To: Jim Snedeker
From: Harold Davidson
Date: 8-10-00
Subject: Estimated M710 Trigger Pulls

Jim,

I was asked to estimate the trigger pull for the M710 fire-control in four different configurations. The first two configurations were maximum and minimum sear-trigger engagement. Both resulted in a trigger pull of approximately 6 lbf. using a coefficient of friction of 0.2. The third and fourth configuration maintained the firing pin and head in their original positions, but rotated the receiver insert, sear, trigger, etc. about the sear pivot b 1 degree and then 5 degrees. The third and fourth configuration did produce slightly higher trigger pulls, but the trigger pull values were still below 7 lbf.

The results and some related images are shown on the following pages.

Frictional Coefficient = 0.2

	Torque Arm	Applied Force	Torque
Sear Normal Force	0.04	-13.2818	-0.53127
Sear Frictional Component	1.0368	-2.65636	-2.75411
Trigger Spring Force	0.43899	-4.8618	-2.13428
			-5.41967
Trigger Pull Torque	0.869	[illegible]	5.419668

Maximum firing pin head engagement

Frictional Coefficient = 0.2

	Torque Arm	Applied Force	Torque
Sear Normal Force	0.04	-11.758	-0.47032
Sear Frictional Component	1.0368	-2.3516	-2.43814
Trigger Spring Force	0.43899	-4.8622	-2.13446
			-5.04292
Trigger Pull Torque	0.869	[illegible]	5.042916

Minimum firing pin head engagement

Frictional Coefficient = 0.2

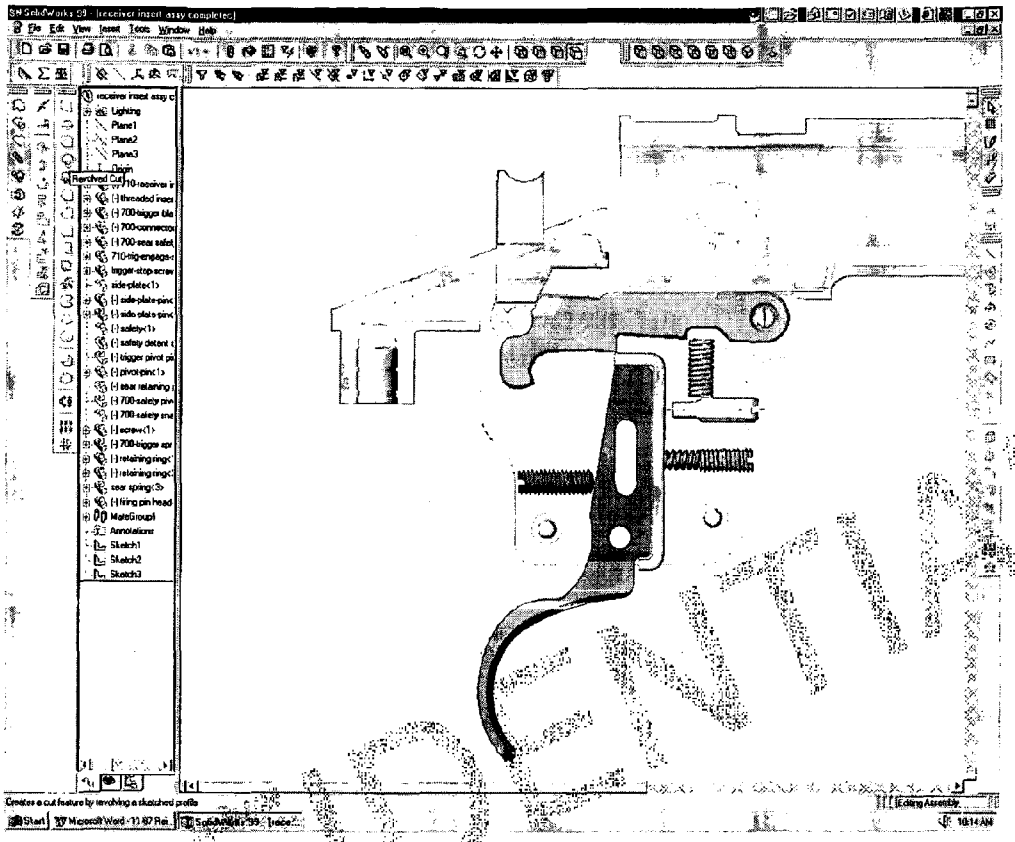
	Torque Arm	Applied Force	Torque
Sear Normal Force	0.04	-13.8171	-0.55268
Sear Frictional Component	1.0368	-2.76342	-2.86511
Trigger Spring Force	0.43899	-4.8617	-2.13424
			-5.55204
Trigger Pull Torque	0.869	[illegible]	5.552036

