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REMINGTON ARMS COMPANY, INC.

FIREARMS MODERNIZATION DIVISION

MONTHLY REPORT

MAY 1983

RLH/BWR
5/24/83

Receiver Flexible Manufacturing System

A strategy meeting concerning the FMS software plans and options is scheduled for May 26 in Wilmington. Detailed software development will begin upon completion of an approved plan.

A purchase order for the prototype four spindle CNC machining center, based on Snyder's final quote, is expected to be released in May. Installation of the machine at EDL is scheduled for early second quarter 1984.

Automated inspection of Remington receivers is being investigated jointly by EDL and Remington engineers. Brown and Sharpe recently demonstrated their "Validator" coordinate measuring machine inspecting M/870 receivers. Although the inspection rate was too slow for the FMS requirements, it appears this equipment could be altered to achieve the desired results. Additional demonstrations are planned in June with Brown and Sharpe and Bendix.

Automated material handling concepts for the proposed FMS are currently under investigation by Du Pont's Design Division. Both ground transportation and overhead monorail type systems will be evaluated for safety, cost and convenience.

Miscellaneous Parts FMS

Preliminary breech bolt machining tests are complete and have produced the following results:

- Obtainable machining speeds and feeds are approximately 2X the original estimate
- The fixturing concept has been proved out

EDL is continuing work on prototype fixturing and is expected to be complete by July. The new fixtures will be used to model the final breech bolt machining process in comprehensive machining

and robotic material handling tests.

Serial Number Recording System - Phase II

Computer Identics (CI) has requoted to design and build the Phase II portion of the SNRS. Purchase orders are expected to be issued to CI and DEC for system design and computer hardware before June 1. The system will be installed in November and begin operation in January 1984.

In addition, laser bar code scanning and vision systems are being investigated as possible methods of improving the reliability and cost savings of the Phase I system.

GFM Automation

Cincinnati Milacron (CM) expects to ship the robot July 17. Vibration and structural information has been given to CM through W. B. Fagerstrom, ESD, for an analysis of the floor loading. He has requested CM's input regarding the suitability of our existing structure for a T3 installation. Plant Engineering has been contacted regarding the two stages of facilities modifications - preliminary modifications during August shutdown, and additional modifications in September during system installation.

EDL expects to ship the strip/assembly machine and all controls no later than September 9. Installation and testing of the robot will begin the week of Labor Day.

The blank rack has been built at Ilion. Instrumentation has been ordered and the rack will be shipped to EDL after instrumentation is installed in June. It will be temporarily attached to the strip/assembly machine and tested with the rest of the system.

A meeting was held with EDL personnel on May 18th to review specifics of system design and operation and to review system software

compatibility. EDL will issue an addendum to the functional specification reflecting any changes. EDL has begun writing the software for the strip/assembly, blank rack and error detection protocol. Initial debugging of the robot and programmable controller software should begin in mid July.

Flexible Assembly System For Small Parts

Work has begun on developing basic data and writing initial system functional specifications. EDL is continuing their demonstrations of basic assembly technology and will attempt to demonstrate the carrier release assembly in June.

D. S. Bargar, EDL, and S. M. Klein, EPL, visited Ilion May 17-18 to review the manual operations. Klein will be responsible for system controls and instrumentation of the automatic inspection stations. A variety of acceptable and rejected parts will be collected so that Bargar and Klein can quantify the inspection criteria.

Wood Finishing Automation

A filtration system has been ordered for the main compressed air line in the electrostatic spray room. Delivery is expected in June. Testing will begin after the oil is removed from the pneumatic control lines. DeVilbiss engineers have been contacted to aid in correcting the finish problems previously encountered.

CNC Secondary Wood Machining

Fixturing and gaging changes have been made to obtain better controllability of the process. Tests are currently in progress to determine the effectiveness of these changes.

A sound reduction enclosure is being designed to comply with Remington's safety standards.