



Serial Number Restoration Test No. 15-5250 Summary Report

This test was sent to 389 participants. Each participant received a sample pack containing a piece of stainless steel bar stock which had been stamped with a six character serial number which was then obliterated. Also included was a piece of aluminum bar stock intended as a standard for the size, shape and positioning of the stamped characters. Participants were asked to restore the obliterated serial number. Data were returned from 348 participants (89% response rate) and are compiled into the following tables:

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This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set consisted of a piece of stainless steel bar stock that contained an obliterated serial number (Item 1) and a piece of aluminum bar stock intended as a standard for the size, shape, and positioning of the stamped digits. Participants were requested to attempt to restore the obliterated serial number utilizing their laboratory restoration methodologies and report the recovered serial number. The serial number to be restored consisted of 6 characters (F4N91B).

SAMPLE PREPARATION-

Each sample set contained a piece of 1" x 1/4" x 2.5" stainless steel bar stock that was stamped using a punch press. The stamp consisted of 6 characters (F4N91B) that are 1/8" in height. The serial number was then obliterated by removing material from the bar stock using a vertical milling machine. A consistent amount of material was removed from each piece of bar stock.

A piece of aluminum bar stock was also included in the sample set and was intended as a standard for size, shape, and positioning of the stamped alphanumeric characters used in the serial number. The alphanumeric characters are digits 0-9 and letters A-F, H, J, K and N that are 1/8" in height.

SAMPLE SET ASSEMBLY: An Item 1 was enclosed in chip board and the sides taped to securely contain the sample. The aluminum standard was wrapped in chip board and both were placed in their respective pre-labeled envelopes. Each sample pack was packaged with an Item 1 and aluminum standard. This process was repeated until all of the sample packs were prepared. Once verification was completed, all sample packs were sealed with a piece of evidence tape and initialed "CTS."

VERIFICATION: Three predistribution laboratories restored the obliterated six character serial number and reported "F4N91B". All three laboratories used a chemical restoration method for recovery.

Summary Comments

This test was designed to allow participants to assess their proficiency in the restoration of an obliterated serial number. Participants were provided with a piece of bar stock that contained an obliterated serial number (Item 1) and a piece of aluminum bar stock intended as a standard for the size, shape and positioning of the stamped characters. Participants were requested to restore the obliterated serial number utilizing their laboratory recovery methodologies and report the recovered serial number. The serial number to be restored consisted of 6 characters (F4N91B). (Refer to Manufacturer's Information for preparation details.)

Of the 348 responding participants in Table 1: "Recovered Characters", 347 (99.7%) recovered the six digits consistent with the Manufacturer's Information. The remaining participant recovered five of the six digits.

Of the 348 responding participants in Table 4: "Recovery Methods", 248 participants used only chemical processing for the serial number restoration. Another 75 participants used only magnetic processing and 21 reported using a combination of magnetic and chemical processing. The remaining four participants either used a different recovery method or did not report a recovery method in this table.

Recovered Characters

Please record the restored characters below.

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
232G4B	F	4	N	9	1	B
24EUMD	F	4	N	9	1	B
269NDV	F	4	N	9	1	B
26R6GG	F	4	N	9	1	B
29W2F8	F	4	N	9	1	B
2CBPPH	F	4	N	9	1	B
2D6W8E	F	4	N	9	1	B
2DQX3D	F	4	N	9	1	B
2EUWTC	F	4	N	9	1	B
2EZ64K	F	4	N	9	1	B
2MTFEF	F	4	N	9	1	B
2MVHCD	F	4	N	9	1	B
2QD8MW	F	4	N	9	1	B
2WY9HF	F	4	N	9	1	B
2XFRYL	F	4	N	9	1	B
2YN2PX	F	4	N	9	1	B
2YYM2Y	F	4	N	9	1	B
2ZWBGU	F	4	N	9	1	B
33GYHG	F	4	N	9	1	B
34937G	F	4	N	9	1	B
3BT3NF	F	4	N	9	1	B
3HEYJH	F	4	N	9	1	B
3KMM7F	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
3MBQPT	F	4	N	9	1	B
3RH9W9	F	4	N	9	1	B
3UURCX	F	4	N	9	1	B
3WBGAF	F	4	N	9	1	B
3WCLXH	F	4	N	9	1	B
3XRBCB	F	4	N	9	1	B
424AQU	F	4	N	9	1	B
4867B9	F	4	N	9	1	B
48UK3D	F	4	N	9	1	B
4C8V8N	F	4	N	9	1	B
4DUL4M	F	4	N	9	1	B
4FP3MB	F	4	N	9	1	B
4GZULJ	F	4	N	9	1	B
4KJYAG	F	4	N	9	1	B
4M7Q6J	F	4	N	9	1	B
4PNY4J	F	4	N	9	1	B
4PPWEE	F	4	N	9	1	B
4TBZJK	F	4	N	9	1	B
4TTJEX	F	4	N	9	1	B
4WAQUK	F	4	N	9	1	B
4XJV89	F	4	N	9	1	B
67AV7X	F	4	N	9	1	B
67RP32	F	4	N	9	1	B
6CGBM9	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
6CZ4RD	F	4	N	9	1	B
6GCLXD	F	4	N	9	1	B
6GW3V	F	4	N	9	1	B
6H9PHV	F	4	N	9	1	B
6PMGMZ	F	4	N	9	1	B
6QJQZP	F	4	N	9	1	B
6W2DH9	F	4	N	9	1	B
6XYLPR	F	4	N	9	1	B
7CWWWB	F	4	N	9	1	B
7FAU4X	F	4	N	9	1	B
7JX78A	F	4	N	9	1	B
7MFA7T	F	4	N	9	1	B
7N7P4G	F	4	N	9	1	B
7NRZ6B	F	4	N	9	1	B
7V6AC4	F	4	N	9	1	B
82EJLL	F	4	N	9	1	B
8329HJ	F	4	N	9	1	B
86VJPK	F	4	N	9	1	B
8K6YG3	F	4	N	9	1	B
8RLJJE	F	4	N	9	1	B
8V7CTV	F	4	N	9	1	B
8ZXLTL	F	4	N	9	1	B
9AZ9C7	F	4	N	9	1	B
9BQJ6K	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
9J9VBX	F	4	N	9	1	B
9KMZAW	F	4	N	9	1	B
9QKYC6	F	4	N	9	1	B
9YJHYU	F	4	N	9	1	B
A68W8E	F	4	N	9	1	B
A6GHKG	F	4	N	9	1	B
A98VBY	F	4	N	9	1	B
AAD82N	F	4	N	9	1	B
AAVD76	F	4	N	9	1	B
ADBP22	F	4	N	9	1	B
AEFWW3	F	4	N	9	1	B
AKCXQ2	F	4	N	9	1	B
AKDY8T	F	4	N	9	1	B
AML6TU	F	4	N	9	1	B
ANHGVP	F	4	N	9	1	B
APERVX	F	4	N	9	1	B
AQL4KM	F	4	N	9	1	B
ATBDL2	F	4	N	9	1	B
AWN8AL	F	4	N	9	1	B
AYEK24	F	4	N	9	1	B
AZQDM7	F	4	N	9	1	B
B3UCPC	F	4	N	9	1	B
B46283	F	4	N	9	1	B
B7TQD2	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
B9G7H3	F	4	N	9	1	B
BDVJMW	F	4	N	9	1	B
BGT8XC	F	4	N	9	1	B
BH8KQF	F	4	N	9	1	B
BJV67J	F	4	N	9	1	B
BRQQAG	F	4	N	9	1	B
BUFGKG	F	4	N	9	1	B
BW6WYJ	F	4	N	9	1	B
BXYHQP	F	4	N	9	1	B
BXZ76U	F	4	N	9	1	B
C2A7EQ	F	4	N	9	1	B
C34R6W	F	4	N	9	1	B
C3RTD9	F	4	N	9	1	B
CCUDBU	F	4	N	9	1	B
CHPTFA	F	4	N	9	1	B
CHZVYM	F	4	N	9	1	B
CRNXXA	F	4	N	9	1	B
CUD846	F	4	N	9	1	B
D27W47	F	4	N	9	1	B
D3JDEX	F	4	N	9	1	B
D6C3ZE	F	4	N	9	1	B
D8E3XQ	F	4	N	9	1	B
DB2QMX	F	4	N	9	1	B
DHDXVL	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
DK8G7Z	F	4	N	9	1	B
DLZYD9	F	4	N	9	1	B
DMEQJQ	F	4	N	9	1	B
DQWA4L	F	4	N	9	1	B
DXCV9J	F	4	N	9	1	B
DXEHPW	F	4	N	9	1	B
DXPCF6	F	4	N	9	1	B
E29AH7	F	4	N	9	1	B
E2NA2G	F	4	N	9	1	B
E68ZU8	F	4	N	9	1	B
EBB4LQ	F	4	N	9	1	B
EBT7CZ	F	4	N	9	1	B
ECPU33	F	4	N	9	1	B
EG4YPJ	F	4	N	9	1	B
ELTTCJ	F	4	N	9	1	B
ER3UME	F	4	N	9	1	B
EU7RWM	F	4	N	9	1	B
EWWRER	F	4	N	9	1	B
EZDA32	F	4	N	9	1	B
F3XEE7	?	4	N	9	1	B
FAV99X	F	4	N	9	1	B
FAVBX3	F	4	N	9	1	B
FEBPWU	F	4	N	9	1	B
FGHRW8	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
FHNGVA	F	4	N	9	1	B
FJ432J	F	4	N	9	1	B
FLDA4C	F	4	N	9	1	B
FLTYJ6	F	4	N	9	1	B
FRD6QC	F	4	N	9	1	B
FW7C8Z	F	4	N	9	1	B
FYDKH6	F	4	N	9	1	B
FYF7F7	F	4	N	9	1	B
FZMPVT	F	4	N	9	1	B
FZT8AD	F	4	N	9	1	B
G63DFQ	F	4	N	9	1	B
G9Y2UC	F	4	N	9	1	B
GAVCUL	F	4	N	9	1	B
GEQDMM	F	4	N	9	1	B
GJ2RK8	F	4	N	9	1	B
GJDA4X	F	4	N	9	1	B
GKFLFU	F	4	N	9	1	B
GKXU6N	F	4	N	9	1	B
GL2QD7	F	4	N	9	1	B
GL8EXB	F	4	N	9	1	B
GPP7ZK	F	4	N	9	1	B
GQXBLV	F	4	N	9	1	B
GUWN7Z	F	4	N	9	1	B
GV7TH4	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
H2HUPT	F	4	N	9	1	B
H4N7P3	F	4	N	9	1	B
HCEZG7	F	4	N	9	1	B
HKTW8X	F	4	N	9	1	B
HMXCU4	F	4	N	9	1	B
HTJV6B	F	4	N	9	1	B
HUFPT3	F	4	N	9	1	B
HUVRBF	F	4	N	9	1	B
J4BHBR	F	4	N	9	1	B
J4ZW3W	F	4	N	9	1	B
JA682X	F	4	N	9	1	B
JD6782	F	4	N	9	1	B
JD9Y CJ	F	4	N	9	1	B
JJC363	F	4	N	9	1	B
JTX7AG	F	4	N	9	1	B
K349CT	F	4	N	9	1	B
K8WEK4	F	4	N	9	1	B
K8X6ZY	F	4	N	9	1	B
K98CZ7	F	4	N	9	1	B
K9B8T7	F	4	N	9	1	B
KD283E	F	4	N	9	1	B
KEEQX6	F	4	N	9	1	B
KHTKE3	F	4	N	9	1	B
KKKEKJ	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
KMMKTX	F	4	N	9	1	B
KN2Z9K	F	4	N	9	1	B
KRYH9X	F	4	N	9	1	B
KTB6XY	F	4	N	9	1	B
KTWK8A	F	4	N	9	1	B
KWC9NZ	F	4	N	9	1	B
KY2JGE	F	4	N	9	1	B
L2N294	F	4	N	9	1	B
L3YBE3	F	4	N	9	1	B
LBP3CV	F	4	N	9	1	B
LECDYF	F	4	N	9	1	B
LHTVQ	F	4	N	9	1	B
LTVQ2U	F	4	N	9	1	B
LVGZ23	F	4	N	9	1	B
M238BU	F	4	N	9	1	B
M6HYZ2	F	4	N	9	1	B
M7W7FG	F	4	N	9	1	B
M8Q8QR	F	4	N	9	1	B
MAQZJK	F	4	N	9	1	B
MCZQMZ	F	4	N	9	1	B
MGDY27	F	4	N	9	1	B
MMW7GP	F	4	N	9	1	B
MRCMQU	F	4	N	9	1	B
MRVK3U	F	4	N	9	1	B

TABLE 1

WebCode	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
MTKVXT	F	4	N	9	1	B
MW7KH7	F	4	N	9	1	B
MZHPQK	F	4	N	9	1	B
N78BPY	F	4	N	9	1	B
N7PFUQ	F	4	N	9	1	B
NAQGXU	F	4	N	9	1	B
NEZTWF	F	4	N	9	1	B
NKNH9D	F	4	N	9	1	B
NNL2DW	F	4	N	9	1	B
NR7TME	F	4	N	9	1	B
NW3EDG	F	4	N	9	1	B
NW3FF3	F	4	N	9	1	B
NWPUYD	F	4	N	9	1	B
P7JJZ8	F	4	N	9	1	B
PA77PD	F	4	N	9	1	B
PEZF6Y	F	4	N	9	1	B
PH3EFR	F	4	N	9	1	B
PK6CNY	F	4	N	9	1	B
PNP4Z2	F	4	N	9	1	B
PQ86GN	F	4	N	9	1	B
PV6JCQ	F	4	N	9	1	B
PZEKR3	F	4	N	9	1	B
PZGHRQ	F	4	N	9	1	B
Q2BD7L	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
Q93X2L	F	4	N	9	1	B
QF2H73	F	4	N	9	1	B
QNXGHA	F	4	N	9	1	B
QUPH4W	F	4	N	9	1	B
QUTZA9	F	4	N	9	1	B
R24PZR	F	4	N	9	1	B
R64PN4	F	4	N	9	1	B
R68C6H	F	4	N	9	1	B
R9ABFA	F	4	N	9	1	B
RA4XWK	F	4	N	9	1	B
RDRYHQ	F	4	N	9	1	B
RJ9H4Z	F	4	N	9	1	B
RKHMGN	F	4	N	9	1	B
RLWHCB	F	4	N	9	1	B
RNGFHT	F	4	N	9	1	B
RP7RB8	F	4	N	9	1	B
RU6NXX	F	4	N	9	1	B
RXP2RG	F	4	N	9	1	B
RYVHTT	F	4	N	9	1	B
RYWKBB	F	4	N	9	1	B
T2ZMNT	F	4	N	9	1	B
T4KEXA	F	4	N	9	1	B
T6X9BP	F	4	N	9	1	B
T7TBFX	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
T7YUG3	F	4	N	9	1	B
T9FCEE	F	4	N	9	1	B
TAF2WP	F	4	N	9	1	B
TBPWAL	F	4	N	9	1	B
TFEVNW	F	4	N	9	1	B
TFFTVL	F	4	N	9	1	B
TKUC82	F	4	N	9	1	B
TTNJP7	F	4	N	9	1	B
TULRXQ	F	4	N	9	1	B
TYC7EK	F	4	N	9	1	B
U2YXAM	F	4	N	9	1	B
U48LWL	F	4	N	9	1	B
U83YH4	F	4	N	9	1	B
UCW2CW	F	4	N	9	1	B
UDABP3	F	4	N	9	1	B
UJXNCP	F	4	N	9	1	B
UKRTUX	F	4	N	9	1	B
UL3Q8F	F	4	N	9	1	B
UMCZXR	F	4	N	9	1	B
UMHFNR	F	4	N	9	1	B
UN37AB	F	4	N	9	1	B
V36D3R	F	4	N	9	1	B
V4XQQY	F	4	N	9	1	B
V4YMWN	F	4	N	9	1	B

TABLE 1

WebCode	Character1	Character2	Character3	Character4	Character5	Character6
V72K8G	F	4	N	9	1	B
V7P6EU	F	4	N	9	1	B
V9D794	F	4	N	9	1	B
VDKNG6	F	4	N	9	1	B
VEJZ87	F	4	N	9	1	B
VGLUWB	F	4	N	9	1	B
VGLXFD	F	4	N	9	1	B
VKZMPN	F	4	N	9	1	B
VMPVW6	F	4	N	9	1	B
VQRH2U	F	4	N	9	1	B
VZVRDL	F	4	N	9	1	B
W3Y4AD	F	4	N	9	1	B
W69XJK	F	4	N	9	1	B
WBB8L7	F	4	N	9	1	B
WBBYR2	F	4	N	9	1	B
WCK7T9	F	4	N	9	1	B
WFPEXP	F	4	N	9	1	B
WFRAY3	F	4	N	9	1	B
WM86LY	F	4	N	9	1	B
WM8NML	F	4	N	9	1	B
WPDD3W	F	4	N	9	1	B
WRZ4ZU	F	4	N	9	1	B
WZRMD3	F	4	N	9	1	B
X4T6VV	F	4	N	9	1	B