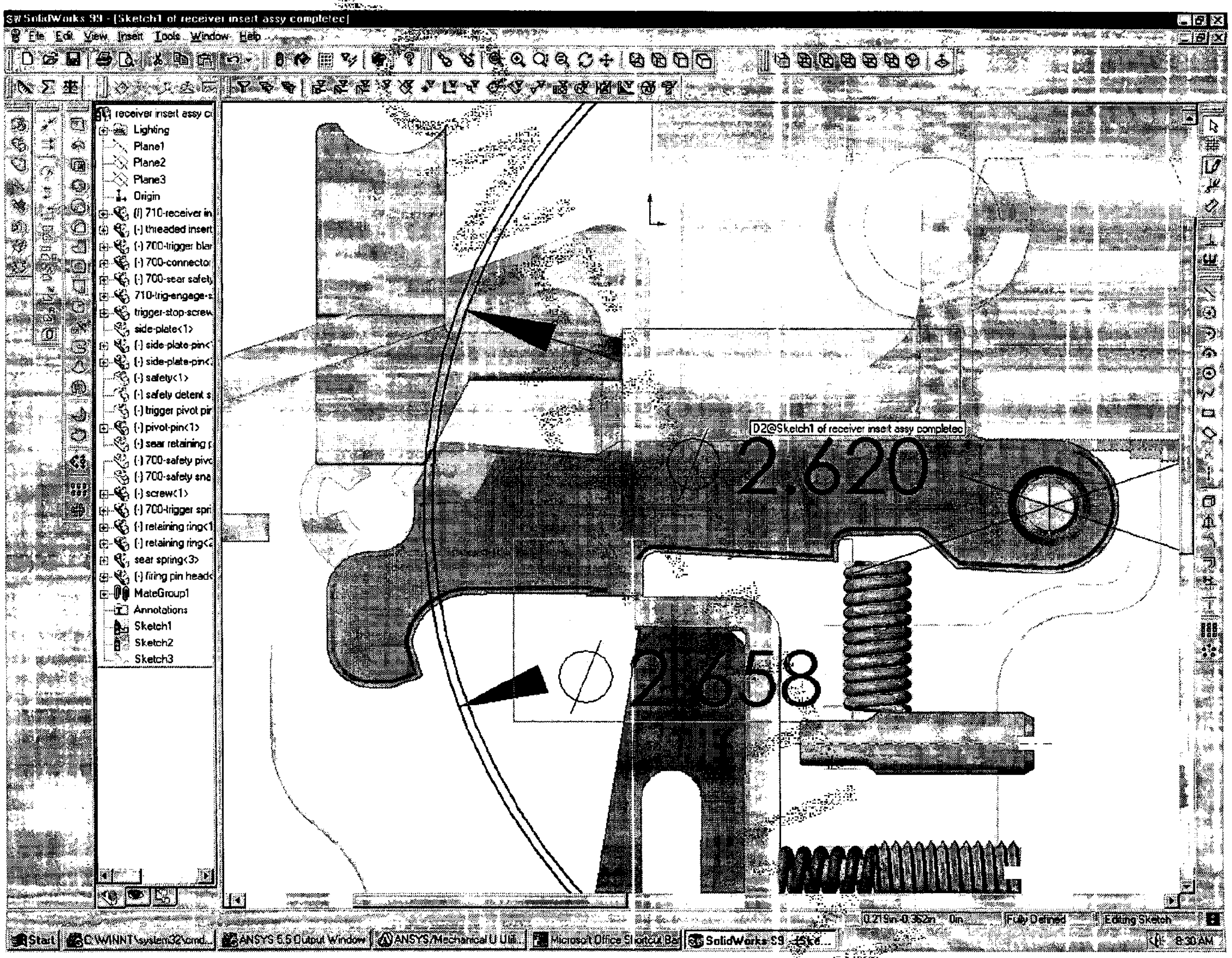
Everything rotated 1 degree about the sear pivot.
The firing pin head remained in its original position.
Maximum sear-fphead engagement allowed.

