

PROGRESS REPORT

11/11/47

STRESS CONCENTRATIONS ON M/721 STOCK

Period: October 25 to November 6, 1947
Project: TD-15-16 W.O. #71516
Previous Progress Reports: None
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INTRODUCTION

This report covers the stress coating of 20 M/721 Stocks. The test was made using 1 - M/721 Action, 30-06 Cal., and was conducted in the calibrated recoil rest with 220 grain ammunition. Other stocks were merely assembled to the action to determine stresses due to assembly.

OBJECTIVE

1. Does the Stock Reinforcing Screw aid in reducing stress concentrations in the critical stock section*?
2. Does a high bed in the M/721 Stock introduce stress concentrations in the critical stock section?
3. Will the assembly of the Action to the Stock introduce stress concentrations in the critical stock section?

WORK PROGRAM

The program used will be found in Experimental Details.

CONCLUSIONS

This test shows that:

1. The Stock Reinforcing Screw does aid in reducing stress concentrations in the critical stock section.
2. A high bed in the stock does introduce stress concentration in the critical stock section. This stress is retarded by the use of the Stock Reinforcing Screw.
3. The assembly of the Action to the Stock introduces stress in the critical stock section only when the stock has a high bedding.

*Section around web area and rear upper left section of Magazine Well.

RECOMMENDATIONS

It is recommended:

1. That the high bed which occurs in some of the stocks be eliminated.
2. That continued use be made of the Stock Reinforcing Screw.

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FUTURE PROGRAM

Undetermined.

EXPERIMENTAL DETAILS

1. The actual stress (p.s.i.) in this test has not been indicated because of the inconsistency in the modulus of Walnut.
2. There follows a chart which shows the results of this test.

| Stock No. | Test | With Stock Reinforcing Screw | | Without Stock Reinforcing Screw | |
|-----------|-----------|---------------------------------|-----------------|------------------------------------|---|
| | | Normal Bedding | High Bedding | Normal Bedding | High Bedding |
| 1 | Fired | | | Stress in web. | |
| 2 | " | | | | Stress in web. |
| 3 | Assembled | | | | Stress in web. Stress on both sides of Mag. wall |
| 4 | Fired | Stress in web. | | | |
| 5 | " | | | | Stress in web. |
| 6 | " | | Stress in web. | | |
| 7 | " | | | Stress in web. | |
| 8 | " | Stress in web. | | | |
| 9 | " | | Stress in web. | | |
| 10 | " | | Stress in web. | | |
| 11 | " | | | Stress in web. | |
| 12 | " | | | | No stress. |
| 13 | " | | | No stress | |
| 14 | " | | | Stress in web. | |
| 15 | Assembled | | | | Stress on left side of Mag. wall. |
| 16 | " | | | | Stress on left side of Mag. wall. Stress in web. |
| 17 | " | | | No stress. | |
| 18 | Fired | | | No stress. | |
| 19 | Assembled | | | No stress. | |
| 20 | " | | | | Stress on left side of Mag. wall. |

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