TABLE 1

WebCode	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
X7ZD9L	F	4	N	9	1	B
X8NYPQ	F	4	N	9	1	B
X9KCFP	F	4	N	9	1	B
XGULZB	F	4	N	9	1	B
XKVU4L	F	4	N	9	1	B
XKWZLL	F	4	N	9	1	B
XP738B	F	4	N	9	1	B
XQZQML	F	4	N	9	1	B
XVHX4	F	4	N	9	1	B
XWQ3PA	F	4	N	9	1	B
Y6M4XZ	F	4	N	9	1	B
Y7VNQM	F	4	N	9	1	B
Y9HXTG	F	4	N	9	1	B
YABT8C	F	4	N	9	1	B
YAQYM2	F	4	N	9	1	B
YE8CF3	F	4	N	9	1	B
YFKY2X	F	4	N	9	1	B
YGZ7FR	F	4	N	9	1	B
YHNRXG	F	4	N	9	1	B
YJHLMY	F	4	N	9	1	B
YPQVRL	F	4	N	9	1	B
YRBPNM	F	4	N	9	1	B
YUMDCT	F	4	N	9	1	B
YVB2H2	F	4	N	9	1	B

TABLE 1

WebCode	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
YWUTN6	F	4	N	9	1	B
YZHRK8	F	4	N	9	1	B
Z6WZMH	F	4	N	9	1	B
Z73AD9	F	4	N	9	1	B
Z9GUNP	F	4	N	9	1	B
ZKPGBA	F	4	N	9	1	B
ZPLPBC	F	4	N	9	1	B
ZTHHXE	F	4	N	9	1	B
ZUFHTQ	F	4	N	9	1	B
ZV9Q2N	F	4	N	9	1	B
ZVQKZD	F	4	N	9	1	B
ZWEDET	F	4	N	9	1	B
ZXVDLP	F	4	N	9	1	B

Response Summary						Participants: 348
	<u>Character1</u>	<u>Character2</u>	<u>Character3</u>	<u>Character4</u>	<u>Character5</u>	<u>Character6</u>
Consensus	F	4	N	9	1	B
Number	347	348	348	348	348	348
Percent	99.7%	100.0%	100.0%	100.0%	100.0%	100.0%

Conclusions

TABLE 2

WebCode	Conclusions
232G4B	the restoration techniques applied allowed the identification of the previously deleted serial number "F4N91B"
24EUMD	Through the chemical restoration process, it was determined that: 1. The serial number of the metal plate (stainless steel) described in item 1, was restored and it corresponds to: F4N91B.
269NDV	As a result of an attempted obliterated number restoration the following characters were observed: F4N91B.
26R6GG	Visual examination and chemical treatment of the serial number area on the metal bar stock, Item 1, reveal the following number: F 4 N 9 1 B.
29W2F8	The obliterated serial number on the steel bar was restored to read: F4N91B.
2CBPPH	Q1-The submitted stainless steel bar stock with a suspected obliterated serial number was visually examined and noted with an area damaged through the use of a possible grinding tool. The damaged area was photographed as received. Using etching solutions, particularly Fry's Reagent & Nitric Acid, the area was swabbed and the serial number was restored to read: F4N91B. The restored number was photographed.
2D6W8E	Visual examination and chemical treatment of the serial number area on the steel bar stock, Item 1A, reveal the following number: F4N91B
2DQX3D	Using standard laboratory techniques, the obliterated serial number on Item #1 was restored to read F 4 N 9 1 B.
2EUWTC	Metal bar stock was chemically processed. The serial number was fully restored to read (F4N91B) on 3/18/2015.
2EZ64K	The serial number was restored to: F4N91B.
2MTFEF	The serial number on Item 1 was fully restored to read F4N91B.
2MVHCD	The obliterated serial number on the submission was magnetically processed and restored to read "F4N91B".
2QD8MW	Serial number restoration was conducted on item 1, the stainless steel barstock using acidic etching chemical processing techniques. The following six characters were revealed: F4N91B
2WY9HF	The above number was obliterated through mechanically obliteration of metal surface from the serial number field.
2XFRYL	Submission #1-1 had a milled section suspected of having a serial number. The area was polished and magnetic particle inspection method was used to restore the serial number. The serial number was restored to be "F4N91B"

TABLE 2

WebCode	Conclusions
2YN2PX	Forensic restoration techniques were applied to the machined area on the steel bar stock labeled; test number 15-5250 item 1. A series of previously stamped characters were restored that read; F4N91B.
2YYM2Y	3. On 2015-03-03 during the performance of my official duties I received a sealed evidence bag with number PA4002453928 from Case Administration of the Ballistics Section, containing the following exhibit: 3.1 One (1) piece of metal marked by me "47326/15 ". 4. The intention and scope of this forensic examination comprise the following: 4.1 Techniques associated with the recovering and restoration processes of obliterated alpha-numeric figures on metals. 5. After application of the electro-magnetic process, I determined the serial number on the piece of metal mentioned in paragraph 3.1 as F4N91B.
2ZWBGU	A forensic restoration restored previously stamped characters which read "F4N91B". The style, font and alignment were similar to the supplied stamped sample(s).
33GYHG	Restored, the examination and chemical processing of the item, revealed a full serial number restore, with sufficient characteristics to allow the examiner to make a positive identification. The numbers recovered are as follows, F4N91B.
34937G	Examination and magnetic processing restored the obliterated serial number, which was determined to be "F4N91B".
3BT3NF	[No Conclusions Reported.]
3HEYJH	The obliterated area of exhibit 1 was chemically processed and restored to read "F4N91B"
3KMM7F	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1, reveals the following number: F4N91B.
3MBQPT	The test piece of metal with an obliterated serial number, located on the center of one of the flat sides, was chemically processed and restored to read "F4N91B".
3RH9W9	Examination and processing of the K-1 stainless steel bar restored the original obliterated serial number, which was determined to be F4N91B.
3UURCX	Serial number restoration techniques applied to item 1 revealed the apparent characters of F4N91B.
3WBGAF	The obliterated number on the stainless steel sample was located on the side of the bar stock. The area was chemically processed and the serial number was restored to read "F4N91B".
3WCLXH	The following characters were recovered in the obliterated area of Item 1: F 4 N 9 1 B
3XRBCB	The stainless steel bar stock was examined and appeared to have an obliterated area with milling type marks. Standard physical restoration techniques were applied to the obliterated area. Alphanumeric characters in that area were restored and read "F4N91B".
424AQU	As a result of conducting a serial number restoration technique on Item 1 (sample of milled stainless steel), I made a recovery of previously stamped characters 'F4N91B'. It is my opinion that this recovery appeared consistent with characters stamped in the provided aluminium standard.

TABLE 2

WebCode	Conclusions
4867B9	Based on the above examination and findings, I am of the opinion that the original serial number on the piece of stainless steel bar stock 'item 1' is F4N91B.
48UK3D	Visual examination and chemical treatment of the serial number area on the metal plate, Item 1, reveal the following number: F4N91B
4C8V8N	The K-1 bar stock (Aluminum Standard) was used as a reference as to the design of the alphanumeric characters. Examination and processing of the Q-1 bar stock (Item 1) restored the original serial number, which was determined to be F4N91B.
4DUL4M	The serial number on the plate was retrieved as F4N91B.
4FP3MB	Item# 1 was physically and chemically processed. Serial number restored to read F4N91B on 04/09/2015.
4GZULJ	Item 1 was physically and microscopically examined. Its serial number had been obliterated by machining and was not legible when received. The serial number area on Item 1 was prepared and treated with restoration reagents. Item 1's serial number was restored to legible condition and was recorded as F4N91B.
4KJYAG	The piece of metal bar stock (Exhibit 1) had an obliterated surface as received. The obliterated surface was mechanically polished then chemically treated. The serial number restored on the obliterated surface of the piece of metal (Exhibit 1) is F4N91B.
4M7Q6J	The serial number area of Item 1 was physically and microscopically examined. The serial number area of Item 1 was prepared and chemically processed and the serial number was determined to be: F 4 N 9 1 B
4PNY4J	In my opinion, the serial number on the submitted item was F4N91B.
4PPWEE	The serial number of Item 1 was restored using magnetic particle restoration techniques and was found to be: F4N91B
4TBZJK	Physical processing of the submitted stainless steel bar stock restored the obliterated original serial number to read "F4N91B".
4TTJEX	Examination of Item 1 revealed an obliterated area on the stainless steel bar stock. Standard chemical restoration techniques revealed the following characters: "F4N91B".
4WAQUK	Restoration of the obliterated serial number was performed on questioned surface of the stainless steel bar stock marked "Item 1". The restored serial number was found to have six characters – "F4N91B".
4XJV89	The serial number was removed approximately 0.4 mm thickness. The removed serial number was resulted by the examination: F4N91B.
67AV7X	Examination of Item 1 revealed an obliterated area on the front side. Standard chemical restoration techniques revealed the following characters: F4N91B.
67RP32	Serial Number recovered using the chemical etching method.

TABLE 2

WebCode	Conclusions
6CGBM9	The grinded surface on the stainless steel bar was electrochemically treated and a set of number was restored and read as "F4N91B"
6CZ4RD	The recovered serial # on item 1 is F4N91B.
6GCLXD	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1A, reveal the following number: F4N91B. Item 1B was submitted as a reference standard for comparison to Item 1A. No analysis was performed on Item 1B.
6GW3V	Serial number restoration techniques applied to Item #1 (stainless steel bar stock) revealed the following characters: F4N91B.
6H9PHV	Using laboratory chemical restoration procedures, the serial number was restored to read - F4N91B.
6PMGMZ	Submitted: One (1) block of silver non-ferrous metal measuring approximately 2 3/4" x 1 " x 1/4" Displaying a 1" x 1" area milled away. Serial # F4N91B recovered with chemical etching - Item marked CTS 15-5250A for Identification.
6QJQZP	The Item 1 obliterated serial number, located in the center of the piece, was chemically processed and restored to read F4N91B.
6W2DH9	Attempted[sic] restoration of the obliterated serial number on Item No. 1 using an acidic method of restoration revealed the digits of the serial number to be as follows: Item 1: F 4 N 9 1 B
6XYLPR	After application of the electromagnetic process, I determined the serial number of the exhibit mentioned above as F4N91B.
7CWVWB	The obliterated area on the piece of stainless steel bar stock in Item 1 was chemically etched and the serial number was determined to be F4N91B.
7FAU4X	After application of the electromagnetic process, I determined the serial number of the stainless steel bar as F4N91B.
7JX78A	The serial number of Item 1 was restored to read F4N91B this conclusion was verified by firearms examiner.
7MFA7T	Standard laboratory procedures for restoring serial numbers stamped in metal have been employed on the center of this sample. The serial number was determined to be "F4N91B".
7N7P4G	My final interpretation of the serial number stamped on Item #1 is F4N91B.
7NRZ6B	On 04/23/15 restoration of a suspected obliterated serial number on item 1 was attempted. Examination and restoration of the obliterated area on Item 1 revealed the following characters "F4N91B". Four digital images were captured and saved on the T:drive.
7V6AC4	Using chemical etching techniques, the serial number was restored to read F4N91B.
82EJLL	K-1 was used as a standard for the proficiency examination. Examination and processing of the Q-1 bar stock restored the original obliterated serial number, which was determined to be F4N91B.

TABLE 2

WebCode	Conclusions
8329HJ	After application of the electro-acid etching process and electro magnetic process I determined the serial number of the bar stock as F4N91B.
86VJPK	Serial Number Restoration Analysis: Methodology - Chemical Reagent Etching/Microscopy/Physical. Serial number restoration procedures revealed the serial number on Item 1, the stainless steel bar stock, to be: F 4 N 9 1 B.
8K6YG3	THE ITEM 1 OBLITERATED SERIAL NUMBER, LOCATED ON THE FRONT MIDDLE OF THE STAINLESS STEEL BAR STOCK WAS POLISHED USING THE DREMEL AND CHEMICALLY PROCESSED AND RESTORED TO READ F4N91B.
8RLJJE	The obliterated area of Exhibit 1 (Nonmagnetic Metal) was visually examined, polished, and chemically processed. The characters were restored and appeared as follows: F4N91B
8V7CTV	After application of the electromagnetic process, I determined the number of the steel bar as F4N91B.
8ZXLTL	Visual examination of this item revealed the presence of grind marks on the center of the bar. This area was etched with acid solutions and the following was restored: F 4 N 9 1 B
9AZ9C7	The serial number was restored to read F4N91B.
9BQJ6K	After application of the electro-acid etching process, I determined the serial number of "Item 1" mentioned in 1.) as F4N91B.
9J9VBX	Examination of test no. 15-5250, Item #1 revealed an obliterated area on the surface of the bar stock. Standard serial number restoration techniques revealed the following characters "F4N91B".
9KMZAW	Using standard laboratory procedures, the serial number was restored to read: F4N91B
9QKYC6	This number was restored by using the magneto-optical and the chemical etching methods. On Item 1 was restored a marking with 6 characters: "F4N91B".
9YJHYU	With the chemical enhancement we were able to find out the erased number F4N91B.
A68W8E	Examination of the submitted steel bar stock, revealed that the serial number had been obliterated. Physical and chemical processing of the submitted steel bar stock restored the obliterated, original serial number to read "F4N91B".
A6GHKG	After application of the electro-acid etching process, I determined the serial number of the steel bar stock as F4N91B.
A98VBY	The obliterated number on the Item 1 piece of bar stock was examined, polished, and chemically restored to reveal the serial number F4N91B.
AAD82N	After application of the electromagnetic etching process, I determined the serial number of the exhibit as F4N91B.
AAVD76	An obliterated area was observed on item 1. Using standard serial number restoration techniques, the obliterated serial number on item 1 was restored to read: F 4 N 9 1 B.

TABLE 2

WebCode	Conclusions
ADBP22	Item #1 was received with an obliterated serial number. Attempts to restore the serial number with Dremel polishing and chemical etching successfully restored the serial number to read "F4N91B"
AEFWW3	The serial number on the steel bar in Item 1 was found to be obliterated. Using polishing and chemical etching, the serial number was restored and determined to be F 4 N 9 1 B.
AKCXQ2	Using microscopic and chemical analysis techniques, the sample's original serial number was determined to be F4N91B.
AKDY8T	After application of the electromagnetic etching process, I determined the serial number of the exhibit as F4N91B on the metal plate.
AML6TU	[No Conclusions Reported.]
ANHGVP	The obliterated area on Exhibit 1 (Metal Bar Stock) was visually examined and chemically processed. The characters were restored and appeared as follows: F4N91B.
APERVX	Following electrochemical aching[sic], using the Fry's Reagent, the obliterated serial number was recovered - F4N91B.
AQL4KM	After application of the electromagnetic process, I determined the serial number of the aluminium bar as F4N91B.
ATBDL2	Item A1: The obliterated six character serial number on the item A1 piece of stainless steel bar stock was restored and found to be F-4-N-9-1-B.
AWN8AL	I visually examined Item #1-1 and observed that on one side it appears that an area has been removed with a fly cutter or similar machining operation. I took digital images of Item #1-1 and the standard aluminum block with stamped letters and numbers for documentation. I also checked both with a magnet to confirm that they are non-magnetic. I examined Item #1-1 under the stereomicroscope. I observed that the area that had been removed was cut to a shallow depth and that a pattern of criss-crossing arcs could be seen on the surface. This indicates that a circular cutting tool, like a fly cutter or end mill, was used to machine this block of stainless steel. I polished the area with a Dremel tool with a gratex wheel and again with a buffing wheel and rouge. I used chemical etching (Fry's reagent) in an attempt to restore any obliterated numbers. I was able to restore the serial number to F4N91B. The area was coated with clear nail polish to preserve it. Photographs were taken during the etching process and to document the restored serial number.
AYEK24	Using standard laboratory restoration techniques, the serial number on Item #1 was restored to read F 4 N 9 1 B.
AZQDM7	the number was partially visible with naked eye in oblique light, (when illuminating light was set at certain angle)
B3UCPC	Using standard laboratory techniques, the obliterated serial number on Item 1 was restored to read: F4N91B.
B46283	Using chemical etching techniques the serial number was restored to read F4N91B.

