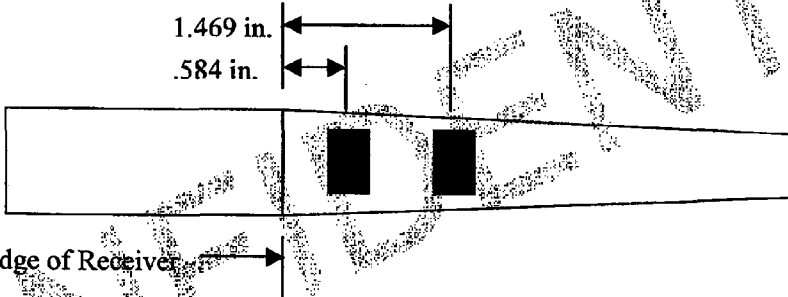


Test Lab Work Request Form

Rev.3 -20 April, 2000

Date Submitted: 07-10-02	Tracking # :
Project # : 241314	Engineer: Franz for Keeney
Test Objective: Strain gauge evaluation of chamber stresses shooting standard .300 Win. Mag. Ammo.	
Test Description: Instrument a 710 300 Win. Mag. Barrel (Ser. No. 71032167 : Gun A-13) with 2 hoop strain gauges in the locations identified below. Shoot standard .300 Win. Mag. Ammo (use heaviest bullet available) and record strain throughout shooting sequence. After initial balance DO NOT rebalance the strain gage throughout the test. Call S. Franz when test is about to be shot.	
	
1. Install 2 hoop gages in locations identified 2. Wire for simultaneous strain recording 3. Record initial resistance of each gage 4. Hook to strain gage equipment and setup for simultaneous strain recording of full waveforms. 5. Setup in blow-up room and do all shooting with a lanyard. 6. Obtain standard Rem. .300 Win. Mag. Ammo (use heaviest bullet available) 7. Call S. Franz when ready to shoot the test. 8. Balance both gages and commence shooting standard rounds, recording and storing each waveform for each shot. 9. DO NOT REBALANCE. 10. At the conclusion of testing record the final resistance of each gage after the gun has cooled completely to ambient temperature.	
Resource Usage:	Test Results Required:

ET28163

Manpower Requirements – Facility Requirements –	Formal Report: Data Only: X Requested Completion Date:
Required Materials/Parts/Equipment (include quantities):	
Test Parts Availability Date: 07-10-02	
Start Date: Completion Date: Report Date:	Test Assigned To: Gary Howell Assignment Date: 07/10/02
Results:	

