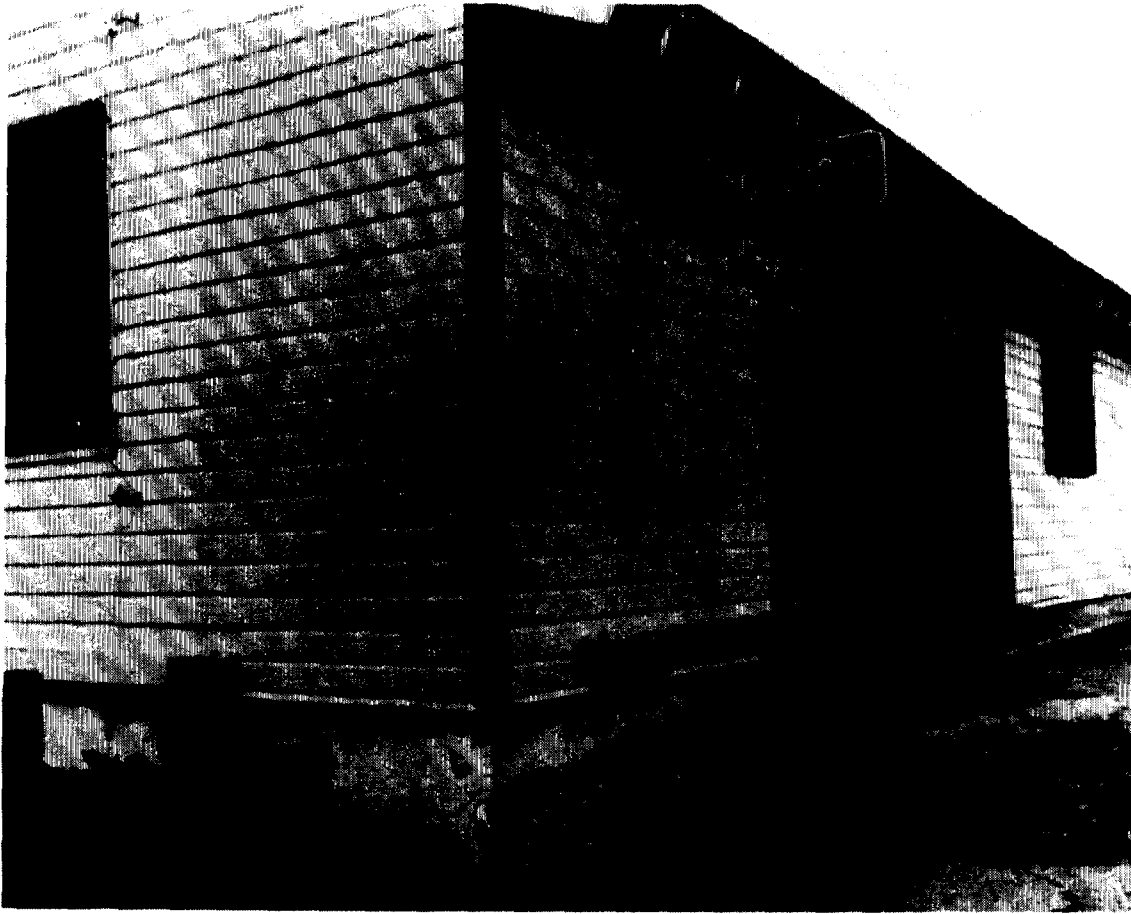
In another case, a Naval Training Center painting contract was canceled after work had begun when it was discovered the buildings needed repairs before painting. Following price negotiation, the Navy paid for units already painted and also paid \$3,034 to compensate the contractor for surface preparation and rework not envisioned under the contract. The Navy could have avoided the administrative costs of awarding, administering, and terminating the contract by identifying the need for repairs before bid solicitation.