TABLE 2

WebCode	Conclusions
B7TQD2	Attempts were made to restore the obliterated serial number on the piece of stainless steel bar stock submitted in Item 1 using polishing techniques. The serial number was restored and determined to be F4N91B.
B9G7H3	Piece of metal (item #1) was physically and chemically processed. Its serial number was restored to read F4N91B on 03/10/15
BDVJMW	Serial number restored by chemical etching process.
BGT8XC	Upon electrochemical treatment on the filed surface, the original number was restored and read as F4N91B.
BH8KQF	The defaced serial number was chemically restored to "F4N91B".
BJV67J	The obliterated area on the submitted piece of stainless steel bar stock was restored using mechanical polishing and chemical etching to reveal the following serial number: F4N91B. The restoration was documented with notes and photographs.
BRQQAG	Chemical etching techniques were used on the submitted rectangular stainless steel block, item 1, in an attempt to restore the obliterated serial number. The serial number was restored to: "F4N91B".
BUFGKG	After application of the Electro-Acid etching process, I determined the number of the exhibit as F4N91B.
BW6WYJ	Exhibit 1 has an area of obliteration near the center of the flat side. The obliteration appears to be accomplished by cutting with a 1-inch circular cutter such as an end mill. The resulting toolmarks are not suitable for identification purposes. The area was processed and the serial number was fully restored to read F4N91B.
BXYHQP	The obscured serial number of evidence item 1 on the center of metal bar was chemically treated with the following results obtained. The recovered serial number is F 4 N 9 1 B
BXZ76U	After application of the electromagnetic process, I determined the serial number of the exhibit as F4N91B.
C2A7EQ	After application of the electromagnetic etching process, I determined the serial number of the exhibit as F4N91B.
C34R6W	Item #1 - Piece of stainless steel bar stock with defaced serial number. The area was cleaned polished, and the chemical etching process was utilized to restore the number to read F4N91B.
C3RTD9	Serial number restoration procedures were performed on the metal bar and it was determined that the serial number was F4N91B.
CCUDBU	Surface was obliterated. By magnetic restoration we found F4N91B, in accordance with aluminium pattern.
CHPTFA	Examinations showed the serial number of Item 1 to be obliterated. The serial number of Item 1 was restored using magnetic particle restoration techniques and chemical etching techniques and was found to be: F4N91B.

TABLE 2

WebCode	Conclusions
CHZVYM	The obliterated area on Exhibit 1 (metal block) was visually examined and processed using magnetic particle reagent. The characters were restored to read: F 4 N 9 1 B
CRNXXA	The serial number on the piece of metal (Exhibit 01) was mechanically and chemically treated and restored to read F4N91B.
CUD846	Serial number on the bar stock was defaced by an abrasive method. Restored using the chemical etching method.
D27W47	The obliterated serial number on the stainless steel bar stock in Item 1 was completely restored and found to be F4N91B.
D3JDEX	Examination and processing of the Q-1 piece of stainless steel restored the original obliterated serial number, which was determined to be F4N91B.
D6C3ZE	After application of the electro-acid etching process and electro-magnetic processes, I determined the serial number of the exhibit mentioned in 3.1 as F4N91B.
D8E3XQ	On 2015-03-05 during the performance of my official duties I received a sealed evidence bag with number PA4001642050 from Case Administration of the Ballistics Section containing the following: 3.1 One (1) sealed white carton box labelled 2015 CTS Forensic Testing Program Test No. 15-5250 Serial Number Restoration sample pack: SNR1, containing the following exhibits: 3.1.1 One (1) aluminium standard bar stock with the following alpha-numeric characters: "A", "B", "C", "D", "E", "F", "H", "J", "K", "N" and "1", "2", "3", "4", "5", "6", "7", "8", "9" and "0" respectively. 3.1.2 One (1) aluminium suspect bar stock with the serial number erased marked by me "47415/15 Item 1". 4. The intention and scope of this forensic examination comprises of the following: 4.1 Techniques associated with the recovering and restoration process of obliterated alpha-numeric figures on metals. 5. After application of the electro magnetic process, I determined the serial number of the aluminium bar stock mentioned in paragraph 3.1.2 as F4N91B.
DB2QMX	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number F4N91B.
DHDXVL	After application of the electro-acid etching process, I determined the serial number of the stainless steel bar mentioned in 3.1 as F4N91B.
DK8G7Z	Using chemical etching techniques the serial number was restored to read F4N91B.
DLZYD9	An area of the stainless steel bar stock (item 1) had been removed by a machining process. The obliterated area was cleaned, polished and etched with chemical reagents. A serial number of F4N91B was restored.
DMEQJQ	Using standard laboratory restoration techniques, the serial number of Item 1 was restored with the following results: Serial Number: F 4 N 9 1 B was restored to Item 1.
DQWA4L	Serial number restoration techniques applied to Item 1 (stainless steel bar stock) revealed the following characters: F4N91B.
DXCV9J	As a result of an attempted obliterated number restoration the following characters were observed:F4N91B

TABLE 2

WebCode	Conclusions
DXEHPW	The serial number was restored to read "F4N91B".
DXPCF6	Using standard laboratory restoration techniques, the serial number on Exhibit 1 was restored to read F4N91B.
E29AH7	The serial number was resolved by using magnetic particle inspection (MPI) to read F4N91B.
E2NA2G	After application of the electro-acid etching process, I determined the serial number of the steel bar stock as F4N91B.
E68ZU8	The serial number on the piece of metal (Exhibit 01) was mechanically and chemically treated and restored to read F4N91B.
EBB4LQ	The Item 1 piece of stainless steel bar stock was physically and chemically processed in an attempt to restore the obliterated serial number with the following result: The serial number was restored to read F4N91B. The serial number was not searched in any databases.
EBT7CZ	Using standard laboratory restoration techniques, the obliterated serial number on Item 1 was restored to read F4N91B.
ECPU33	Visual examination and chemical treatment of the serial number area on the plate, Item 1A, reveal the following number: F4N91B. Item 1B was submitted as a reference standard for comparison to Item 1A. No analysis was performed on the item listed.
EG4YPJ	Examination and restoration of the obliterated area on Item 1 (a piece of metal) revealed the following characters: "F4N91B".
ELTTCJ	After application of the electro-acid etching process, I determined the serial number of the exhibit mentioned in 3.1.2 as F4N91B (on the flat surface of the exhibit).
ER3UME	Visual examination of this item revealed the presence of grind marks on the center of the bar. This area was etched with acid solutions and the following was restored: F 4 N 9 1 B
EU7RWM	Examination of Item 1 revealed an obliterated area. Standard chemical restoration procedures were utilized and the characters "F4N91B" were restored.
EWWRER	The serial number of Item 1, as restored, is F4N91B.
EZDA32	Examination and chemical processing of item 1 determined the original obliterated serial number to be F4N91B.
F3XEE7	After application of the chemical process, I determined the partial serial number of the Item to be 4N91B. The first digit was unclear and could not be recovered.
FAV99X	Examination of the surface of the stainless steel bar revealed evidence of an obliterated serial number. The surface was treated and the following original serial number was restored: F4N91B.

TABLE 2

WebCode	Conclusions
FAVBX3	On this date 3-16-15 this technician received one piece of evidence with the serial number being removed. The evidence was a 3 X 1 piece of stainless steel. A request was submitted for a serial restoration. A visual inspection was performed and then the evidence was photographed. The area that had been filed (removed) was first sanded to get the area smooth . Three acids were then applied to the area. The following serial was recovered F4N91B. The area was then photographed and covered with a sealer.
FEBPWU	The serial number was restored to read "F4N91B".
FGHRW8	The obliterated serial number on the piece of metal (Exhibit 1) was mechanically and chemically restored to read "F4N91B."
FHNGVA	THE SERIAL NUMBER THAT HAS BEEN RECOVERED AFTER FRY'S TREATMENT IS F4N91B
FJ432J	A forensic procedure was performed on the ground area of the pad. A series of previously stamped characters was restored which read: F4N91B.
FLDA4C	Using the acid etch method, the serial number on the rectangular piece of stainless steel was restored as "F4N91B".
FLTYJ6	The Item #1 was physically and chemically processed. Its serial number was restored to read F4N91B.
FRD6QC	After application of the electro-acid etching process, I determined the serial number on Item 1 as F4N91B.
FW7C8Z	Through the chemical process it was determined that: 1. The serial number of the piece of stainless steel bar stock, described as item 1, was restored and it corresponds to: F4N91B.
FYDKH6	The English translation from [Language] could be as fallow : "We have undertaken an attempt to recovery by prolonged application of appropriate corrosive chemical solution. This treatment has been positif. We can read F4N91B. [sic]
FYF7F7	Serial number restoration via acid etching yielded the full serial number F4N91B
FZMPVT	THE SURFACE OF ITEM 1, A SECTION OF STAINLESS STEEL BARSTOCK WAS POLISHED TO PREPARE IT FOR THE CHEMICAL ETCHING PROCESS. THE NUMBER WAS RESTORED BY THE CHEMICAL ETCHING PROCESS TO READ " F4N91B".
FZT8AD	Serial number restoration procedures revealed the serial number on Item 1, the stainless steel bar stock, to be: F4N91B
G63DFQ	STANDARD SERIAL NUMBER RESTORATION TECHNIQUES REVELED[sic] THE FOLLOWING CHARACTERS "F4N91B".
G9Y2UC	Item 1-1 Metal Bar: Visual examination of this item revealed the presence of grind marks on the middle of the bar. This area was etched with acid solutions and the following was restored: F 4 N 9 1 B
GAVCUL	Chemical restoration techniques were applied to Item #1 and the original serial number was restored as F4N91B.

TABLE 2

WebCode	Conclusions
GEQDMM	Serial number obliterated (deeply abraded), restored using chemical etching process. CTS number (15-5250) etchen[sic] on MB1 (Metal Block 1) for identification.
GJ2RK8	The obliterated serial number was restored to read F4N91B.
GJDA4X	Through the chemical restoration process, the following was determined: 1. The serial number of the stainless steel bar was restored and corresponds to: F4N91B.
GKFLFU	The serial number on the metal bar stock (1) was recovered as F4N91B.
GKXU6N	Item 1 was examined and the obliterated number restored and interpreted as "F4N91B".
GL2QD7	It was possible to restore the serial number: (see above)[Table 1 - Recovered Characters]
GL8EXB	Serial number restoration procedures revealed the serial number on Item 1, the stainless steel bar stock, to be: F 4 N 9 1 B
GPP7ZK	Examination of Item #1 revealed an obliterated area. Standard restoration techniques revealed the following characters: F 4 N 9 1 B
GQXBLV	Based on the above examination and findings, I am of my opinion that the original serial number on a piece of stainless steel bar stock "Item 1" is " F4N91B"
GUWN7Z	METAL PLATE CHEMICALLY PROCESSED. METAL PLATE FULLY RESTORED TO READ: F4N91B on 03/04/2015
GV7TH4	The serial number had at sometime been erased from the steel bar stock submitted, however, it was recovered at the laboratory using "Magnaflux", a non-destructive technique, when it was found to be "F4N91B".
H2HUPT	THE SURFACE OF ITEM 1 STAINLESS STEEL BAR STOCK WAS POLISHED TO PREPARE IT FOR THE APPLICATION OF CHEMICAL ETCHING SOLUTIONS. THE NUMBER RESTORED BY THE RESTORATION PROCESS READS: F4N91B
H4N7P3	The Item #1 was chemically processed. Its serial number was restored to read F4N91B.
HCEZG7	Examination and chemical processing of the obliterated serial number restored the following sequence: F 4 N 9 1 B.
HKTW8X	The serial number of Item 1 was chemically restored to read "F4N91B". This conclusion was verified by firearms examiner.
HMXCU4	The serial number on the piece of metal (Exhibit 01) was mechanically[sic] and chemically treated and restored to read F4N91B.
HTJV6B	Item 1 was processed by magnetic particle inspection and acid etching. The obliterated serial number was restored and determined to be F4N91B.
HUFPT3	Item #1 is a piece of stainless steel bar stock with a suspect obliterated serial number. The obliterated serial number is located on side "A" of the piece of stainless steel bar stock. Serial number restoration procedures were performed and it was determined that the serial number wa[sic] F4N91B.

TABLE 2

WebCode	Conclusions
HUVBRF	A forensic procedure on the ground area of the pad, restored six previously stamped characters which read: F4N91B.
J4BHBR	The obliterated serial number was restored to read F4N91B.
J4ZW3W	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1A, reveal the following number: F4N91B. Item 1B was submitted as a reference standard for comparison to Item 1A. No analysis was performed on Item 1B.
JA682X	The serial number has been restored successfully and appeared clearly and entirely.
JD6782	Using a combination of chemical and mechanical restoration techniques, the serial number was restored to read: F4N91B.
JD9YCI	The obliterated serial number on the piece of bar stock (Item 01), was chemically restored and determined to be "F4N91B".
JJC363	Exhibit 1 (Item 1) - One piece of stainless steel bar stock with an obliterated serial number. The serial number was restored to: F4N91B.
JTX7AG	An attempt was made to restore the obliterated serial number on the piece of metal bar stock and the following was recovered: F4N91B.
K349CT	Using standard laboratory techniques, the obliterated serial number on Item 1 was restored to read: F 4 N 9 1 B.
K8WEK4	Restoration of the obliterated serial number was performed on the questioned surface of the stainless steel bar stock labelled "Item 1". The restored serial number was found to have six characters – "F4N19B"[sic].
K8X6ZY	Examined the specimen marked #1. It is a steel bar stock, serial number removed. The serial number was chemically processed and restored to read F4N91B.
K98CZ7	The serial number on the steel bar stock was restored to read F4N91B.
K9B8T7	I was able to restore the sequence of characters F4N91B
KD283E	Item 1 was physically and chemically processed. Its serial # was restored to read: F4N91B.
KEEQX6	The obliterated serial number of Item 1 was restored to be F4N91B.
KHTKE3	The obliterated serial number on Item 1 was restored to read "F4N91B."
KKKEKJ	Item 001 (stainless steel bar stock) was examined and found to have an obliterated area. Standard restoration techniques revealed "F4N91B".
KMMKTX	Upon electrochemical treatment on the filed surface, the original number was restored and read as F4N91B.
KN2Z9K	The serial number on item 1 was restored to read F4N91B

TABLE 2

WebCode	Conclusions
KRYH9X	Opinions and Interpretations: Item #1 (A piece of stainless steel bar stock with suspected obliterated serial number) was examined on 02/23/2015. The obliterated number on Item #1 (bar stock) was recovered as F4N91B.
KTB6XY	Examination and processing of the obliterated serial number on the Item 1 bar stock restored the serial number to read "F4N91B".
KTKW8A	I examined the stainless steel bar stock and noted the serial number had been obliterated by apparent milling. I ground and polished the obliterated area. I used chemical etchants to restore the serial number to F4N91B. I documented my examination with photographs and notes.
KWC9NZ	6 characters were recovered : "F4N91B"
KY2JGE	After application of electro-acid etching process I determined the serial number as F4N91B on the stainless steel bar stock.
L2N294	Serial Number Restoration Analysis. Methodology - Chemical Reagent Etching/Physical. Serial number restoration procedures revealed the serial number on item 1, the piece of stainless steel, to be: F 4 N 9 1 B
L3YBE3	The serial number is ground off. The serial number (F4N91B) was restored by the acid etching process. Polishing and modified Frys reagent were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface of the item 1.
LBP3CV	The serial number of item 1 was restored to read F4N91B
LECDYF	The small piece of metal bar stock (item 1) was examined and an obliterated stamped serial number was recovered as F4N91B.
LHTWQ	The piece of metal, item 1, was examined and determined to have an area of obliteration. The area exhibited metal removal consistent with a milling-type of tool. Using standard physical and chemical methods, the area was polished and acid etched which restored the characters to F4N91B.
LTVQ2U	Visual examination and chemical treatment of the serial number area on the stainless steel bar stock, Item 1, reveal the following number: F4N91B.
LVGZ23	The serial number on Item 1 has been milled off. The serial number (F4N91B) was restored by the acid etching process. Polishing and modified Fry's reagent were used for the restoration. A chemical reaction was observed when the acid etching solution was applied to the surface of item 1.
M238BU	Prepared the surface on item 1 applies nondestructive method of magnaflux and obtain alphanumeric characters F4N91B.
M6HYZ2	The obliterated serial number was electromagnetically processed and was restored to read F4N91B.
M7W7FG	USING STANDARD LABORATORY TECHNIQUES THE SERIAL NUMBER OF ITEM 1 WAS RESTORED TO READ: F 4 N 9 1 B

TABLE 2

WebCode	Conclusions
M8Q8QR	Mechanical and Chemical processing of the submitted stainless steel bar stock revealed that the original serial number is F4N91B.
MAQZJK	The serial number in the stainless steel plate, described in the Item 1, was recovered and it consists of : F4N91B.
MCZQMZ	The serial number of Sub #1 was restored by means of magnetic particle inspection. The serial number was restored to read "F4N91B".
MGDY27	Examination and processing of the Item 1 bar restored the original obliterated serial number, which was determined to be F4N91B. No search of the NCIC Stolen Gun Files was performed as this is a proficiency test.
MMW7GP	The obliterated surface on the steel bar stock (Item 1) was polished and chemically processed. All characters could have been seen almost in same time during the examination. The serial number was determined to be F 4 N 9 1 B.
MRCMQU	The piece of stainless steel (Item #1) was chemically processed. Its serial number was restored to read (F4N91B) on 3/19/2015
MRVK3U	The serial number of the metal bar was restored and determined to be F4N91B.
MTKVXT	After application of the electro-magnetic process, we determined the serial number of the stainless steel bar stock as F4N91B.
MW7KH7	After application of the electro-acid etching process, I determined the serial number of the exhibit mentioned in 3.1 as F4N91B.
MZHPQK	The metal bar stock had an obliterated serial number. The serial number was restored to read "F4N91B".
N78BPY	Item 1 was physically and microscopically examined. The serial number area of Item 1 was prepared and treated with chemical reagents. As a result of these actions, the serial number was successfully restored to read "F4N91B".
N7PFUQ	Trough[sic] the restoration process of the serial number, was determined: 1. The serial number of the piece of "stainless steel", described as item #1, was restored and it correspond to: F4N91B.
NAQG XU	Using standard laboratory restoration techniques, the obliterated serial number on Item 1, was restored to read: F 4 N 9 1 B
NEZTWF	Serial number obliterated (abrasion). Serial number restored to read "F4N91B" using chemical etching method.