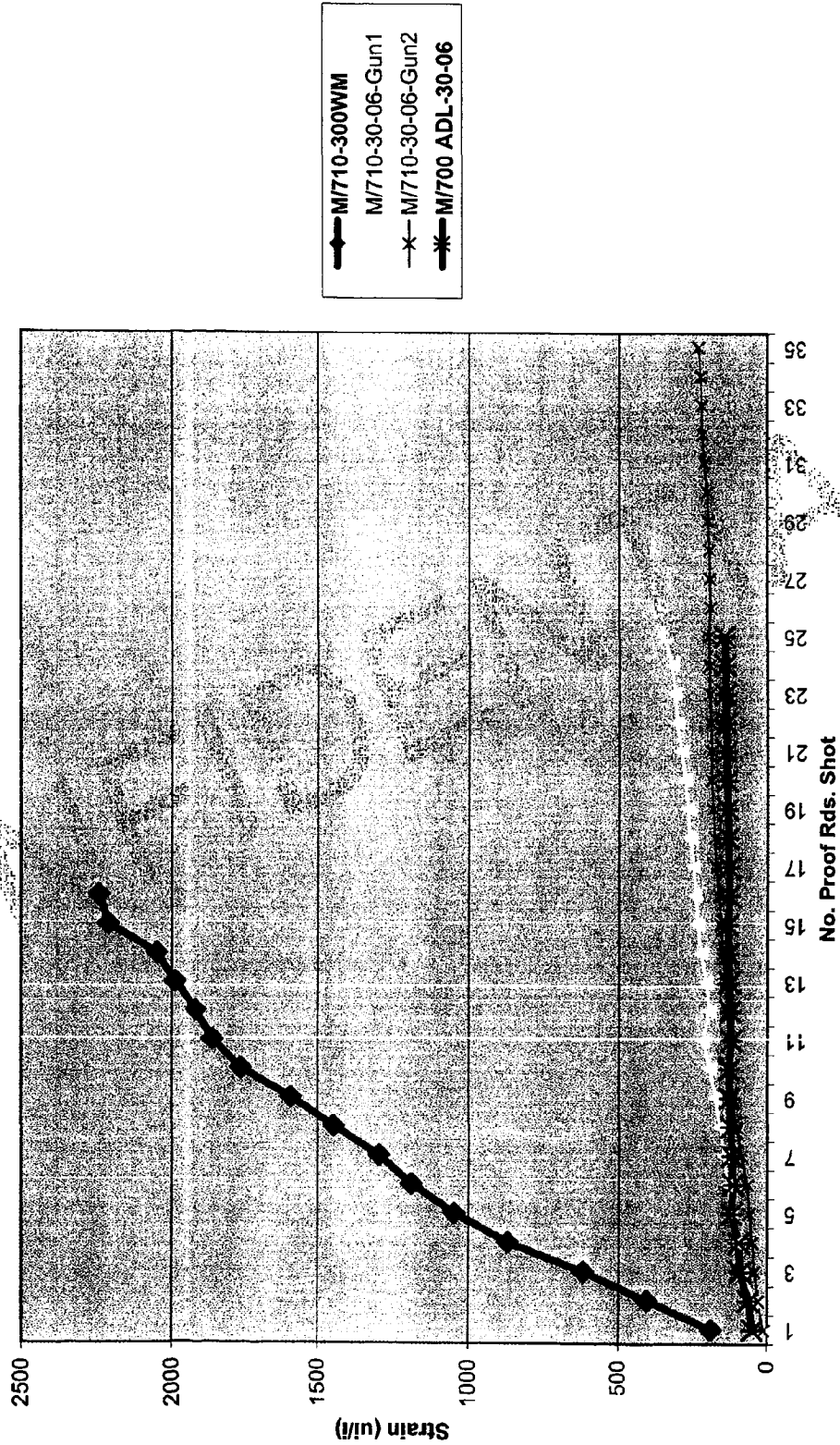
ET28164

83

<u>TLW #</u>	<u>Model</u>	<u>Caliber</u>	<u>Gun No.</u>
896-1	710	.300 Win. Mag.	?
896-2	710	.300 Win. Mag.	A-14
904-1	710	.300 Win. Mag.	A-13
904-2	710	.300 Win. Mag.	A-13
920-1	710	.30-06 Springfield	# 125 (new)
920-2	710	.30-06 Springfield	# 683 (T&P)
932	700 ADL	.30-06 Springfield	# 721

ET28165

Permanent Barrel Strain on OD of Chamber Shooting Proof Rds.



ET28166

Ammo→	710 300 WM-710 Brl. A-14		710 300 WM-710 Brl. A-13				710 .30-06 Spfd # 125		710 .30-06 Spfd # 683		700 .30-06 Spfd	
	Proof Before	Proof After	Std. Before	Std. After	Handload Before	Handload After	Proof Before	Proof After	Proof Before	Proof After	Proof Before	Proof After
	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)	Strain (ui/i)
	0	193	0	3	0	6	2	2	0	13	0	52
	193	408	3	5	8	7	2	43	13	32	51	65
	408	619	50	8	8	12	40	86	32	46	64	93
	617	869	10	9	6	22	83	104	47	54	93	98
	866	1048	10	11	21	37	102	121	54	63	97	123
	1046	1187	11	12	30	37	120	137	63	69	108	117
	1180	1294	14	13	37	48	134	150	68	89	117	122
	1290	1446	14	13	42	65	147	164	89	105	123	126
	1444	1590	14	15	60	73	162	176	105	121	125	130
	1587	1762	15	12	68	80	174	196	121	127	130	132
	1760	1860	12	10	80	89	194	219	119	127	120	124
	1848	1917	10	11	90	114	192	198	127	139	124	128
	1910	1989	12	10	105	127	196	208	137	144	128	130
	1988	2050	11	9	127	144	206	226	143	153	130	133
	2054	2211	11	10	144	159	224	238	153	160	133	136
	2201	2242	9	9	151	196	236	245	157	167	127	130
			10	8	196	260	242	251	167	175	130	132
			9	7	259	375	248	263	174	180	132	134
			8	6	373	582	261	270	180	186	134	136
			7	5			267	280	186	191	136	139
							277	291	186	191	139	140
							288	306	191	194	139	142
							303	313	194	197	142	144
							310	323	197	198	143	145
							320	350	198	200	144	147
							346	360	185	194		
									194	196		
									196	198		
									198	202		
									201	204		
									202	216		
									213	221		
									221	224		
									222	228		
									228	235		

83

ET28167

CONFIDENTIAL 83

Description

1st Test not useful data(rebalanced after every shot)

Significant set recorded w/Proof rds. (2,242 ui/l)

No set recorded shooting standard ammo.

Worked up handloads between std. and proof-Set recorded (582 ui/l) as proof pressures were approached

Small set recorded w/Proof rds. (360 ui/l), No set with standard ammo.

Small set recorded w/Proof rds. (235 ui/l), less than 1st gun.

Slight set recorded w/Proof rds. (147 ui/l).

ET28168

58,000 710's Mayfield
~ 4,500 .17 597's Shipments
92,000 Guns Overall - 2002



710 Magnum Bbls. ~ Vol. 3-6 K/yr. 4% 2-3K/yr.

reduced dia. on H₄ treated bbls. - confirmed
~.005" dia. smaller - quenching issue
cooling & outside induces
top stresses.

Options

- 1 - H₄ Treat Blank Before? Rc 22-25
- 2 - Buy Hammer forged Blank - Ilion ✓
- ?

Path Forward - Try ~~Options~~ #1 Options ~ 30/ea, 2 diff. forms of Blank.

Timing ~ 1 week will give timing thru their process

Rc 25 ± 2-3

Enteron to facil. H₄ Treat
Mayfield to get back on timing of Blanks

597 FC

Check LR & Mag. Ammo Inventory

Timing - Guns Next week

Use Mayfield for some of Shooting/Testing



3.5 - 5.25

ET28169