

LIMITED DISTRIBUTION

ILION RESEARCH DIVISION

MONTHLY REPORT

NOVEMBER 1968

POWDER METALS

Powder Metals Research

Magnetic Materials Investigation - The first phase of the investigation of four magnetic materials using pure irons has been completed. The coercive forces are significantly decreased after annealing from a cold condition. The silicon steels and several of the soft magnetic alloys will also be investigated.

Porosity and Bleed-Out - It has been found that the extent of interconnecting porosity which contributes to the problem of bleed-out of coloring salts may be improved with higher temperature sintering. A process improvement for the Model 742 breech ring is being considered.

Study of Lubricants - For some time we have had the problem of poor burn-off of the powder lubricant, causing discolored parts. This is more predominant with large production lots. It is possible that some of the new materials may offer better results and nine of these have been selected for comparisons. At least one new material has shown improved characteristics.

Aluminum Powder - Three Model 700 triggers processed with the new ALCOA powder are being tested by the designers. In this application, the lighter weight material can improve the safety of the rifle by reducing possibility of jar-off when the rifle is dropped. Other possibilities for gun parts made from the new powder are being investigated.

SMA:gb