TABLE 2

WebCode	Conclusions
NKNH9D	3. On 2015-03-04 during the performance of my official duties I received a sealed evidence bag with number PA4001642051 from Case Administration of the Ballistics Section, containing the following exhibits: 3.1 One (1) aluminium plate with alpha and numeric characteristics on it, marked by me "47388/14A". 3.2 One (1) aluminium-metal plate with obliteration evidence, marked by me "47388/14B". 4. The intention and scope of this forensic examination comprise of the following: 4.1 Techniques associated with the recovering and restoration process of obliterated alpha-numeric figures on metals. 5. After application of the magnetic etching process, I determined the number as F4N91B on the aluminium-metal plate mentioned in paragraph 3.2.
NNL2DW	The serial number of "F4N91B" was restored on the piece of a stainless steel bar.
NR7TME	3. On 2015-03-06 during the performance of my official duties I received a sealed evidence bag with number PA4002453929 from Case Administration of the Ballistics Section, containing the following exhibits: 3.1 One (1) pierce[sic] of stainless steel bar with serial number erased but marked by me "47366/15". 3.2 One (1) pierce[sic] of aluminium bar with numbers "123456789" and alphabetical letters "ABCDEFHJKN". 4. The intention and scope of this forensic examination comprise of the following: 4.1 Techniques associated with the recovering and restoration processes of obliterated alpha-numeric figures on metals. 5. After application of the electro-magnetic process, I determined the serial number as possible as F4N91B on the obliterated area of the stainless steel bar mentioned in paragraph 3.1.
NW3EDG	After application of the electromagnetic process, I determined the number of the steel bar as F4N91B.
NW3FF3	After application of the electro-acid etching process and the electro-magnetic process, I determined the serial number of the bar stock mentioned in 3.1 as F4N91B.
NWPUYD	The defaced serial number of Item 1 was magnetically and chemically processed to read: "F4N91B".
P7JJZ8	After application of the electromagnetic etching process, I determined the serial number of the exhibit as F4N91B.
PA77PD	The serial number F4N91B was recovered on Item 1.
PEZF6Y	Examination of the submitted piece of bar stock revealed the applied serial number to have been obliterated. Physical processing of the piece of aluminum restored the obliterated, original serial number to read "F4N91B".
PH3EFR	Visual examination and chemical treatment of the serial number area on the steel bar stock, Item 1A, reveal the following number: F4N91B. Item 1B was submitted as a reference standard for comparison to Item 1A. No analysis was performed on the item listed.
PK6CNY	The serial number was restored and found to be F4N91B.
PNP4Z2	The serial number on Item 1 was restored and reads F4N91B
PQ86GN	Based on analysis, the original number on the plate has been restored and read as F4N91B

TABLE 2

WebCode	Conclusions
PV6JCQ	Using standard methods for restoring obliterated serial numbers, the number on Item 003-001 was restored to read: F4N91B.
PZEKR3	After application of the electro-acid etch process, I determined the serial number of the stainless steel bar stock mentioned in 3.1 as F4N91B.
PZGHRQ	Using standard laboratory techniques, the obliterated serial number on Item 1 was restored to read "F4N91B".
Q2BD7L	Using the magnetic testing method, the obliterated serial number appeared under ultraviolet light.
Q93X2L	I found the serial number to have been obliterated by filing. On electrochemical treatment, I developed the number F4N91B. I am of the opinion that the original serial number was F4N91B.
QF2H73	After application of the electro-acid etching process, I determined the serial number on Item 1 (a piece of stainless steel bar stock) as F4N91B.
QNXGHA	On 2015-03-03 during the performance of my official duties I received a sealed evidence bag with number PA4002453758 from Case Administration of the Ballistics Section containing the following: 3.1 One (1) steel bar of which the serial number was obliterated marked by me "47335/15 A". 4. The intention and scope of this forensic examination comprise the following: 4.1 Techniques associated with the recovering and restoration processes of obliterated alpha-numeric figures on metal. 5. After application of the electro-magnetic process, I determined the serial number on the exhibit mentioned in paragraph 3.1 as F4N91B. 6. The conclusions arrived at were based on facts, established by means of an examination and process which require a knowledge and skill in certain branches of Physics and Ballistics.
QUPH4W	The serial number on Item 1 was restored to read F4N91B.
QUTZA9	The submitted piece of stainless steel bar stock bearing a suspected obliterated serial number (Item 1) was examined and prepared for serial number recovery. Attempts were made to recover the obliterated serial number on the stainless steel bar stock (item 1). The restored serial number was determined to be F4N91B. Images of the recovered serial number will be retained in the Firearm/Toolmarks section of the laboratory.
R24PZR	Item #1 is a stainless steel bar stock. The obliterated serial number is located in the middle of the bar stock. Serial number restoration procedures were performed and it was determined that the serial number was F4N91B.
R64PN4	The Exhibit 1 obliterated serial number was magnetically processed and restored to read "F4N91B".
R68C6H	The serial number was completely restored to read F4N91B.
R9ABFA	The obliterated serial number has been restored as F4N91B.
RA4XWK	The obliterated number on Item 1 was polished and chemically restored to reveal the serial number F4N91B.

TABLE 2

WebCode	Conclusions
RDRYHQ	The obliterated serial number was restored to read F4N91B.
RJ9H4Z	A piece of metal with a sanded or ground area was received, and number restoration was attempted using chemical etching. The following characters were recovered: "F4N91B".
RKHMGN	Visual examination and chemical treatment of the serial number area on the stainless steel bar stock, Item 1A, reveal the following number: F 4 N 9 1 B. Item 1B was submitted as a reference standard for comparison to Item 1A. No analysis was performed on Item 1B.
RLWHCB	Chemical restoration techniques were applied to Item #1 and the original serial number was restored as F4N91B.
RNGFHT	The obliterated serial number of Item 1 was restored to read F4N91B
RP7RB8	After application of the electro-acid etching process, I determined the serial number of the Aluminium plate marked Item 1 to be F4N91B.
RU6NXX	The following items were received in a sealed white cardboard box, labelled in part, "Sample Pack: SNR1". Each item was placed inside a sealed yellow envelope: (a) A piece of stainless steel bar (Item labelled in part, "Item 1"). (b) A piece of aluminium bar (Item labelled in part, "Aluminium Standard"). I made an examination of these exhibits with the following results: The piece of stainless steel bar measured approximately 71 x 25 mm in size and approximately 6.5mm in thickness. An obliterated section of one of the large surfaces was located which measured approximately 25 x 25 mm in size. Obvious toolmarks were present in this area, which were consistent with having been caused by a milling machine (or similar type device), given the even thickness of the damage. The obliterated area was smoothed off using a combination of both coarse and fine emery paper, in order to remove the toolmarks present. The area was then polished with a buffer machine to a high mirror gloss, prior to the application of Fry's reagent. During this application, the following serial number was restored and found to be: F4N91B.
RXP2RG	The stainless steel bar stock (item 1) has an area of obliteration in the center of one side. Using chemical restoration techniques, a serial number was located and fully restored. The visible characters of the number are "F4N91B".
RYVHTT	The serial number on Item 1 bar stock, after restoration, is F4N91B.
RYWKBB	The serial number restored on Item 1 is F4N91B. Item 2 was used as a standard in restoring the serial number on Item 1.
T2ZMNT	The number on the bar was restored and identified.
T4KEXA	3. On 2015-03-10 during the performance of my official duties I received a sealed evidence bag with number PA4002453930 from Case Administration of the Ballistics Section, containing the following exhibit: 3.1 One (1) steel plate with serial number erased, marked by me "47358/15". 3.2 One (1) Aluminium Standard plate with characters "ABCDEFHJKN 1234567890", not marked by me. 4. The intention and scope of this forensic examination comprise the following: 4.1 The Techniques associated with the recovering and restoration process of obliterated alpha-numeric figures on metals. 5. After application of the electromagnetic process, I determined the serial number on the steel plate, mentioned in paragraph 3.1 as F4N91B.

TABLE 2

WebCode	Conclusions
T6X9BP	The serial number on the piece of stainless steel bar stock was restored to read F4N91B.
T7TBFX	A serial number was recovered using physical and chemical restoration techniques. The complete original serial number is: F4N91B.
T7YUG3	The serial number of the bar stock (Exhibit 1) has been obliterated by a milling process. The obliterated area was polished and chemically processed. The serial number "F4N91B" was observed after processing.
T9FCEE	After use of our standard procedures for obliterated serial number restoration we found the following number (Left to Right): F4N91B
TAF2WP	The obliterated serial number of Item #1 was restored using chemical etching techniques and was found to be F4N91B.
TBPWAL	Magnetic processing of the submitted steel bar stock restored the obliterated, original serial number to read "F4N91B".
TFEVNW	The serial number restored by a electromagnetic method on the obliterated portion of stainless steel bar stock (item 1) is F4N91B, in accordance with aluminium standard bar stock.
TFFTVL	On, analysis, I found there were filling mark on the surface of the steel bar. On electrochemical treatmeant on the filled surface region, I found a number 'F4N91B' emerged on the filled surface. hence, I am of the opinion that the number of the steel bar was tempered and the original number was 'F4N91B'. [sic]
TKUC82	Item 1-1 Metal bar measuring approximately 2 ¾ inches by 1 inch by ¼ of an inch: Visual examination of this item revealed the presence of grind marks in the center of one side. This area was etched with acid solutions and the following was restored: F 4 N 9 1 B
TTNJP7	Mechanical and chemical processing was applied and the following characters were developed: F4N91B
TULRXQ	Restoration procedures on exhibit SNR1 (Item 1) revealed the serial number to be: F 4 N 9 1 B
TYC7EK	The stainless steel bar stock (item#1) was physically and chemically processed, and the serial number was fully restored to read F 4 N 9 1 B on April 9, 2015.
U2YXAM	The obliterated serial number on item 1 was recovered to read, "F4N91B".
U48LWL	Exhibits listing: 1 - (1) A piece of stainless steel bar stock with suspected obliterated serial number. Findings: Examination and mechanical processing of Exhibit 1 revealed that the original serial number is F4N91B.
U83YH4	the oblitarated[sic] number was restored.
UCW2CW	Item 1 is a piece of stainless steel bar stock with a suspected obliterated serial number. Using standard serial number restoration techniques the serial number of Item 1 was restored to read F4N91B.

TABLE 2

WebCode	Conclusions
UDABP3	Processed the aluminum piece with Ferric Chloride, Acidic Ferric Chloride, 25% Nitric Acid, 10% Sodium Hydroxide and was able to obtain the aforementioned characters.
UJXNCP	Visual examination and chemical treatment of the serial number area on the bar stock, Item 1A, reveal the following number: F4N91B
UKRTUX	After the application of the electro-acid process, I determined the serial number of the exhibit marked as 75556/15A as F4N91B.
UL3Q8F	RECEIVED UNDER PROPERTY# U3LQ8F WAS ONE PIECE OF BAR STOCK WITH AN OBLITERATED SERIAL NUMBER; SAME NUMBER WAS RESTORED AND DETERMINED TO BE F4N91B.
UMCZXR	The serial number on the piece of metal (Exhibit 01) was mechanically and chemically treated and restored to read F4N91B.
UMHFNR	The serial number was restored to read, "F4N91B."
UN37AB	By magnetic and electrical restoration, the obliterated serial number was restored: F4N91B, which correspond to the digits provided as pattern.
V36D3R	I restored the serial number for item 1 to F 4 N 9 1 B.
V4XQQY	I examined the stainless steel block and saw that the serial number had been obliterated by apparent milling. The serial number was located in the middle of the block. I polished the area containing the serial number. Chemical etching restored the serial number to "F4N91B". I documented the restoration with photographs.
V4YMWN	Using standard restoration techniques, the obliterated serial number on Item 1 was restored to read: "F4N91B".
V72K8G	Upon examination, I found that the surface of the aluminium bar stock has been filed. After performing electrochemical treatment, a set of number F4N91B was restored.
V7P6EU	The original stamped number on the metal piece (item 1) was restored to F 4 N 9 1 B.
V9D794	1. The obliterated area on Exhibit 1 (Metal bar) was visually examined, polished and chemically processed. The characters were restored and appeared as follows: F4N91B.
VDKNG6	After application of the electro-acid etching process, I determined the serial number of the exhibit mentioned in 3.1 as F4N91B.
VEJZ87	Serial number restoration techniques were applied to Item 1 and revealed the following characters: F4N91B.
VGLUWB	The surface was obliterated. By electromagnetic restoration, the obliterated serial number was restored: F4N91B, which corresponds to the digits provided as pattern.
VGLXFD	The obliterated serial number present on the submitted piece of stainless steel bar stock (Item 01-01) was fully restored to read "F4N91B".

TABLE 2

WebCode	Conclusions
VKZMPN	Item #1 is a piece of stainless steel bar stock, serial number obliterated. The obliterated serial number is located on the top side within the groove. Serial number restoration procedures were performed and the serial number was restored to read F4N91B.
VMPVW6	After application of the electro-acid etching process, I determined the serial number of the aluminium plate marked Item 1 to be F4N91B.
VQRH2U	THE SUBMITTED ITEM #1 WAS POLISHED, THEN TREATED WITH MODIFIED FRY'S REAGENT. A FURTHER TREATMENT WAS CONDUCTED WITH NITRIC ACID. THE CHARACTERS F4N91B WERE RESTORED. PHOTOS WERE TAKEN BEFORE, DURING AND AFTER PROCESSING.
VZVRDL	The obliterated area on the piece of stainless steel bar stock in Item 1 was chemically etched and the serial number was determined to be F4N91B.
W3Y4AD	On 2015-03-02 during the performance of my official duties I received a sealed evidence bag with number PA4001642257 from Case Administration of the Ballistics Section, containing the following item: 3.1 One (1) sealed box containing the following exhibits: 3.1.1 One (1) stainless steel plate with the number erased, marked by me "47313/15". 3.1.2 One (1) aluminium plate with reference characters ABCDEFHJKN 1234567890. 4. The intention and scope of this forensic examination comprise of the following: 4.1 Metal plate examination. 4.2 Techniques associated with the recovering and restoration processes of obliterated alpha-numeric figures on metals. 5. After application of the electro magnetic process, I determined the serial number of the steel plate mentioned in paragraph 3.1.1 as F4N91B.
W69XJK	The serial number of Item 1 was chemically restored to read F4N91B. This conclusion was verified by Firearms Examiner.
WBB8L7	Examination of Item 1 revealed an obliterated area on one side. Standard chemical restoration techniques revealed the following characters: "F4N91B".
WBBYR2	After following the right procedure in etching the numbers were recovered by use of electro-acid etching process.
WCK7T9	After application of the electromagnetic etching process, I determined the serial number as F4N91B on the piece of stainless steel bar.
WFPEXP	A laboratory examination was conducted. The results are as follows: 1. Chemical processing was conducted. A serial number was restored to read F4N91B.
WFRAY3	Serial number restoration techniques were applied to the submitted stainless steel bar stock (item 1). The serial number was determined to be F4N91B.
WM86LY	After application of the electromagnetic process, I determined the number of the exhibit mentioned in 3.1 as F4N91B.
WM8NML	Visual examination and chemical treatment of the serial number area on the steel bar stock, Item 1A, reveal the following number: F 4 N 9 1 B. Item 1B was inspected to verify and document contents. No analysis was performed on the item listed.
WPDD3W	Examination and processing of the Q-1 bar stock restored the original obliterated serial number, which was determined to be F4N91B.