#### In-house versus contract work

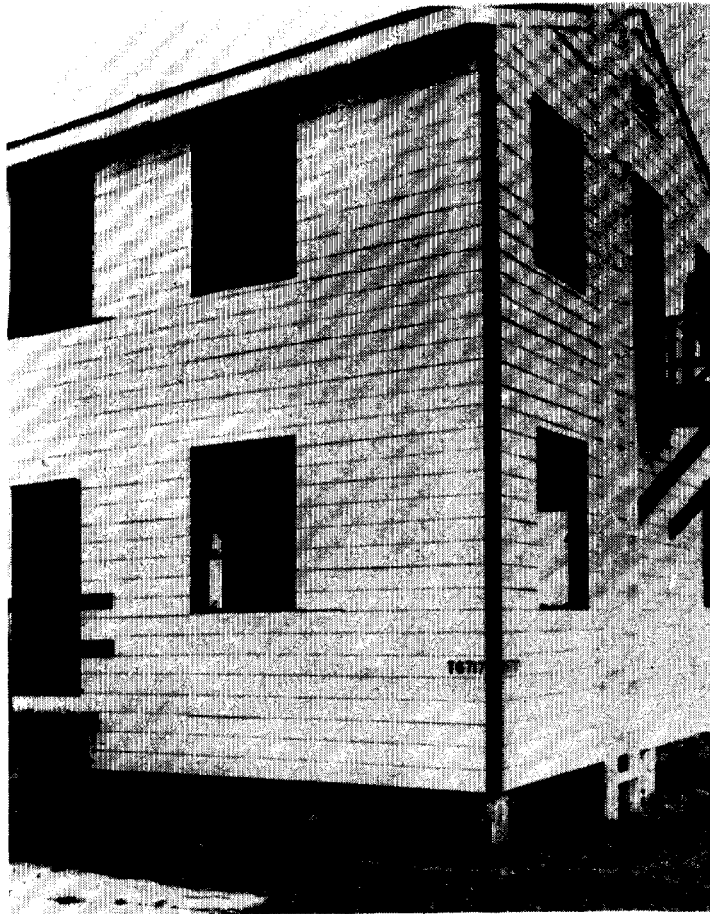
Proper planning also involves determining whether it is more advantageous to perform repairs in-house or to contract for the work. We found at Sewells Point that potholes were repaired by Navy employees even though prices under an existing paving contract would have been less expensive. According to one Navy planner, a typical work request for in-house repairs consisted of patching 25 to 30 potholes and cost over \$1,400. This same amount of work would have cost \$500 under the paving contract. According to Navy officials, cost analyses to determine the best source for repairs would be done for future work.

#### Unnecessary work performed

Unnecessary work was performed at Fort Hood, Fort Knox, and Sewells Point because of insufficient preaward planning and/or inadequate physical inspection before issuing work orders. At Fort Knox, for example, recently painted buildings were repainted and buildings scheduled for demolition were painted (see pp. 21 and 22.) At Sewells Point, several family quarters were painted twice in a period of a few months even though they were vacant during the period.



**INADEQUATE PLANNING AND PREWORK INSPECTION CAUSED FORT KNOX TO ORDER AND PAY FOR THE PAINTING OF THIS BUILDING UNDER SUCCESSIVE ANNUAL CONTRACTS.**