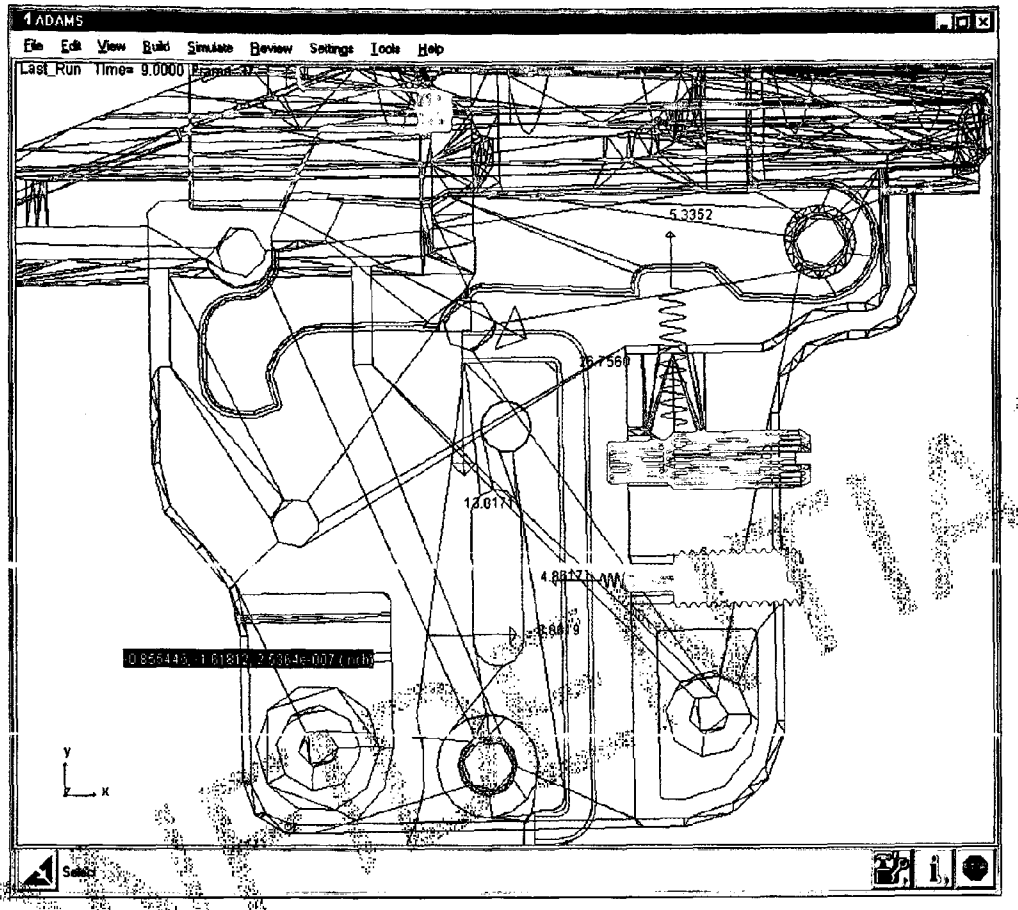
Frictional Coefficient = 0.2

	Torque Arm	Applied Force	Torque
Sear Normal Force	0.04	-14.8288	-0.59315
Sear Frictional Component	1.0368	-2.96576	-3.0749
Trigger Spring Force	0.43899	-4.8614	-2.13411
			-5.80216
Trigger Pull Torque	0.869	[illegible]	5.802158

Everything rotated 5 degrees about the sear pivot.
The firing pin head remained in its original position.
Maximum sear-fphead engagement allowed.







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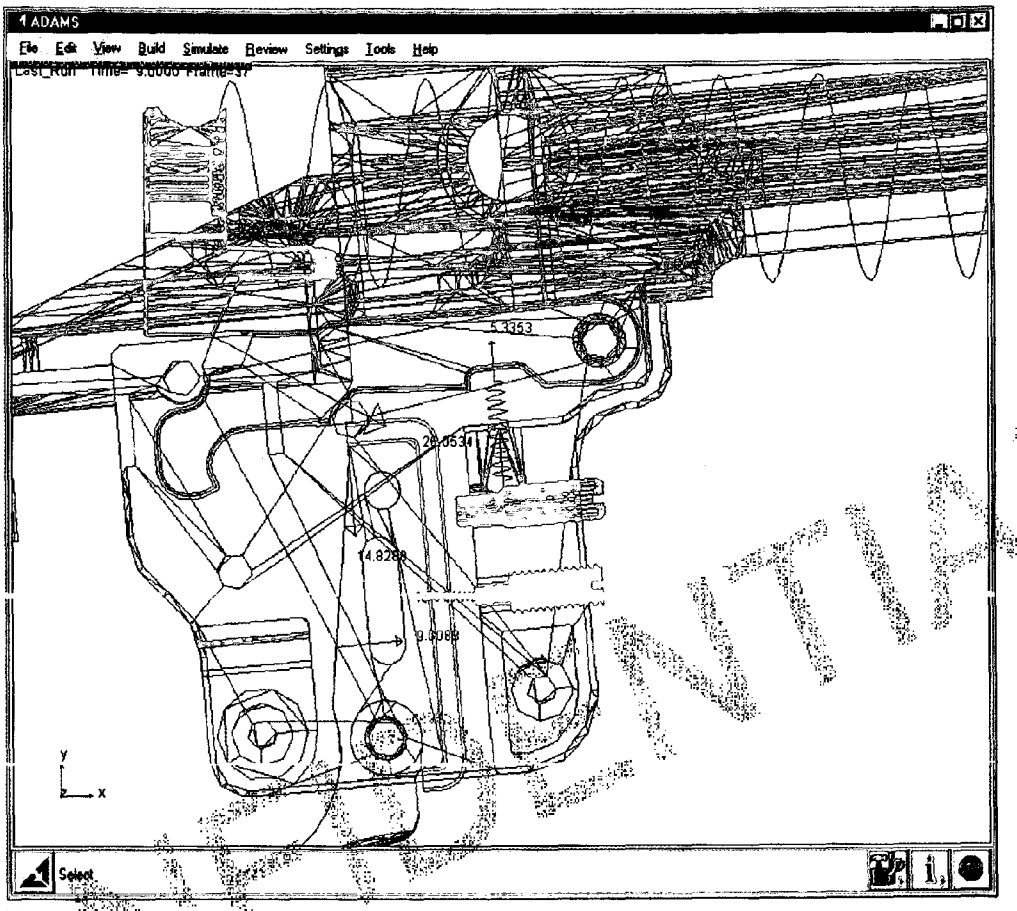

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