TABLE 2

WebCode	Conclusions
WRZ4ZU	After application of the electro magnetic process, I determined the serial number of the steel bar stock as F4N91B.
WZRMD3	After application of the electro-acid etching process, I determined the serial number of the stainless steel plate which I marked 75181/15 "Item 1" mentioned in 1 as F4N91B.
X4T6VV	Number restoration was performed using the Fry technique.
X7ZD9L	The Item 1 stainless steel plate was magnetically processed, resulting in a full recovery of the serial number. The recovered serial number reads as follows: F4N91B.
X8NYPQ	The obliterated area on Exhibit 1 (piece of stainless steel) was visually examined and processed using magnetic particle reagent. The serial number was restored to read F4N91B.
X9KCFP	Examination and restoration of the obliterated area on Item 1 (one piece of stainless steel bar stock) revealed the following characters interpreted as "F4N91B".
XGULZB	Item #1 obliterated serial number was restored to read F4N91B.
XKVU4L	Examination of Item 1 revealed the presence of an obliterated area. Restoration of the obliterated area revealed the following inscription: F4N91B.
XKWZLL	The restored serial number was: F4N91B
XP738B	3. On 2015-03-03 during the performance of my official duties, I received a sealed evidence bag with number PA4001642256 from Case administration of the Ballistics Section, containing the following: 3.1 One (1) piece of stainless steel bar stock with serial number erased marked by me "47319/15 A". 3.2 One (1) piece of aluminium bar stock marked "Aluminium Standard". 4. The intention and scope of this forensic examination comprise of the following: 4.1 Techniques associated with the recovering and restoration process of obliterated alpha-numeric figures on metals. 5. After application of the electro-magnetic process, I found F4N91B on the piece of stainless steel bar stock mentioned in paragraph 3.1.
XQZQML	Chemical etching and polishing recovered the following obliterated characters from the item 1 bar: F 4 N 9 1 B
XVHX4	3. On 2015-03-05 during the performance of my official duties, I received a sealed evidence bag with number PA4001642048 from Case Administration of the Ballistics Section containing the following exhibits: 3.1 One (1) piece of stainless steel bar with obliterated serial number marked by me "47404/15 1". 3.2 One (1) piece of aluminum bar with number 1234567890 and alphabetical letters ABCDEFHJKN. 4. The intention and scope of this examination comprise of the following: 4.1 Techniques associated with the recovering and restoration process of obliterated alpha numerical figures on metals. 5. After the application of the electro-magnetic, I determined the serial number F4N91B on the obliterated area of the stainless steel bar mentioned in paragraph 3.1
XWQ3PA	The piece of stainless steel is obliterated. By magnetic restoration we found a sequence that fits with the pattern on the aluminium bar.

TABLE 2

WebCode	Conclusions
Y6M4XZ	Serial number restoration techniques were applied to item 1 (bar stock) revealed the following characters: F4N91B.
Y7VNQM	The obliterated serial number area was polished and chemically processed to restore the obliterated number. The serial number was successfully restored to read: F4N91B.
Y9HXTG	Visual examination and chemical treatment of the serial number area on the non-ferrous bar stock (Item 1) revealed the serial number to be F4N91B.
YABT8C	The serial number F4N91B was restored.
YAQYM2	3. On 2015-03-04 during the performance of my official duties I received a sealed evidence bag with number PA4002453757 from Case Administration of the Ballistics Section, containing the following exhibits: 3.1 One (1) metal plate with obliteration number, marked by me "47352/15". 4. The intention and scope of this forensic examination comprise of the following: 4. Techniques associated with the recovering and restoration process of obliterated alpha-numeric figures on metals. 5. After application of the electro-magnetic etching process, I determined the number as F4N91B on the metal plate mentioned in paragraph 3.1.
YE8CF3	Standard chemical restoration was applied to Item 1. The following characters were restored: F4N91B.
YFKY2X	After application of the electromagnetic etching process, I determined the serial number of the stainless steel bar as F4N91B.
YGZ7FR	The serial number was chemically restored to F4N91B.
YHNRXG	Item 1 is a 2 ¾ inch long piece of ¼ inch thick steel bar stock measuring 1 inch in width, containing on obliterated serial number. The obliterated serial number on Item 1 was restored to read F4N91B. The results of this examination relate only to the item tested and listed in this report.
YJHLMY	Serial number restoration techniques applied to Item 1 (metal bar) revealed the following characters: F 4 N 9 1 B.
YPQVRL	The examination performed on the mill obliterated number stamp on the piece of aluminum alloy bar stock sent to us as the "Item 1" allowed us to get the following result: F4N91B.
YRBPNM	After application of the chemical process on the stainless steel bar received, I determined the serial number to be: F4N91B.
YUMDCT	he[sic] serial number F 4 N 9 1 B was recovered on the piece of bar stock.
YVB2H2	After application of the electro-acid etching process, I determined the serial number as F4N91B.
YWUTN6	Using standard laboratory restoration techniques and[sic] attempt was made to restore the serial number to Item 1 with the following results: Serial number: F 4 N 9 1 B was restored to Item 1.

TABLE 2

WebCode	Conclusions
YZHRK8	Through the serial number restoration process, the following was determined: 1. The serial number of stainless steel bar stock, described in Item 1 was restored and correspond to: F4N91B.
Z6WZMH	Visual examination and chemical treatment of the serial number area on the steel plate, Item 1, reveal the following number: F4N91B.
Z73AD9	Chemical treatment was successful in chemically restoring a serial number on the bar. The serial number on the bar was restored to read F 4 N 9 1 B.
Z9GUNP	In my opinion the restored characters were "F4N91B".
ZKPGBA	Using standard restoration techniques, the obliterated serial number on Item 1 was restored to read: "F4N91B".
ZPLPBC	The obliterated number on item 1 was polished and chemically restored to reveal the serial number "F4N91B".
ZTHHXE	The submitted stainless steel bar stock (item 1) was observed to have an area of obliteration. The obliterated area was processed using standard serial number restoration techniques. The serial number was restored to read F4N91B.
ZUFHTQ	Restoration of the obliterated serial number was performed on the surface of the questioned stainless steel bar stock marked "Item 1". The restored serial number was found to have six alpha-numeric characters being - "F4N91B"
ZV9Q2N	The serial number F4N91B was recovered using the Magneto-optical sensor technology, method not destructive and not invasive.
ZVQKZD	The original number of the stainless steel bar (Item 1) has been grinded. After analysis, the original number was restored and read as F4N91B.
ZWEDET	After application of the electro-acid etching process, I determined the serial number of the exhibit mentioned in 3.1 as F4N91B.
ZXVDLP	The serial number was chemically processed and restored to read "F4N91B".

Sample Preparation

TABLE 3

WebCode	Sample Preparation
232G4B	THE SURFACE WAS TREATED ACETONE, SANDED DOWN WITH 800 GRIT SANDPAPER AND POLISHED WITH STEEL WOOL
24EUMD	The surface was cleaned using a delicate task wipe moistened with acetone and polished, prior to attempt to recover the serial number.
269NDV	sanding with fine sand paper and steel wool. Wiped area with clean cloth.
26R6GG	Item 1 was microscopically and visually examined to determine location of the obliterated serial number and if any portion of the obliterated serial number was visible.
29W2F8	Polishing with rotary (e.g. Dremel) tool.
2CBPPH	1. Photography 2. Emery cloth used to sand suspected area to obtain mirror finish.
2D6W8E	sanding
2DQX3D	Light sanding using 150 grit sandpaper was used before applying Magnaflux.
2EUWTC	Sanding
2EZ64K	Check for magnetic properties - non magnetic. Polish surface w/ abrasive wheel.
2MTFEF	Polishing with Dremel wheel, smooth polish with steel wool after dremel polish
2MVHCD	Polishing
2QD8MW	The obliterated area of the steel bar stock was sanded with 240 grit paper.
2WY9HF	It was examined under microscope and with the use of black magnetic ink, during which the probable number wasn't deciphered.
2XFRYL	Various grit grinding wheels, felt wheel with polishing compound, cleaning with acetone.
2YN2PX	Method 2 version one - casting. Method 1 version one - polishing.
2YYM2Y	The area to be etched was polished. Cleaned it with solvent, spray thin layer of contrast spray. Leave it to dry for few minutes.
2ZWBGU	Method 1/Version 1 = Prepare surface. Method 2/Version 1 = Cast surface. Method 7/Version 1 = Posi-test material. Method 9/Version 1 = Frys resto[sic].
33GYHG	Tested chemicals
34937G	None
3BT3NF	[No Sample Preparation Reported.]
3HEYJH	Polishing
3KMM7F	Serial number area was lightly sanded with fine grained sand paper prior to chemical applications.

TABLE 3

WebCode	Sample Preparation
3MBQPT	Grinding/Polishing with a Dremel tool, sand paper and water.
3RH9W9	n/a
3UURCX	No preparation prior to restoration was performed.
3WBGAF	Polished
3WCLXH	Visualization or[sic] remaining characters/partial characters with oblique lighting. Polishing of obliterated area with Dremel
3XRBCB	Photograph only
424AQU	The milled surface was first prepared with application of a Dremel rotary grinding tool with sanding disc attachment. This was followed by application of 1200 grade wet and dry sandpaper to provide a smooth polished surface.
4867B9	None
48UK3D	Polishing using 400 grit sand paper to near-mirror finish.
4C8V8N	Polishing
4DUL4M	Polishing the surface with sand paper before applying the acid.
4FP3MB	Sanding
4GZULJ	The serial number area was smoothed with 320 grit emery paper backed by a flat file to remove many, but not all, of the milling cutter marks. A small unmachined area near the serial number was similarly smoothed with 320 grit emery paper so it could be used as a test site to verify the reactivity of the reagent prior to its application to the serial number area.
4KJYAG	Polished metal with rotary tool.
4M7Q6J	Polishing with: steel wool, sand paper, and dremel. Chemical etching with Turner's Reagent and Fry's Reagent.
4PNY4J	Sanded with emery paper (180, 280 & 320 grit) for ~ 5 minutes, then cleaned with acetone & polished with a soft cloth.
4PPWEE	None
4TBZJK	Because the milling marks appeared relatively shallow, no polishing was done prior to magna flux application.
4TTJEX	Examined item documenting obliteration type, any observed characters, then measured and photographed the item surface. Prior to the restoration attempt, the obliterated surface area was cleaned with methanol.
4WAQUK	Polishing with sandpaper of various grades (roughness). Cleaning the surface with ethanol.
4XJV89	The examined surface was cleaned and burnished by sandpaper.
67AV7X	Visual exam with stereo microscope. Buffing process with electric rotary tool.

TABLE 3

WebCode	Sample Preparation
67RP32	Polishing
6CGBM9	Clear the surface with the acetone
6CZ4RD	Rubberized emery wheel/Dremel tool & Steel wool.
6GCLXD	Sanding
6GW3V	Information: Item 1 was analyzed and photographed prior to restoration attempts. Description: Item 1 is a flat piece of stainless steel bar stock with suspected obliterated serial number located approximately in the center. There is no other damage of note. No trace evidence was observed. Dimensions of Item 1 ~ 2 3/4" length x ~ 1 " width, thickness is ~ 1/4". Description of damaged area: The damaged area is a 1" x 1" square and it appears uniformly ground (circular machine marks). Microscopic Examination: No characters visible.
6H9PHV	First using a dremel tool to grind the steel bar smooth.
6PMGMZ	Polished
6QJQZP	Determining if the piece was magnetic or non magnetic. Light sanding on the area of obliteration with sand paper and steel wool.
6W2DH9	Light sanding of the questioned surface area on Item No. 1 that contained circular grinding marks until most of the marks were removed using 400 and 600 grade sand paper.
6XYLPR	Exhibits polished to mirror shine.
7CWWWB	Dremel tool with polishing wheel.
7FAU4X	The stainless steel bar was already polished so there was no need for preparation of the sample.
7JX78A	1- The surface is observed in the estero-microscopio[sic] to detect traces of the method used to delete or alters the surface. 2- The area with solvent is cleaned and examined the imprint of the tool, to determine possible tool used. 3- make a process of polishing the area to analyze.
7MFA7T	Sample was visually inspected under stereoscope, in attempt to observe characters. Sample was polished in area of obliteration and an attempt to observe characters done under stereoscope.
7N7P4G	Sanding using a Dremel sanding drum, sand paper, and steel wool in order.
7NRZ6B	The sample was photographed in its original state and placed on a well lit clean paper covered surface. As well as inspection with stereo-microscope.
7V6AC4	A magnet was used to determine if the bar stock was magnetic. The area of obliteration was examined under a stereoscope and photographed prior to recovery attempts.
82EJLL	The area was lightly polished.
8329HJ	Cleaning the obliterated area or surface by scrubbing off with a santpaper[sic].

TABLE 3

WebCode	Sample Preparation
86VJPK	The surface of item 1 was prepared using a dremel tool to sand and polish the surface to a smooth finish.
8K6YG3	THE OBLITERATED SURFACE OF ITEM 1 BARSTOCK WAS POLISHED SMOOTH USING A POLISHING WHEEL ON A DREMEL TOOL
8RLJJE	The sample was polished using 180 and 400 grit sandpaper with water.
8V7CTV	I used the sand paper to make the steel bar shine and smooth. Put a steel bar on the magnetic yoke and sprayed it with white contrast paint and black ink.
8ZXLTL	None
9AZ9C7	The obliterated area was polished with a Dremel tool until the area was smooth.
9BQJ6K	The obliterated area was sandpapered and polished till mirror smooth before applying the electro-acid etching process. "Green mamba" acid and an electric current (with the positive pole (anode) attached to the steel bar and negative pole (catode)[sic] attached to copper rod containing cotton with acid) were used to recover the serial number.
9J9VBX	N/A
9KMZAW	Dremel with a tip approximating fine grit sand paper
9QKYC6	For the chemical etching it was grinded and polished.
9YJHYU	Polishing
A68W8E	Dremel Tool Polishing
A6GHKG	1. Established the type of metal to determine whether the electro[sic] magnetic, the electro acid or both methods need to be applied to recover the number on the exhibit. 2. Removed all the scratches and other marks by sanding it with fine emery paper attached. 3. Then followed the process by polishing the surface of the metal to a mirror like finish. 4. After polishing the surface it was degreased and cleaned it with acetone.
A98VBY	Polish with dremel tool.
AAD82N	The surface was cleaned of the Item 1 with solvent cleaner. The white contrast sprayed over the obliterated area and allowed to dry. The black magnetic particles over area and while the metal was magnetically allowing the particles to settle to recover the obliterated area.
AAVD76	The obliterated area on item 1 was microscopically examined.
ADBP22	Dremel Polishing
AEFWW3	The area of obliteration was sanded with a Dremel tool.
AKCXQ2	Progressive grit sanding and polishing of surface.
AKDY8T	On the area where the serial number is obliterated the surface area must be sand papered with an electronic hand held file until it is mirror smooth.
AML6TU	Polish; Chemical Etching.

TABLE 3

WebCode	Sample Preparation
ANHGVP	None
APERVX	No prior treatment.
AQL4KM	None
ATBDL2	Sample was lightly sanded with sandpaper.
AWN8AL	Polishing and chemical etching.
AYEK24	Sanded area of obliteration with dremel tool
AZQDM7	preliminary (initial) polishing up with sand paper 250. final polishing with sand paper 500
B3UCPC	The surface was smoothed using 400 grit sandpaper.
B46283	A Dremel Tool was used to sand and polish the sample.
B7TQD2	The obliterated area on the piece of stainless steel bar stock was polished using a Dremel rotary tool.
B9G7H3	Sanding
BDVJMW	Polish
BGT8XC	Davis' Reagent (Modified): 1. 5g of Cupric Chloride, 2. 50ml of Hydrochloride Acid, 3. 50ml of Distilled Water
BH8KQF	Light mechanical grinding (Dremel) and polishing wheel to smooth.
BJV67J	Mechanical polishing (rotary tool).
BRQQAG	Polished the sample to a smooth surface finish with a Dremel wheel.
BUFGKG	1. The sample was sanded with sandpaper first. 2. After the sample was sanded, it was polished with a polishing media, until it was smooth.
BW6WYJ	Polished out the toolmarks with a grinding attachment on a Dremel rotary tool.
BXYHQP	polishing using dremel
BXZ76U	1. White contrast paint sprayed on the exhibit. 2. Then I sprayed magnetic particles onto the exhibit.
C2A7EQ	I firstly cleaned the surface of the item 1 with solvent cleaner. I then spray white contrast sprayed over the obliterated area and allowed to dry for magnetic inspection. I then sprayed black magnetic particles over area in question then sprayed it on allowing the particles to settle.
C34R6W	Polished with Dremel
C3RTD9	None
CCUDBU	None

TABLE 3

WebCode	Sample Preparation
CHPTFA	Viewed Item 1 through stereoscope and photography. Magnetic particle restoration prior to polishing
CHZVYM	None
CRNXXA	Polishing
CUD846	Polishing
D27W47	None
D3JDEX	The Q-1 stainless steel bar is minimally magnetic. This was confirmed by placing the bar on edge and placing a magnet near the face where the bar was observed to rock toward the magnet. The obliterated area of Q-1 was polished with a wet stone and wet sandpaper (both with WD-40), Dremel Tool with felt wheel, and Harbor Freight Tools Grey Polishing Compound, Item 96769. Some multi-pass circular milling marks, in the form of short arcs, were still visible across the surface. (No characters were visible).
D6C3ZE	The sample surface was carefully sanded and polished to remove any machining marks and to ensure that the surface was completely flat and even.
D8E3XQ	Wiped the aluminium bar stock with roller towel to rid of excess dirt. Polish the obliterated area to a mirror shine.
DB2QMX	The surface was mechanically polished with a Dremel-type tool.
DHDXVL	Fine grid sandpaper on Electric Dremil[sic] Tool was used to smooth the surface. Surface was polished with buffing paste.
DK8G7Z	Item 1 was examined visually and microscopically with a stereo microscope. Material was tested with a magnet and was found to be weakly magnetic. Item 1 was then sanded and polished using sandpaper.
DLZYD9	Sand and Polish (320 and 600 grit)
DMEQJQ	None.
DQWA4L	The area of the obliteration was polished with a Dremel tool to even out the milling marks making a smooth surface for the acid to react with.
DXCV9J	Fin[sic] grit sand paper and steel wool
DXEHPW	Light polish
DXPCF6	Polishing with a dremel tool.
E29AH7	No preparation of the obliterated surface was performed.
E2NA2G	Electro-acid etching process was used, and the following steps were followed. 1. Prepare electro acid etching apparatus. 2. Clean the obliterated area of the steel bar stock with sanding paper and polish it. 3. Attached positive pole of electric etching apparatus to the steel bar stock. 4. Wrap cotton wool around negative pole. 5. Rub the saturated cotton repeatedly until the number appeared.