**ALREADY SCHEDULED FOR DEMOLITION, THIS BUILDING WAS PAINTED SHORTLY BEFORE OR AFTER DEMOLITION WORK BEGAN.**



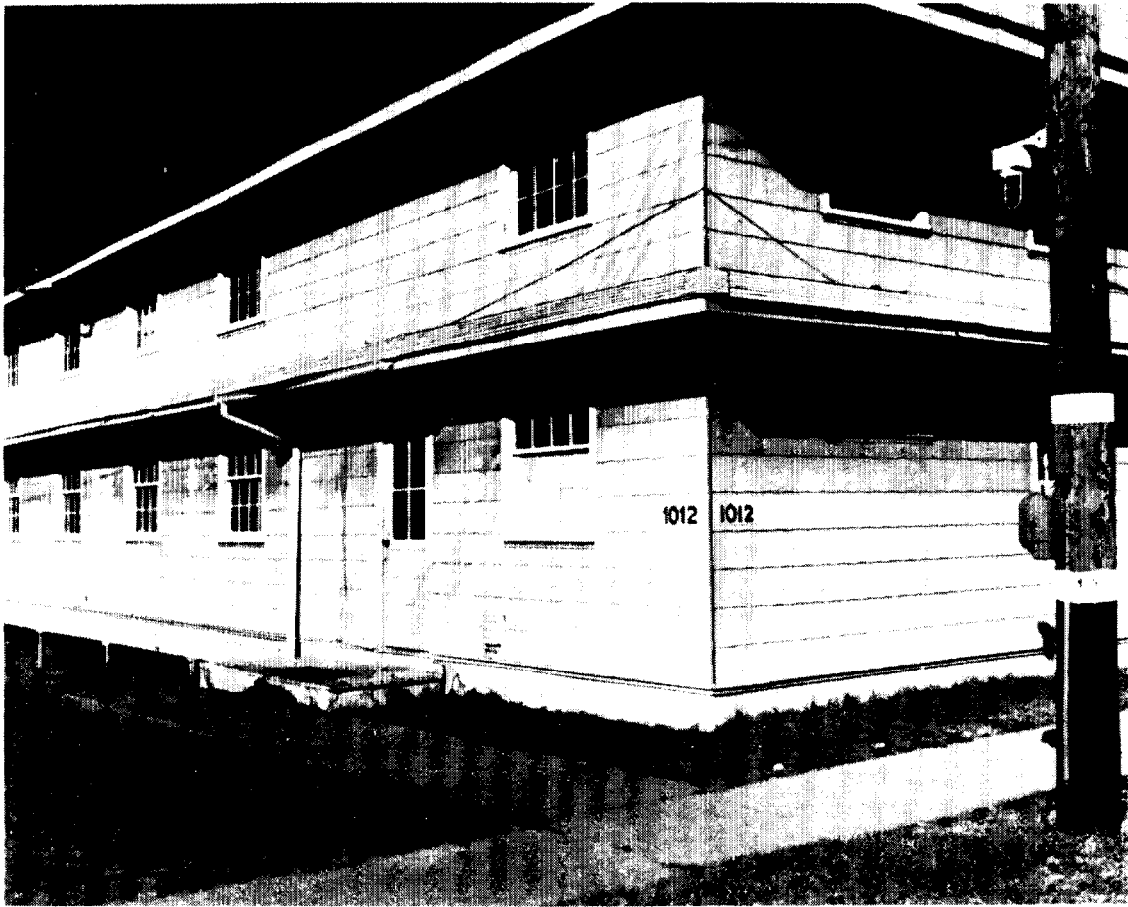
## Need to modify contracts

At several installations, shortcomings in preaward planning were illustrated by the necessity for postaward modifications changing the scope of the work or the specifications as to how the work was to be done. Since these modifications usually affect contract price, the Government is placed in the undesirable position of negotiating price adjustments noncompetitively. Generally, contract cost will be less if the solicitations accurately specify the work to be done and competitive bids are obtained.

## BETTER CONTRACT SPECIFICATIONS NEEDED

Installations of all three services need improvements to enable them to develop clear, accurate, and appropriate contract specifications. As illustrated by the following examples, poorly written or inappropriate specifications have increased costs in some cases and could lead to disputes over contract interpretation in others.

- Provisions of a Fort Knox contract did not distinguish between buildings with wood siding requiring complete painting and buildings with asbestos siding requiring paint only on wood trim. As a result, Fort Knox paid as much for painting trim on the asbestos sided buildings as it did for painting the complete exteriors of comparably sized wooden buildings. (See p. 24.)
- Fort Knox contract specifications for sandblasting work stated that payment would be based on a building's total square footage. Areas such as windows, which do not require sandblasting, were not deducted even though these areas sometimes amounted to 40 percent or more of total footage.
- Contracts at Barksdale Air Force Base and the SACC provided for applying only one coat of paint and, when two coats were required, the price for a single coat was doubled. Because the single-coat price included surface preparation and spot priming, the second-coat price should have been lower than the first. On an Army contract, for example, the second coat cost from one-third to one-half the price of the first coat.
- Eighteen of 19 purchase orders for housing maintenance at Wright-Patterson Air Force Base did not include detailed work specifications. Orders for replacing floors, for example, did not specify the type



DUE TO INAPPROPRIATE CONTRACT SPECIFICATIONS, FORT KNOX PAID AS MUCH FOR PAINTING THIS ASBESTOS SIDED BUILDING AS IF IT WERE ENTIRELY WOOD AND NEEDED COMPLETE PAINTING.

of flooring required or whether underlayment was required. Also, 12 of the 19 orders did not specify whether the price included materials or whether materials were separately reimbursable. This lack of clarity may have contributed to the duplicate reimbursement for materials discussed in chapter 2.

--Sewells Point painting contract specifications allow charges for more area than is actually painted. Windows, for example, are included in the contract formula for calculating wall area and are also covered by a separate formula for calculating the area of window moldings. Furthermore, the window molding formula applies only to wooden sash windows--if it is used for windows with metal casings, the area to be painted is overstated.

