REMINGTON ARMS COMPANY, INC.
Firearms Research Division

June 9, 1981

Xc: C.J. Miller
A.A. Hugick
J.R. Snedeker
Lab File

TO: R. E. NIGHTINGALE

FROM: E. W. YETTER, Jr.

SUBJECT: S.A.A.M.I. DROP TEST

INTRODUCTION

A.A. Hugick, Remington's SAAMI representative, requested the Test Lab to video tape a demonstration of the proposed SAAMI TU79 Firearms Design Tests. In addition, we were requested to install an accelerometer on the gun (M7400) and record the output from the accelerometer for all muzzle first and butt first tests.

OBJECTIVE

The purpose of this test was to demonstrate, on video tape, the drop test procedures proposed to SAAMI and also to evaluate the alternate pendulum drop test as a possible substitute.

TEST CONCLUSIONS

All elements of the test have been recorded. Further editing is needed to produce the final tape. The evaluation of the pendulum test is inconclusive. Insufficient samples were taken to make any valid comparisons. I recommend a minimum sample size of 30 before any conclusions can be drawn on the interchangeability of the two types of test.

TEST PROCEDURE

An accelerometer was mounted on the barrel extension mounting bolt of a M7400. The signal from this accelerometer was amplified and divided. One signal was fed directly into the Biomation data recorder, and the other signal integrated and sent into the other channel of the data recorder. A chart recorder connected to the plot output of the data recorder provided the final output.

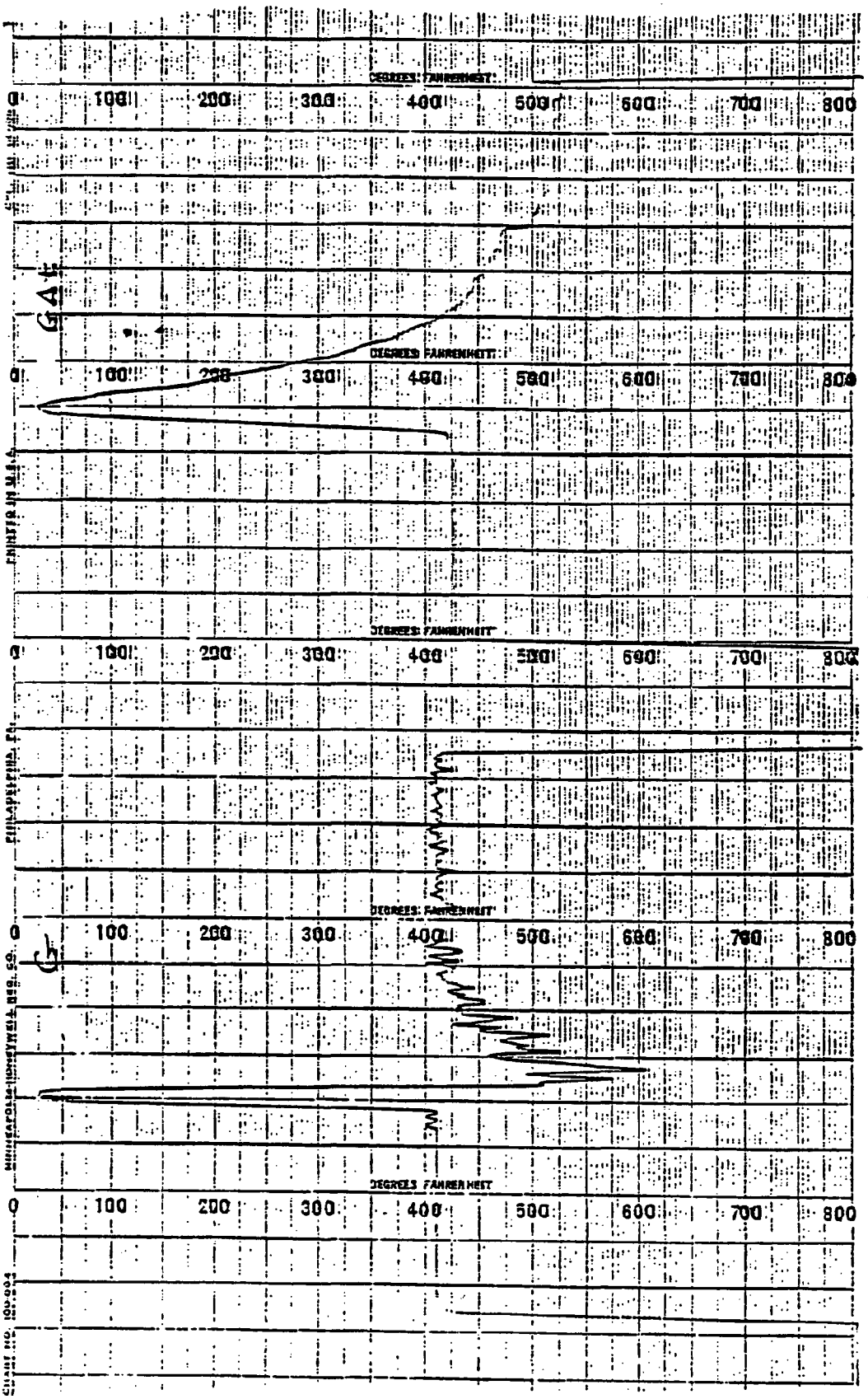
Initially, for the video taping, only one sample per test was taken. The numbers from this test were inconclusive. More samples were taken. Time constraints kept us from taking as many samples as were necessary for a complete evaluation. The calculated data and a sample plot follow.

To: R.E.Nightingale
From: E.W.Yetter, Jr. 6-9-81
SAAMI Drop Test -2-

Sample Size = 1	Muzzle First		Butt First	
Drop Test	g	gΔt(ms)	g	gΔt(ms)
Pendulum	45.74	280.87	122.18	312.2
Free fall	37.25	258.02	123.67	479.18
Jar Off Test				
Pendulum	323.33	489.69	268.20	523.23
Free fall	494.68	606.35	290.55	700.34

Sample Size = 3	Muzzle First		Butt First	
Jar Off Test	$\bar{g}$	Std.Deviation	$\overline{g\Delta t}$	Std.Deviation
Pendulum	260.75	46.53	404.23	61.71
Free fall	427.58	6.7	541.48	7.53

EWY:T
Research Test Lab
Attach.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