TABLE 3

WebCode	Sample Preparation
E68ZU8	Polishing with a dremel tool.
EBB4LQ	Polishing with a dremmel[sic] tool.
EBT7CZ	Sanding.
ECPU33	sanding
EG4YPJ	polishing with Dremel tool
ELTTCJ	The area that had to be etched was polished using a Dremel Tool, until it was shiny and smooth.
ER3UME	Polishing
EU7RWM	Polishing obliterated area with Dremel tool.
EWWRER	Polishing/smoothing with Dremel tool and Cratex wheel, application of Acidic Ferric Chloride.
EZDA32	I polished item 1 with a Cratex wheel.
F3XEE7	Sanding & polishing to a mirror finish.
FAV99X	The surface of the stainless steel bar was cleaned with acetone.
FAVBX3	Visual inspection and was then photographed prior to the recovery.
FEBPWU	Polish with dremel tool
FGHRW8	Polishing with a Dremmel[sic] tool.
FHNGVA	AFTER TAKING THE PICTURES OF BOTH STAINLESS STEEL BAR AND ALUMINUM BAR, THE STAINLESS STEEL BAR WAS SLIGHTLY[sic] POLISH TO THE MIRROR SHINE.
FJ432J	VEU method 2 version 1 - cast taken of ground area. VEU method 1 version 1 - surface polished with wet and dry carborundum paper.
FLDA4C	Polishing with a Dremel Tool.
FLTYJ6	Polishing
FRD6QC	The sample (Item 1) was first sanded lightly with a dremel tool and then polished to a mirror-like finish. This was done to remove most of the markings created on the surface when the serial number was obliterated.
FW7C8Z	The surface was cleaned using a delicate task wipe moistened with acetone and polished prior to attempt to recover the serial number.
FYDKH6	Take pictures of sample. Manual polishing. Corrosive chemical solution test (back of sample).
FYF7F7	Light grinding via Dremel tool and fine-grit emery paper

TABLE 3

WebCode	Sample Preparation
FZMPVT	THE OBLITERATED SURFACE OF ITEM 1 BARSTOCK WAS POLISHED SMOOTH USING A POLISHING WHEEL ON A DREMEL TOOL.
FZT8AD	Smoothed surface with Dremel tool (fine sand paper).
G63DFQ	VISUAL EXAMINATION POLISHED WITH DREMEL TO MIRROR-LIKE FINISH
G9Y2UC	Polish
GAVCUL	Smoothing with a Dremmel[sic].
GEQDMM	Initially none, due to depth of obliteration. After initial etching attempts, a dremel was used.
GJ2RK8	Polishing
GJDA4X	I inspected the obliterated area first and then I prepared the surface using the polish method with fine grit sand paper (#220) and then I cleaned the surface with Acetone.
GKFLFU	The suspect area of the metal bar stock (1) was polished with a Dremel(R) tool.
GKXU6N	None
GL2QD7	First the sample was observed through the microscope then it was polished.
GL8EXB	Bar stock surface was smoothed with dremel (sand/polish).
GPP7ZK	Item #1 obliterated area was polished with a "Dremel" type tool.
GQXBLV	None
GUWN7Z	SANDING
GV7TH4	Magnaflux a non destructive technique utilised on ferrous materials.
H2HUPT	THE QUESTIONED SURFACE OF THE BAR STOCK WAS POLISHED SMOOTH USING A POLISHING WHEEL ON A DREMEL TOOL.
H4N7P3	Applied a magnetic. Polished surface area using high speed dremel and Cratex rubberized abrasive attachment.
HCEZG7	Polish with dremel and sand paper
HKTW8X	Dremel w/ rough grit head.
HMXCU4	Polishing
HTJV6B	Polishing.
HUFPT3	Manual polish, Acidic Ferric chloride[sic].
HUVRBF	VEU Method 2 Version 1 - cast of ground area, VEU Method 1 Version 1 - surface polished wet and dry.
J4BHBR	Polish with dremel tool

TABLE 3

WebCode	Sample Preparation
J4ZW3W	The affected area was polished using a polishing attachment[sic] on a dremel tool
JA682X	Polishing and HNO ₃ (10%)
JD6782	The sample was prepared using fine sandpaper and a fine sanding wheel on a Dremel tool.
JD9YCJ	Cleaned suspected sticky residue from obliterated area with isopropanol. Tested magnetic property with permanent magnet. No attraction observed. Research after restoration revealed that some stainless steels are magnetic while others are not.
JJC363	Polishing
JTX7AG	Dremel tool - grinding polish, 220 Grit paper - polishing surface.
K349CT	None
K8WEK4	Polishing with sandpaper of various grades (roughness). Cleaning the surface with ethanol.
K8X6ZY	Sanding and Polishing
K98CZ7	The steel was polished lightly before attempting to restore the number.
K9B8T7	Polishing of the sample surface with emery paper and then a buffing wheel with chromium oxide paste. The surface was then cleaned with an alcohol wipe.
KD283E	Polished
KEEQX6	Photographed Surface was polished
KHTKE3	Polishing
KKKEKJ	None.
KMMKTX	No surface preparation was necessary prior to restoration.
KN2Z9K	Polishing to a mirror finish
KRYH9X	none
KTB6XY	Visual, Microscopic, and Magnetic.
KTWK8A	Polishing
KWC9NZ	First step : Use of abrasive paper (rough). Second step : Use of abrasive paper (fine)
KY2JGE	I polished the area of obliteration using a Dremel-type and a sanding/polishing disc. I polished the area until it was mirror smooth removing fine scratching.
L2N294	Surface sanding with a Dremel tool and sandpaper.
L3YBE3	Buffing
LBP3CV	Sandpaper with water

TABLE 3

WebCode	Sample Preparation
LECDYF	The milled area on the metal bar stock was polished with a rotary tool. Removing approx. 0.003" of material to leave a smooth, uniform surface.
LHTVVQ	400 and 1500 grit sandpaper was used to polish the area of obliteration
LTVQ2U	Light sanding by hand and polishing using a Dremel tool.
LVGZ23	Polish
M238BU	Physical and microscopic observation of the surface in Item 1 research; Mirror polishing surface effect of item 1.
M6HYZ2	Visual and microscopic examination. The surface was cleaned with acetone and polished with fine sandpaper before serial number recovery process.
M7W7FG	3/31/2015 - OPENED PACKAGE - EXAMINED BLOCK. CONDITIONED OBLITERATED AREA WITH ROTARY TOOL TO MAKE SMOOTH.
M8Q8QR	Polishing the surface with sand paper.
MAQZJK	I used sand paper (#220) to prepare the sample and also realized an initial inspection and cleaned the surface with a moistened delicate task with acetone and water (Deionized water).
MCZQMZ	Obliterated area was polished with a Dremel Tool and grinding attachment.
MGDY27	The sample was prepared by polishing the surface with a Dremel tool until smooth and cleaning the area with acetone.
MMW7GP	The surface has been smoothed softly with sand paper (P240).
MRCMQU	Sanding
MRVK3U	Use of a Dremel and hand sanding with sand paper to smooth surface.
MTKVXT	1 - Visual and microscopic examination (using stereomicroscope). 2- sanding and polishing. 3 - Cleaned the surface with acetone.
MW7KH7	I prepared the surface where number has been removed. The preparation includes filing the surface using a filling machine with a fine sanding paper.
MZHPQK	None
N78BPY	1.) Dremel (Cratex wheel) for smoothing surface. 2.) Sandpaper for smoothing and polishing surface. 3.) Steel wool for final polishing of surface.
N7PFUQ	The surface was cleaned with delicate task wipes and polished with soft sand paper prior to recover the serial number.
NAQG XU	sanding
NEZTWF	Polishing and visual inspection.
NKNH9D	The metal area on the plate was polished to make the surface more smooth.

TABLE 3

WebCode	Sample Preparation
NNL2DW	Visible examination to obtain partial characters.
NR7TME	1. Inspect the area where the serial number is located for coating and as to determine the method to be used for etching. 2. Record down condition of the exhibit as received and take photos. 3. Clean the area to be etched of any coating with solvent. 4. Polish the area to be etched and clean it again before etching.
NW3EDG	Sand paper into mirror shine, spray white contrast paint, magnetize with yoke and spray oil suspended iron filings.
NW3FF3	Sandind[sic] of the obliterated area of the exhibit to a smooth finish. Spraying white backing spray on obliterated area of exhibit.
NWPUYD	None
P7JJZ8	White contrast paint was applied thereafter a solution of oil based electromagnetic particles was applied over the obliterated area of the exhibit.
PA77PD	The sample was polished prior to chemical reagents being used.
PEZF6Y	Polishing
PH3EFR	Polishing with Dremel tool
PK6CNY	Polishing
PNP4Z2	Using a dremel, Item 1 was polished to a mirror-like finish.
PQ86GN	No method were used.
PV6JCQ	Polishing
PZEKR3	A dremel was used with coarse and fine sandpaper to smoothen the surface. This method of grinding away the obliteration marks enables a mirror like surface for an attempt to restore the obliterated alpha-numeric figures.
PZGHRQ	Polishing with sandpaper
Q2BD7L	none
Q93X2L	Visual examination using a magnifying glass.
QF2H73	The area on which the serial number has been obliterated was sandpapered and polished until it is mirror smooth. A sanding disc attached to the Dremmel[sic] machine was used for sanding the surface. A polishing tool attached to the Dremmel[sic] machine and dipped in a polishing paste was used to polish the surface to be etched.
QNXGHA	Clean surface of steel bar with acetone. Spray obliterated surface with white background spray (Ardrox 8903W). Place steel bar on Gammatec Yoke electrical currant[sic] poles. Apply Supramor (black magnetic particle inspection fluid) to the white sprayed surface. Apply electric currant[sic] to steel bar. Photograph the visible number.
QUPH4W	Polishing

TABLE 3

WebCode	Sample Preparation
QUTZA9	Dremel Tool polish - #44 disc
R24PZR	Polishing method
R64PN4	None initially.
R68C6H	polishing
R9ABFA	The sample was emiered using an emery cloth.
RA4XWK	Very light cleaning with acetone.
RDRYHQ	None
RJ9H4Z	Polishing metal to remove grind marks, using 80 - 1200 grade sandpaper.
RKHMGN	Sanding and polishing with a Dremel.
RLWHCB	The obliterated area was lightly buffed with a dremmel[sic].
RNGFHT	Polishing the milled area : 1/ with #120 grid sandpaper. 2/ with #600 grid sandpaper with H2O
RP7RB8	The sample (Aluminium plate) was prepared by polishing it to a mirror shine using Dremel tool/Jeweller's[sic] Drill and Dremel Disc.
RU6NXX	The stainless steel bar was hand smoothed off with a combination of both coarse and fine emery paper to remove the toolmarks present. This area was then polished with a buffer machine to a high mirror gloss.
RXP2RG	Polishing
RYVHTT	Physical sanding and polishing wheel attached to rotary tool.
RYWKBB	Polished with a Dremel tool using an abrasive wheel.
T2ZMNT	The sample bar was cleaned with sand paper.
T4KEXA	The metal plate was cleaned with a solvent (acetone), on the tampered area. The tampered area was then lightly sand down to smoothen the surface.
T6X9BP	Filed defaced area with a light file - to level area. Polished surface with emery and crocus cloth. Cleaned with acetone.
T7TBFX	polish
T7YUG3	Polishing
T9FCEE	1. Determination kind of Metal. 2. Fine Polishing.
TAF2WP	Light polishing using a Dremel tool, then the area was cleaned/degreased with acetone.
TBPWAL	Visual

TABLE 3

WebCode	Sample Preparation
TFEVNW	Sand papered and polished the sample until it was mirror smooth. Mechanical tool was used to prepare and polish the surface. Cleaning was done with acetone.
TFFTVL	Examination and Restoration of Erased Identification Markings.
TKUC82	None
TTNJP7	Fine grinding - dremel
TULRXQ	Polish with emery wheel
TYC7EK	Sanding
U2YXAM	The obliterated area was polished
U48LWL	sanding and polishing with Dremel Tool
U83YH4	The sanding process was used to polish the surface (mirror image) were[sic] obliterated numbers was. The electric circuit was connected to the metal plate to conduct electrolytes. The rubbing around of the surface of the plate using cotton wool, which was deep into the acid (green mamba) was done.
UCW2CW	Buffing
UDABP3	Prepared the surface with Steel Wool
UJXNCP	Sanding and polishing
UKRTUX	I have done the preparation where the number has been removed, the preparation was the filing the metal using the filing machine with a fine sand paper.
UL3Q8F	POLISHING
UMCZXR	Polishing with a Dremmel[sic] tool.
UMHFNR	Filing, Polishing
UN37AB	The area was photographed then polished with sand paper N° 400 y[sic] 600. Lifted with graphite. Cleaned with acetone.
V36D3R	Sanding
V4XQQY	Polishing with the polishing compound.
V4YMWN	Polished with Dremel polishing wheel.
V72K8G	none
V7P6EU	800 grit waterproof sanding paper with water used to smooth the ground surface.
V9D794	Polish

TABLE 3

WebCode	Sample Preparation
VDKNG6	Firstly I cleaned it with acetone (alcohol or petrol) could still be used to remove all oil, grease, dirt and paint. Then I polished it using emery paper to a mirror like finish, I also filed it using a finer grade with a left to right movement or the up and down movements to a mirror like finish.
VEJZ87	Polished eradicated area to a mirror like finish using an electronic Dremel tool.
VGLUWB	Polished with sand paper Cleaned with acetone
VGLXFD	The obliterated area was first polished to a mirror-like finish.
VKZMPN	sanding/polishing
VMPVW6	The sample was prepared by polishing it to a mirror shine using Dremel tool/Jeweller's[sic] Drill and Dremel Disc.
VQRH2U	ITEM 1 WAS POLISHED FIRST
VZVRDL	A Dremel tool with a polishing wheel was used to polish the obliterated area.
W3Y4AD	There was no need to sand and polish the plate, but it was necessary to clean the plate with acetone before the numbers could be restored with the electro magnetic process.
W69XJK	Polishing with a Dremel
WBB8L7	Magnaflux was used first. A dremel polishing tool was used before an acidic method was used.
WBBYR2	I cleaned the stainless bar stock using sand paper to make the area smooth and shiny, The area must be mirror smooth and during the cleaning process dremel disc and the dremel were used.
WCK7T9	Electromagnetic Process
WFPEXP	Polishing
WFRAY3	Polishing/sanding with a Dremel brand rotary tool.
WM86LY	Used a sanding disc to smooth the surface of exhibit.
WM8NML	Light sanding with distilled water
WPDD3W	The area was polished.
WRZ4ZU	1. Marked the sample with lab number: 75254/15. 2. Establish type of metal- for either electro magnetic process/ electro acid process or both if applicable. 3. Sanding the disputed area of sample till very smooth. 4. Spray sample with white background lacquer (Cardrox 8901W). 5. Put sample on magnetic electro masjine[sic] and magnetize. 6. Spray Black magnetic ink on. 7. Retrieve obliterated serial number. 8. Clean sample with methanol.