--One Sewells Point contract requires the contractor to clean housing unit walls before painting them. However, departing occupants are required to clean their walls, and the painting contractor seldom needs to reclean them. Eliminating this unnecessary requirement could reduce contract price.

#### NEED FOR IMPROVED COST ANALYSIS AND NEGOTIATIONS

The Navy needs to be sure that it obtains cost and pricing data when required by the Truth in Negotiations Act (Public Law 87-653) and the Defense Acquisition Regulation. Additionally, installations of all three services need more thorough and accurate analysis of cost data used in price negotiations to ensure fair and reasonable prices. Price negotiations were conducted in awarding noncompetitive contracts under section 8(a) of the Small Business Act (15 U.S.C. 637(a) (1976)) and in establishing prices for modifications to competitively awarded contracts. The following examples illustrate the types of negotiation problems identified.

#### Fort Knox

After a painting contract had been awarded, the Fort Knox Commander directed a change in the color scheme. Contending that additional paint would be required to provide adequate coverage with the new color, the contractor submitted a proposal, with backup data, for a \$56,118 price increase. Fort Knox personnel approved the price increase without adequately reviewing the contractor's proposal. We found the proposal included obviously overstated requirements, and Fort Knox officials now plan to pursue recovery of the unwarranted price increases.

Also, Fort Knox engineering cost estimates did not provide procurement officials with valid bases for determining that bids and proposals were fair and reasonable. Sandblasting costs were greatly overstated and paint requirements were overestimated because of inaccurate engineering estimates. The engineers estimated, for example, that 30 gallons of paint would be required to paint a 4,800-square foot building, but a trade manual shows only 19 gallons would be needed.

### Navy Sewells Point Area

A Sewells Point painting contract valued at \$696,400 was awarded to a disadvantaged small business under section 8(a) of the Small Business Act without obtaining contractor cost data as required by the Truth in Negotiations Act and the Defense Acquisition Regulation. Instead, according to NFEC officials, a Navy estimator developed independent price estimates using the "Building Cost File," and these estimates were used to evaluate the contractor's proposal. However, contract records did not contain the independent estimate, and we believe that if the estimator had used the "Building Cost File" correctly, he would have concluded that the contractor's proposal exceeded fair market prices.

The Navy's original cost estimate for another 8(a) painting contract was \$40,200, but after the contractor submitted an offer of \$67,703, the Navy revised its fair market estimate upward to \$63,000. The contractor's second offer of \$62,784 was then accepted.

NFEC officials maintained that their price evaluations for both contracts were adequate and that the prices paid were fair and reasonable, even though they were from 20- to 65-percent higher than prices under another painting contract competitively awarded that same year. We believe, however, that effective cost analysis would have resulted in negotiating prices more in line with available competitive prices.

The Navy obtained housing maintenance services for the Sewells Point Area through use of an annual requirements contract containing about 60 separate line items. There were no competitive line-item bids because the Navy asked bidders to submit only a total price for all line items. The contractor bidding the lowest total price on all items was then asked to submit a schedule showing prices for each line item. According to NFEC officials, this lump-sum bid procedure eliminates mathematical errors and reduces bid protests. They also stated that the procedure provides them an opportunity to detect unbalancing in the contractor's price schedule and requires unbalanced prices to be corrected.

However, the Navy did not attempt to determine if unbalanced bidding occurred on the housing maintenance contract. Contracting officials made no analysis of the successful bidder's price schedule before awarding the contract. In the absence of competitive line-item pricing data and independent Government cost estimates, the officials had no means of ensuring that the prices paid were fair and reasonable.

#### Wright-Patterson Air Force Base

During negotiations of a firm-fixed-price 8(a) contract for painting and repairing housing units, Wright-Patterson officials and the contractor disagreed about the amount of work involved. For example, the contractor estimated 2,071,156 square feet of nontrim surface would be painted, while the Air Force estimated 1,547,358 square feet--a difference of 523,798 square feet. The conflicts were resolved by agreeing to split the difference between the Air Force and contractor estimates. The compromise work quantities were then used as a baseline in negotiating prices.

We questioned this negotiation method because Wright-Patterson civil engineers should have been able to develop accurate and supportable work estimates which would provide a firm baseline for price negotiations. The size of the area to be painted should not be a negotiable item.

