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6 PRODUCT IMPROVEMENT TEST OF POLYURETHANE FOAM MATTRESSES.

9 FINAL LETTER REPORT [REDACTED]

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GENERAL EQUIPMENT TEST ACTIVITY
FORT LEE, VIRGINIA

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DEPARTMENT OF THE ARMY
U.S. ARMY GENERAL EQUIPMENT TEST ACTIVITY
FORT LEE, VIRGINIA 23801

STEGE-TE-E

April 2, 1969

SUBJECT: Final Letter Report, Product Improvement Test of Polyurethane
Foam Mattresses, USATECOM Project No. 7-3-0163-03

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1. References.

a. Letter, AMSTE-GE, Headquarters, U. S. Army Test and Evaluation Command, 4 December 1967, subject: "Test Directive, USATECOM Project No. 7-3-0163-03, (Category II) Product Improvement Test of Polyurethane Foam Mattress."

b. Interim Letter Report, U. S. Army General Equipment Test Activity, 4 October 1968, subject: "Interim Letter Report, Product Improvement Test of Polyurethane Foam Mattress, USATECOM Project No. 7-3-0163-03."

c. Test Plan, USA General Equipment Test Activity, February 1968, subject: "Product Improvement Test of Polyurethane Foam, USATECOM Project No. 7-3-0163-02," and Change to Plan of Test, 27 November 1968.

2. Summary of Results.

a. This final letter report includes data obtained in the period 13 September 1968 through 13 February 1969.

b. The standard and experimental mattresses were continued in use without rotation of types until the twelfth and final 4-week period. During

① to p 4

TABLE I

INTERVIEW RESPONSES AS TO COMFORT, COMPATIBILITY WITH BEDS, AND REFERENCE FOR TWO MATTRESS TYPES-TWELFTH 4-WEEK PERIOD OF TESTING

Question and Type Answer	Answers by Mattress Type		
	No.	% Total	% Total
How do you rate your mattress as to comfort?			
Very comfortable	25	67.6	3
Moderately comfortable	11	29.7	9
Just barely comfortable	1	2.7	6
Slightly uncomfortable	0	0.0	1
Moderately uncomfortable	0	0.0	4
Very uncomfortable	0	0.0	14
	<u>37</u>	<u>100.0</u>	<u>37</u>
Does mattress stay in place?			
Yes	34	91.9	1
No	2	5.4	35
No Answer	1	2.7	1
	<u>37</u>	<u>100.0</u>	<u>37</u>
Which mattress would you prefer for continuous use?*			
	35	94.6	1
			2.7
			<u>100.0</u>

*One participant did not state a preference.

TABLE I (continued)

Question	Comment	No. Comments	
		K	M
If less than very comfortable, why not very comfortable?	Mattress slides	0	23
	Too thin	0	22
	Not enough support	2	6
	Too firm	3	1
	Too thick	1	0
	Holds heat	0	2
	Lumpy	1	0
	Just not comfortable enough	0	2
	Not hard enough	1	0
	No particular reason	1	0
	Don't know	2	0
	No answer	0	2
	How, when and why did the mattress not stay in place?	When making bed	1
When getting in		0	8
Slides around on bed		0	5
Slides off bed		0	2
When sleeping		0	2
When you move around		0	1
At all times		0	4
Why do you prefer for con- use --	No answer	0	10
	Type K?		
	K stays in place		22
	K thicker		20
	K more comfortable		13
	K easier to make		7
	K gives better support		2
	K more compatible with bed		2
Type M?			
M more comfortable		1	

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↳ this period, each of 37 participants was assigned a mattress for 2-week periods of use of each type. Interviews were conducted after the 4 weeks of use for evaluation and comparison of the two types for comfort, compatibility with beds, and preference for continued use. The responses obtained in these interviews are shown in Table I. Similar results were obtained at each interview interval during the test. The responses obtained for a 6-point scale and assigned values from 1 through 6 for ratings ranging from Very Uncomfortable to Very Comfortable resulted in average ratings after initial 2-week use periods of 5.39 for the standard and 3.27 for the experimental mattresses; after the initial 6-week periods, 5.61 for the standard and 3.78 for the experimental; and after the final two-week periods, 5.65 for the standard and 3.03 for the experimental. At each interval, the standard mattress was rated significantly more comfortable, more compatible with the beds, more preferred than the experimental mattress. An analysis of variance, with a 95 percent level of confidence was performed on the comfort ratings and chi-square tests with 95 percent level of confidence were used for the compatibility and preference data.

c. The experimental mattresses exhibited no failures or pertinent changes in condition during test use with the exception of 5 mattresses which showed very slight depressions, 12 to 18 inches in diameter, in the center. These areas were slightly softer, less resilient, than the rest of the mattress. Ten standard mattresses at the end of testing had side handles or straps torn; 5 had stitching failures in the rolled edge seam, 3 of which were located at the point of attachment of the vertical lifting strap; 13 had buttons loose; and 8 had buttons missing. None of these failures affected comfort or proper use of the standard mattresses with the exception of one complaint that the buttons scratched when moving over them.

3. Conclusions.


a. The standard mattress is significantly more comfortable, compatible with the beds, and preferred to the experimental mattress as judged by the test users.

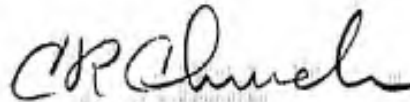
b. Both mattress types are satisfactory with regard to durability

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during a 12-month period use. The experimental mattress is more durable
than the standard mattress based on the frequencies of failures incurred
during the testing period.


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