TABLE 3

WebCode	Sample Preparation
WZRMD3	the obliterated area was sandpapered and polished till mirror smooth, before applying the electro-acid etching process "green mamba" acid and electric current to the stainless steel plate "Item 1". The positive pole (anode) attached to the stainless steel plate and negative pole (cathode) attached to copper rod containing cotton soaked in acid "green mamba", were used to recover serial number on the stainless steel plate "Item 1". [sic]
X4T6VV	We first ground and polished the aluminium bar stock to obtain a smooth surface
X7ZD9L	No surface preparation was done.
X8NYPQ	The obliterated area was wiped with a Kim wipe in order to remove metal fragments.
X9KCFP	Polish with Dremel tool
XGULZB	None Item was smooth when received
XKVU4L	Polish
XKWZLL	After a visual inspection, the area where the serial number had been removed was determined to be non-magnetic. The area was subjected to sanding and/or polishing with a sanding and/or polishing drum on an electric Dremel[sic] tool and hand sanding/polishing with varying grades of wet/dry sandpaper.
XP738B	1. I used a cleaning solvent to clean the obliterated area on the stainless steel bar stock.
XQZQML	Polished gently with soft steel wool pad.
XVHX4	1. Inspect the area where the serial number is located for coating and as to determine the method to be used for etching. 2. Record down condition of the exhibit as received and take photos. 3. Clean the area to be etched of any coating with solvent. 4. Polish the area to be etched and clean it again before etching.
XWQ3PA	The area was photographed then lifted with graphite. Polished with sand paper N°400 y[sic] 600. Cleaned with acetone.
Y6M4XZ	None
Y7VNQM	Polishing with rubberized wheel
Y9HXTG	Dremel tool with polishing wheel.
YABT8C	Polish
YAQYM2	The metal plate was polished to make smooth the surface.
YE8CF3	Acid etching only, see below.[Table 4 - Recovery Methods]
YFKY2X	The sample is already polished.
YGZ7FR	Visual observation Buffing / Polishing
YHNRXG	Visual inspection followed by polishing with a dremel tool for an even surface.
YJHLMY	I polished the location of the serial number.

TABLE 3

WebCode	Sample Preparation
YPQVRL	Before any further operation, picture of the sample is taken. Examination under a binocular microscope. Measuring the depth of the milling (about 4/10 mm). Cleaning and degreasing with acetone. Light polishing with abrasive paper.
YRBPNM	The stainless steel bar sample was sanded down to remove the gross scratches caused by the obliteration process then polished to a mirror-like finish.
YUMDCT	[No Sample Preparation Reported.]
YVB2H2	Electro-acid etching process.
YWUTN6	None
YZHRK8	The surface was observed to verify if some character were seen, and then the surface was polished.
Z6WZMH	None
Z73AD9	Polished with an electrical rotary tool then cleaned with acetone.
Z9GUNP	removal of heavier grinding marks with a demel tol.[sic] Then polished smooth with wet/dry sandpaper (grit 220, 400, 800, 1200).
ZKPGBA	Manual sanding and polishing with 220, 400, and 600 grit papers.
ZPLPBC	No additional methods used.
ZTHHXE	Sanding and polishing
ZUFHTQ	None
ZV9Q2N	Observation, surface cleaning and surface contact magnetize.
ZVQKZD	The surface of grinded area was clean with cotton wool soaked with acetone prior to analysis.
ZWEDET	I prepared the surface where the number has been obliterated. The preparation includes filing the surface using a filing machine with a fine sanding paper.
ZXVDLP	Visual

Recovery Methods

TABLE 4

WebCode	Recovery Methods
232G4B	CHEMICAL
24EUMD	The Acid Etch Method was used in which the acids applied were: Ferric Chloride (4 minutes) and Acidic Ferric Chloride (2 minutes).
269NDV	10% Sodium Hydroxide for 2 min; 25% Nitric Acid for 2 min; Acid Ferric Chloride for 2 min; Ferric Chloride for 2 min
26R6GG	Diluted Fry's Reagent was applied to Item 1 in the area that a portion of the obliterated serial number was visible. The application was applied and wiped away in short intervals. Between each interval, Item 1 was examined visually and microscopically to observe if any additional numbers/letters could be seen. The entire process of acid application lasted approximately 30 minutes.
29W2F8	Fry's, 5 min.; Turner's, 15 min.
2CBPPH	Fry's Reagent & Nitric Acid. 1. Nitric Acid - 1 minute of swabbing or rubbing. 2. Fry's Reagent - 1 minute of swabbing or rubbing. Numbers and letters start to appear after about 3 minutes alternating between Nitric Acid and Fry's Reagent.
2D6W8E	Fry's reagent 30 seconds, 25% Nitric Acid 10 seconds per application
2DQX3D	Magnaflux was successful at recovering the obliterated serial number.
2EUWTC	Chemically processed using Fry's reagent. Reagent was applied 3 times for 5-10 seconds.
2EZ64K	Davis reagent, varies; Turner reagent, varies; Fry's reagent, varies.
2MTFEF	10% Nitric Acid, 20 mins; 25% Sodium Hydroxide, 20 mins; Acidic Ferric Chloride, 20 mins; Fry's Reagent, 15 mins.
2MVHCD	Magnetic Particle Inspection (Magnaflux)
2QD8MW	Acidic Method: Fry's Reagent, 15 minutes
2WY9HF	The sample was eaten away using chemical solution: $\text{CuCl}_2 \cdot 2\text{H}_2\text{O} + \text{HCl} + \text{H}_2\text{O}$. Time on material: 15 min.
2XFRYL	MPI/Magnaflux
2YN2PX	Method 9 version 1 - chemical etching, steel., 40 minutes.
2YYM2Y	Attached one leg of the yoke on either side; magnetise for approximately 15 seconds; Shake magnetic suspension; Apply 2 to 3 drops on the magnetised area; Keep surface horizontal.
2ZWBGU	Method 9/Version 1 =Fry's rest, 45 mins.
33GYHG	Ferric chloride, brushed on; Acidic Ferric Chloride, Brushed on; Polished w/ Drimmel[sic]; Ferric Chloride, brushed on.

TABLE 4

WebCode	Recovery Methods
34937G	Magnetic Particle Inspection
3BT3NF	[No Recovery Methods Reported.]
3HEYJH	10% NaOH; Ferric Chloride Reagent; Acidic Ferric Chloride Reagent (time not recorded)
3KMM7F	Fry's Reagent/ 4 applications/ 30-40 seconds per application. 25% Nitric Acid/ 5 applications/ 30-40 seconds per application
3MBQPT	Ferric Chloride, seconds to minutes; Acidic Ferric Chloride, seconds to minutes; Nitric Acid, seconds to minutes.
3RH9W9	Magnetic
3UURCX	Fry's Reagent, ~ 7 minutes.
3WBGAF	Acidic Ferric Chloride, 10; 25% nitric, 5.
3WCLXH	Magnaflux with 9CM Prepared Bath; Fry's Reagent, approximately 30 seconds (~10 swabs)
3XRBCB	Wet sanding. No acidic methods.
424AQU	Fry's Reagent, approximately 2 minutes.
4867B9	Electrochemical etching using Cupric Ammonium Chloride solution. The etching process was carried out for about 15 minutes.
48UK3D	~50% by volume Fry's reagent in water was alternated with acidic ferric chloride, applied by cotton swabs onto polished area of steel plate. Applications allowed to react for about 10-15 seconds each, before wiping with paper towel and next application applied. After 5 applications of each, faint characters were observed. The 1st character was inconclusive as to being "F" or "E". Likewise, the last character was inconclusive as to being "8" or "B". A 6th application of Fry's reagent, followed by acidic ferric chloride, resulted in a determination of the final serial # sequence F4N91B.
4C8V8N	Magnetic Particle Inspection
4DUL4M	Electro-Acid etching method
4FP3MB	Acid Etching, time on material 2 minutes.
4GZULJ	Turner's Reagent was tested and applied to the serial number area for five minutes, but nothing was developed. Fry's Reagent was tested and applied for three minutes and the serial number became completely legible. Fry's Reagent was applied for a second three minute period and the serial number became better defined and easier to read.
4KJYAG	Fry's Reagent for 5 minutes.
4M7Q6J	1. Turner's - 20 sec. 2. Fry's - 45 sec. 3. Fry's - 30 sec.

TABLE 4

WebCode	Recovery Methods
4PNY4J	Etching with Fry's Reagent, c. 2 minutes. (90 grams of cupric chloride in 120 ml of hydrochloric acid and 100 ml of distilled water).
4PPWEE	Magnetic Particle
4TBZJK	Magnetic Particle Inspection (Magna Flux)
4TTJEX	Applied swabs soaked with Modified Fry's - 5 min; Lightly sanded surface with a dremel tool and soft sanding wheel - 30 sec; Applied alternating swabs of Modified Fry's and 20% Nitric Acid - 15 min
4WAQUK	Etching using Fry's reagent (6 times) 10s each time
4XJV89	Electrolytic process of etching by Fry's reagent, 5 mins.; (180 ml of cc.HCl + 45 g CuCl ₂ + 10 ml of H ₂ O)
67AV7X	Magnaflux 7HF - N/A; Acidic Ferric Chloride - approx. 20 swabs; 20% Nitric Acid - approx. 20 swabs; 10% Sodium Hydroxide - approx. 20 swabs; Modified Fry's - approx. 15 swabs
67RP32	Fry's Reagent, 2 minutes.
6CGBM9	Electrochemical Etching using Cupric Ammonium Chloride Solution as an etchant.
6CZ4RD	Fry's Reagent, X3 - 10 min. per application.
6GCLXD	Fry's reagent - 10 seconds; Wiped cleaned.; Fry's reagent - 10 seconds; Wiped cleaned.; Fry's reagent - 10 seconds; Wiped cleaned.; Fry's reagent - 10 seconds
6GVV3V	1. Griffin's Reagent (several applications), 20 - 30 seconds each; 2. Light polishing with Dremel Tool; 3. Fry's Reagent (several applications), 5 - 10 seconds each.
6H9PHV	More Dremel grinding, 1st about 10 min; Apply acids - Fry's and Phosphoric-Nitric, after 2nd grinding - 15 m.
6PMGMZ	Aluminum solution, 30 - 60 seconds; Phosphoric Nitric acid, 30 - 60 seconds; 25% Nitric acid, 30 - 60 seconds; Fry's Reagent, 30 - 60 seconds.
6QJQZP	1. Ferric Chloride/acid was left on the material for a few seconds before being wiped off with a swab. 2. Acidic Ferric Chloride/acid was left on the material for a few seconds before being wiped off with a swab. 3. 25% Nitric Acid/acid was left on the material for a few seconds before being wiped off with a swab. 4. 10% Sodium Hydroxide/acid was left on the material for a few seconds before being wiped off with a swab.
6W2DH9	Acidic, using Fry's Reagent, 3 minutes
6XYLPR	Electro-magnetic process
7CWWWB	Fry's reagent, 2 minutes
7FAU4X	Electro-magnetic process

TABLE 4

WebCode	Recovery Methods
7JX78A	1-Method of processing non-destructive "Magna-flux", five (5) minutes; 2-Method destructive chemical "fry's Reagent", Five (5) minutes.
7MFA7T	Polish; Fry's Reagent, 5 min.
7N7P4G	Acidic Method (Fry's Reagent) only; used for 10 seconds (1st application); 20 seconds (2nd application); and 30 seconds (3rd application).
7NRZ6B	polishing - nothing observed; Fry's Rgt acid application - observation made, 3 min; polishing - nothing observed; Fry's Rgt acid application - final observation, 5 min.
7V6AC4	The obliterated area was polished with sandpaper. Magnetic particle solution was used with a magnet. Chemical Etching with: Davis reagent, a few seconds per cotton swab. (2 swabs used); Turner's reagent, a few seconds per cotton swab. (2 swabs used); Fry's reagent, a few seconds per cotton swab, repeated until characters appeared. (10 swabs used)
82EJLL	Magnetic Particle Inspection
8329HJ	Electro acid etching process, - + 30 seconds.
86VJPK	Visual Exam (Microscopy), NA; Physical (Sand and polish), NA; Chemical (Turner's Reagent), ~30 sec.; Chemical (Fry's Reagent), ~30 sec.; Chemical (Fry's Reagent), ~30 sec.
8K6YG3	POLISHING ACIDIC METHODS USED FOR APPROXIMATELY 12 MINUTES
8RLJJE	After polishing, a 10% sodium hydroxide solution was applied with not[sic] reaction. Nitric acid and then ferric chloride was then used with no reaction. Acidic ferric chloride was applied and allowed to sit for 30 seconds with some reaction, but no characters becoming visible. Acidic ferric chloride was then applied and allowed to sit for 1 minute and then two minutes before all the characters appeared.
8V7CTV	Electro-magnetic process
8ZXLTL	Acid etching applied to material for less than one minute intervals.
9AZ9C7	Fry's Reagent- ~3-4 minutes; 10% Sodium Hydroxide- ~1-2 minutes; Fry's Reagent- ~3-4 minutes
9BQJ6K	Electro-acid process ("Green Mamba"), 1 minute
9J9VBX	Polishing; Nitric Acid Soln (20%) alternated with modified Fryes[sic] Reagent, ≈ 45 minutes total time for both chemicals.
9KMZAW	Acidic ferric chloride for 10 minutes
9QKYC6	magneto - optical method; Chemical etching Fry and Adler, 10 - 15 sec several times.
9YJHYU	electrochemical enhancement with Fry's reagent, time on material appr. 10 min
A68W8E	Fryes[sic] reagent, 5 min.

TABLE 4

WebCode	Recovery Methods
A6GHKG	Electro-acid etching process, +/- 3 minutes.
A98VBY	FeCl ₃ (little to no rxn), less than 1 min; Acidic FeCl ₃ (little to no rxn), less than 1 min; HNO ₃ (little to no rxn), Less than 1 min; Fry's, less than 1 min.
AAD82N	Electro-magnetic process
AAVD76	step 1: a rotary tool was used to polish obliterated area; step 2: cotton tip swabs moistened with Fry's reagent were applied to area, 1 - 2 minutes; Steps 1 & 2 were repeated until full restoration was reached.
ADBP22	Fry's Reagent, 12 minutes.
AEFWW3	Sanding; Davis and Turner's reagent 10 minutes each; Ferric Chloride 5 minutes; Acidic Ferric Chloride 5 minutes; Fry's reagent 10 minutes
AKCXQ2	Fry's Reagent for 1-2 minutes while wiping with swab. Rinse with acetone.
AKDY8T	Electro-magnetic process
AML6TU	Nitric Acid; Fry's Reagent; Sodium Hydroxide; Davis Reagent; Nitric Acid.
ANHGVP	Magnetic particles with horseshoe magnet; 25% Nitric Acid: ~20 seconds; Turner's Reagent: ~20 seconds; Fry's Reagent: ~20 seconds; Fry's Reagent: ~20 seconds; Fry's Reagent: ~20 seconds
APERVX	Electrochemical etching, using Fry's Reagent, 5 min; Contrast solution (10% HNO ₃), 2 min; Acetone for cleaning the surface.
AQL4KM	Electro-magnetic process
ATBDL2	Magnetic particle.
AWN8AL	Fry's Reagent, 3 min.
AYEK24	1. Magnaflux; 2. 50% HNO ₃ 30 minutes; 3. Magnaflux
AZQDM7	application of magnetic defectoscope to the surface and spraying oil with metal particles
B3UCPC	Magnaflux was used to reveal the s/n and a photo was taken. More permanent restoration was done with Fryes[sic] solution (etching solution #1). The acid remained on Item 1 for approximately 30 minutes and another photo was taken.
B46283	Turners Reagent, 3 seconds between each swipe of a cotton swab; Fry's Reagent, 3 seconds between each swipe of a cotton swab; ~ 10 minutes total for restoration
B7TQD2	Sanding using Dremel rotary tool - 5 Minutes; Davis reagent - 3 Minutes; Turner's reagent - 3 Minutes; Fry's reagent - 2-3 Minutes
B9G7H3	Fry's Reagent - 30 seconds
BDVJMW	Chemical Etching, 3 - 5 mins