## CHAPTER 4

### PRIOR AND CURRENT AUDIT WORK

In March 1971, following a review of facilities painting contracts at 19 military installations, we reported to the Secretary of Defense that improvements were needed in contract award and administration. Deficiencies pointed out in that report included

- inadequate inspections, resulting in accepting and paying for poor quality work which did not conform to contract specifications;
- inaccurate measurements, resulting in paying for more work than actually done;
- inadequate planning, resulting in painting buildings scheduled for demolition;
- inaccurate work quantity estimates and permitting unbalanced bidding; and
- inadequate cost analysis to determine whether work should be accomplished with in-house personnel or by contract.

Although the report dealt specifically with painting contracts, we recommended the Secretary determine whether the problems identified also existed on other facility maintenance contracts.

In responding to the 1971 report, the Deputy Assistant Secretary of Defense (Installations and Logistics) generally concurred with our findings. He stated the deficiencies generally resulted from failures to follow existing policy and guidance rather than from a lack of sufficient guidance. He also said the military departments would emphasize to their installations the need to comply with prescribed procedures and that internal audit agencies would be requested to include real property maintenance in their fiscal year 1971 audit program.

The widespread deficiencies found during our latest audit indicate that the actions taken by DOD were not fully effective or longlasting. Poor quality work, overpayments, unbalanced bidding, and inadequate planning continue to be problems.

During the latest review, we briefed DOD officials on problems identified at various installations. Based in part on our findings, the Assistant Secretary of Defense (Comptroller) requested in February 1979 that all four DOD audit agencies participate in a special DOD-wide review of local procurement activities, including contracting for installation level maintenance. He indicated that DOD has emphasized the need for auditors to carefully scrutinize activities which might be susceptible to fraud.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

#### CONCLUSIONS

In view of the large expenditures for contract maintenance and repair of real property and the growing backlog of that work, it is essential that military installations obtain the maximum amount of service for each dollar spent. In our opinion, several improvements are necessary to achieve this goal.

Better inspections and payment verification procedures are needed to ensure that contract payments are proper. Several installations failed to verify the quality and quantity of work performed by contractors, and substantial overpayments resulted. Other overpayments occurred because work inspections and reviews of billing documents did not ensure that payments were made only once and that all work was performed and billed in accordance with contract provisions.

In general, the installations' control procedures provided for Government inspectors to verify the quality and quantity of completed work, and the inspectors' reports were the basis for approving payments. The reports, however, were unreliable. For various--and in some cases undetermined--reasons, they contained erroneous or incomplete information. Detailed records of measurements and computations supporting the reports were often not maintained.

These conditions indicate the need for frequent independent tests to verify the quality of each inspector's work. In addition to reducing the potential for collusion between Government and contractor personnel, independent tests could detect other problems faced by the inspectors, such as excessive workload, lack of training, misunderstanding of their responsibility and authority, and insufficient familiarity with contract provisions.

Also, improvements are needed in contracting procedures to ensure the best available prices are obtained. Through increased efforts in planning, estimating, and coordinating contract work; developing clear and appropriate contract specifications; and negotiating fair prices, military installations could reduce costs, avoid delays in accomplishing needed work, and avoid ordering unneeded work.

We also observed that requirements contracts, used to varying degrees by the three services, can cause or contribute to award and administration problems. When used without



accurate forecasts of requirements, these contracts are susceptible to unbalanced bidding and can result in unnecessary costs. Furthermore, payments under requirements contracts are often determined by measuring the quantity of work performed rather than being based upon lump sums for completion of specified work. These unit price contracts add to the inspectors' workload and create a potential for overpayments by inflating measurements.

#### RECOMMENDATIONS

The Secretary of Defense should see that the Secretaries of the Army, Navy, and Air Force strengthen controls over the procurement of maintenance and repair services. In establishing more effective controls, the services should consider deficiencies identified in this report and in ongoing internal audits. Specifically, each service should

- encourage the use of lump-sum contracts whenever practicable and economically advantageous;
- ensure that sufficient numbers of adequately trained personnel are assigned to the inspection and contract administration functions;
- require that detailed inspection records, including measurements and calculations, be maintained in support of contract payments;
- require routine, independent tests of each inspector's work;
- ensure that proposed work is adequately planned before contract award and that specifications are clear and appropriate;
- strive to eliminate unbalanced bidding by improving requirements forecasts and/or utilizing contracting methods or bid evaluation techniques which are not susceptible to unbalanced bidding; and
- continue to devote a portion of internal audit effort to local procurement activities.

Also, action should be taken to collect past overcharges identified in this review and in the DOD audits.

DOD COMMENTS

DOD comments were not received in time to be included in this report.

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