TABLE 4

WebCode	Recovery Methods
BGT8XC	Electrochemical treatment using Davis' Reagent (Modified) were used about one (1) minute.
BH8KQF	Turner's Reagent (5 minutes).
BJV67J	Fry's Reagent, 10 - 12 mins.
BRQQAG	Fry's solution, two minutes.
BUFGKG	Electro acid etching method, App 3 minutes.
BW6WYJ	Magnetic Particle Inspection; Chemical - Davis, 1 min; Chemical - Frys, 5 mins.
BXYHQP	Sodium hydroxide; Nitric acid ~1 min; diluted Acidic Ferric Chloride ~2 min; diluted Ferric Chloride < 1 min: minor pitting of metal occurred; diluted Fry's reagent ~30 sec (2 separate applications)
BXZ76U	Electro-magnetic process
C2A7EQ	Electro-magnetic process
C34R6W	Nitric Acid, 1 minute; Davis Reagent, 1 minute; Turner's Reagent, 1 minute; Fry's Reagent, 30 seconds.
C3RTD9	Fry's, 10 - 15 mins.
CCUDBU	Magnetic restoration (few seconds)
CHPTFA	1. Magnetic particle restoration prior to polishing. 2. Magnetic particle restoration after polishing. 3. Fry's Reagent and photographed (approximately 7 minutes). 4. 25% Nitric Acid and photographed (approximately 1 minute). 5. Water rinse, dried, preserved with clear lacquer and photographed
CHZVYM	magnetic particle with horseshoe magnet
CRNXXA	Acidic Ferric Chloride - 3 to 5 minutes
CUD846	Aluminum Solution, 4 minutes; Ferric Chloride, 2 minutes; Acidic Ferric chloride, 1 minute.
D27W47	Chemical Etching Solutions, ~ 10 minutes.
D3JDEX	Magnetic particle; Davis' Reagent, ~ 5 min; Turner's Reagent, ~ 5 min; Fry's Reagent, ~ 5 min; 25% Nitric Acid, ~ 5 min.
D6C3ZE	Electro magnetic process, followed by the electro acid method, 20 seconds.
D8E3XQ	Electro magnetic yoke process

TABLE 4

WebCode	Recovery Methods
DB2QMX	Mechanical polishing (surface preparation), N/A; Turner's Reagent (1 application) / Griffin's Reagent (1 application), 1 minute each; Turner's Reagent (1 application) / Fry's Reagent (1 application), 1 minute each; Turner's & Fry's (1 application) / Turner's Reagent (1 application), 1 minute each; Fry's Reagent (1 application)/Griffin's Reagent (1 application), 30 seconds/ 1 minute.
DHDXVL	Hydrochloric Acid/Distilled water/Copper(II) Ammonium Chlorid solution put on cotten wool wrapped around negative pole; low electrical current applied; Metal bar was wiped across the polished area for + - 45 seconds; Alpha Numeric figures developed, + - 45 seconds. [sic]
DK8G7Z	After sanding and polishing, Davis reagent was applied to the obliterated area and rubbed with a cotton swab for approximately five minutes. No characters observed. Turner's reagent was applied to the obliterated area and rubbed with a cotton swab for approximately five minutes. No characters observed. Fry's reagent was applied to the obliterated area and rubbed with a cotton swab for approximately five minutes. Characters were restored to read F4N91B.
DLZYD9	Davis Reagent, 1 hr.; Frye's[sic] Reagent, 20 min.
DMEQJQ	Fry's Reagent, 15mins
DQWA4L	Acidic Ferric Chloride, 5 to 10 seconds; 10% Sodium Hydroxide, 20 to 30 seconds; 25% Nitric Acid, 5 to 10 seconds; 50% Hydrochloric Acid, 20 to 30 seconds; Fry's Reagent, 10 to 20 seconds.
DXCV9J	Method 1- Ferric Chloride; Method 2- Acidic Ferric Chloride; Method 3- 10% Sodium Hydroxide; Method 1- Nitric Acid; All acidic material left on for a few seconds then rubbed over area with cotton swab.
DXEHPW	Chemical Etching using Acidic Ferric Chloride for approximately 10 minutes.
DXPCF6	Magnaflux and magnet
E29AH7	Magnetic Particle Inspection
E2NA2G	Electro-acid etching (green mamba), + - 2 minutes.
E68ZU8	Ferric Chloride (Lot # 111314CT), 2 seconds; Acidic Ferric Chloride (Lot # 111314CT) , 15 seconds; 25% Nitric Acid (Lot # 111314CT), 2 seconds; Polished with the dremel tool again. Acidic Ferric Chloride (Lot # 111314CT), 45 seconds
EBB4LQ	Ferric Chloride Etchant; Acidic Ferric Chloride Etchant.
EBT7CZ	Magnetic particle (Magnavis).
ECPU33	fry's reagent, ~15 min
EG4YPJ	Fry's reagent wiped/applied to metal for approximately ten minutes

TABLE 4

WebCode	Recovery Methods
ELTTCJ	The electro-acid etching process was used. A light electric current is attached to the exhibit (positive pole). The negative pole is attached to a stainless steel rod with a piece of cotton wool twisted around the tip. The cotton wool is dipped in acid-Green mamba (50 ml Hcl, 50ml H2O & 5g CuCl2NHCl2HO, which is rubbed lightly across the exhibit in one direction, The acid was rubbed lightly across the exhibit until the no appeared +/- 2 min & cleaned immediately.
ER3UME	Acidic Method, time on material 5 minutes
EU7RWM	Application of Modified Fry's (Batch #7) - approx. 1 min; Application of 10% Sodium Hydroxide (Batch #3) - approx. 30 sec; Application of Modified Fry's (Batch #7) - approx. 1 min
EWWRER	polishing/smoothing; Acidic Ferric Chloride, total of 10 minutes.
EZDA32	Griffin's Reagent, approx 10 min.
F3XEE7	Cupric chloride in nitric acid, 30 mins; 25% nitric acid, 20 mins; Fry's Reagent, 25 mins; 10% sodium hydroxide, 10 mins.
FAV99X	Acidic method - Turner's Reagent, 10 minutes; Acidic Method - Acid Copper II Sulphate, 10 minutes; Acidic Method - Fry's Reagent, 10 minutes.
FAVBX3	Photographed/ Visual; Sandpaper; Acid, 10 min; Sealer.
FEBPWU	Chemical etching using acidic ferric chloride - approximately 10 minutes.
FGHRW8	Fry's Reagent - 30 seconds
FHNGVA	MAGNAFLUX MAGNETIC AND ACID METHOD FRY'S FOR 5 MINUTES
FJ432J	VEU method 9 version 1 - Fry's reagent, 40 mins.
FLDA4C	Acid Etch - method; Used Fry's, Turner's, 25% Nitric Acid and Acetone, ~5 to 10 minutes.
FLTYJ6	Polishing; Fry's Reagent, Approx. 2 min.
FRD6QC	Electro-Acid etching process, about 30 seconds.
FW7C8Z	acidic ferric chloride, 5 minutes.
FYDKH6	1) Acidic method 2: Left about a couple of secondes and wiping; 2) Acidic method 2 : (again): Left about a couple of secondes (no wiping); 3) Acidic méthode 1: few drops left about a couple of secondes and wiping [sic]
FYF7F7	Nitric Acid, ferric chloride, acidic ferric chloride; ~20-30 seconds each; Nitric acid, Turher's[sic], Fry's; ~20-30 seconds each; Distilled Water; wiped off immediately
FZMPVT	THE METHOD USED: 1. POLISHING TOOL; 2. ACIDIC ETCHING METHOD USING FRY'S REAGENT FOR 5 MINUTES.
FZT8AD	Turner's, ~5 minutes; Fry's, ~7 minutes.

TABLE 4

WebCode	Recovery Methods
G63DFQ	25% NITRIC ACID SOLN; ~ 1". FRY'S; ~ 3"
G9Y2UC	Acidic Ferric chloride - approximately 1/2 hour
GAVCUL	Frye's[sic] acid etching, 3 - 5 min total.
GEQDMM	Chemical etching - non Ferrous metal; Fry's reagent, Approximate 30 sec - 1 min; Ferric Chloride, Approximate 30 sec - 1 min; Acidic Ferric Chloride, approximate 30 sec - 1 min; Modified fry's reagent, approximate 30 sec - 1 min.
GJ2RK8	MagnaFlux
GJDA4X	Acidic Method 1:Ferric Chloride - 5 minutes; Acidic Method 2: Acidic Ferric Chloride - 10 minutes.
GKFLFU	Acetic Ferric Chloride was applied to the surface for approximately two hours.
GKXU6N	Magnetic Particle Inspection Method
GL2QD7	Nitric acid 4 min. Ferric chloride 4 min. Sol. Chrome & Nickel 4 min. Magnet and suspended magnetic particles 4 min. Fry 10 min.
GL8EXB	Turner's, ~5 minutes; Fry's, ~2 minutes; Turner's, ~2 minutes.
GPP7ZK	FeCl3 - Acidic (2 times), < 30 seconds; 30% HNO3 (2 times), < 30 seconds; Fry's (1 time), < 30 seconds.
GQXBLV	Electrochemical etching using Cupric Ammonium Chloride solution. It takes about 10 to 15 minutes.
GUWN7Z	ACIDIC FERRIC for approximatly[sic] 2 minutes
GV7TH4	Surface polished with fine grade sand paper. Magnaflux solution applied to surface of steel bar. Magnetic field applied to steel bar revealing obliterated number.
H2HUPT	POLISHING ACIDIC METHOD, APPROXIMATELY 12 MINUTES.
H4N7P3	Acidic Ferric Chloride, < 10 sec -no reaction; Fry's Reagent, 2 min-full recovery.
HCEZG7	Acidic Ferric Chloride wiped across surface several times; Acetone wiped across surface; Polish with dremel; Acidic Ferric Chloride wiped across surface several times; Acetone then DIH2O wiped across surface; Acidic Ferric Chloride wiped across surface several times
HKTW8X	Davis, ~ 5 min; Fry's, ~ 1 min; Fry's, ~ 5 min; Fry's, ~10 min.
HMXCU4	Acidic Ferric Chloride - 2-3 minutes
HTJV6B	Polish Magnetic Particle Inspection Chemical Etching - Varied
HUFPT3	Acidic Ferric Chloride, 10 sec.
HUVRBF	VEU Method 9 Version 1 - Frys Reagent, 45 mins.

TABLE 4

WebCode	Recovery Methods
J4BHBR	Polish; Fry's - one minute; Polish; Fry's - two minutes
J4ZW3W	both 25% Nitric Acid and Fry's reagent were used. The reagents were left on the material for several seconds then wiped off. The reagents were used in alternation some with several applications.
JA682X	HNO3 (10%), 15 min.
JD6782	Griffin Reagent, ~2 min.
JD9YCJ	Stereoscopic; Chemical etch - Davis Reagent < 1 min; Chemical etch - Turner's Reagent < 1 min; Chemical etch - Fry's Reagent ~10-15 minutes
JJC363	Ferric Chloride (X1), 5 - 10 seconds; Griffin's (X4), 5 seconds each time.
JTX7AG	Grinding/Polishing; Fry's reagent, <5 minutes.
K349CT	Magnaflux - Magnetic particle inspection
K8WEK4	Etching using Fry's Reagent (4-5 times, 10 sec each)
K8X6ZY	Chemical Etching (Acid), 3 Hrs.
K98CZ7	1. Ferric Chloride, 30 seconds; 2. Acidic Ferric Chloride, 45 seconds; 3. 25% Nitric Acid, 25 seconds; 4. Fry's Reagent, 25 seconds; 5. Acidic Ferric Chloride, 45 seconds; 6. Ferric Chloride, 40 seconds; 7. Acidic Ferric Chloride, 1 minute; 8. Polish; 9. Ferric chloride 1 minute 30 seconds; 10. Acidic Ferric Chloride 2 minutes
K9B8T7	Hydrochloric Acid (32%) with mild heat applied to catalyse(approx 35 minutes). Sodium Hydroxide(10%) solution for contrast.
KD283E	Sodium Hydroxide - alternate uses based on restoration, don't measure; Fry's - alternate uses based on restoration, don't measure.
KEEQX6	Fry's Reagent, 30 minutes
KHTKE3	1. Polish; 2. Acidic Ferric Chloride (multiple swipes over 30 seconds); 3. Polish; 4. Acidic Ferric Chloride (multiple swipes over 15 minutes)
KKKEKJ	Magnaflux
KMMKTX	Electrochemical treatment, 10 - 15 minutes.
KN2Z9K	Acidic method, where the solution (Fry's reagent) was allowed to sit on the material for about 3-5 minutes
KRYH9X	non-destructive
KTB6XY	Magnetic
KTWK8A	Fry's Reagent, 1 minute.

TABLE 4

WebCode	Recovery Methods
KWC9NZ	Use of acidic solution. 1st: HCl, H ₂ O, CuCl ₂ , CuCl (No result); 2nd: HCl, HNO ₃ & HCl, CuCl (Result). We washed after acidic solution applications with fresh water.
KY2JGE	Electro-chemical etching method, +- 02 min.
L2N294	Fry's Reagent, Approx. 5 minutes.
L3YBE3	Modified Fry's reagent(Acid), 3 mins.
LBP3CV	Electrochemical etching using cupric ammonium chloride solution, 10-15 minutes.
LECDYF	Ferric chloride, 5 min.; Fry's reagent*, 5 min. *characters started to appear at approx. 1 min.
LHTVQ	Acidic Method 1-25%Nitric Acid, approximately 1 min; Acidic Method 2-10%NaOH, approximately 1 min; Acidic Method 3-Fry's Solution, approximately 1-3 min
LTVQ2U	Fry's Reagent was used- applied with a cotton swab- rubbing motion. Repeated multiple applications were made with the time the reagent was left on the surface varying from two to three minutes.
LVGZ23	Acid(modified Fry's Reagent), 5 min.
M238BU	Revealed to the non-destructive method or magnetic (Magnaflux), 2 minutes.
M6HYZ2	Electro-magnetic process "Magnaflux", 3 minutes.
M7W7FG	SWABBED WITH ACIDIC FERRIC CHLORIDE FOR APPROXIMATELY 45 MINUTES.
M8Q8QR	Acidic Ferric Acid, 5 minutes. Fry's Reagent, 10 minutes.
MAQZJK	Acidic method first, ferric chloride, five minutes; Acidic method second, acidic ferric chloride, eight minutes; Acidic method thire[sic], ferric chloride, four minutes.
MCZQMZ	Magnetic Particle Inspection
MGDY27	Magnetic Particle Inspection
MMW7GP	For the reconstruction of the characters different steel etching solution have been used. They called Ätzlösung 2, Ätzlösung 3 and Adlerlösung. After the test, the metal surface was neutralized with sodium carbonate and passivated with copper sulphate. An order of the etching solutions can not be given, because they have been used more than once and in different order. It depends of the metal quality and the quality of the characters which have to be reconstructed. Because we usually rub the acid saturated cotton swabs over the surface, we do not have a specific duration on which the acid lays on the material. The whole duration of the examination took about 15 minutes.
MRCMQU	Acidic Ferric Chloride, 5 minutes; Fry's reagent, 5 minutes.

TABLE 4

WebCode	Recovery Methods
MRVK3U	1. swabbed Acidic Ferric Chloride and 10% Nitric Acid, 30 seconds. 2. further sanding with Dremel. 3. swabbed Acidic Ferric Chloride and 10% Nitric Acid, 30 seconds. 4. swabbed Davis', Turner's and Fry's reagents and 10% Nitric Acid, 2 minutes. 5. swabbed Turner's and Fry's reagents, 2 minutes.
MTKVXT	Magnetic method "Magnaflux" (four minutes)
MW7KH7	Electro-acid etching process, 25 seconds.
MZHPQK	Magnetic
N78BPY	Acid Method 1: Turner's Reagent (approximately 2 minutes on material); Acid Method 2: Fry's Reagent (approximately 3 minutes on material)
N7PFUQ	Acidic Ferric Chloride, 3 minutes; Turner's Reagent, 3 minutes; Fry's Reagent, 1 minutes.
NAQG XU	magnaflux with applied magnetic field
NEZTWF	Ferric chloride w/ acidic ferric chloride, 1 - 5 mins; Acidic potassium Dichromate (reagent D) - highlight, 1 - 2 mins; Aluminum solution, (25% sulfuric acid), 1 - 3 mins; Ferric Chloride, 1 - 5 mins; Modified Fry's Agent (Bill Fort's reagent) highlight, 1 - 2 mins.
NKNH9D	The magnetic etching process
NNL2DW	Only one method is applied that using chemical etching method, applied by Davis reagent for 40 minutes, to restore the suspected obliterated serial number.
NR7TME	Electro-magnetic process used. White background laquer[sic] magnetic flaw detection is applied on the area. Steel is placed on the yoke magnetise for few seconds, black ink is then applied leave it for few seconds to develop. photo is taken and the results are recorded.
NW3EDG	Electro-magnetic process
NW3FF3	Electro-magnetic process
NWPUYD	Magnetic particle Inspection; Acid etching with Fry's Reagent, 2 minutes.
P7JJZ8	Electro-magnetic process
PA77PD	Polished; Ferric Chloride, less than 2 min; Polished; Ferric Chloride, less than 2 min; Fry's Reagent, less than 1 min.
PEZF6Y	Magna Flux
PH3EFR	Polishing Acidic Method: Fry's Reagent, ~ 30 sec per application
PK6CNY	polishing; Fry's, swabbed and swiped on and off maybe ten minutes to get reaction; polishing; Fry's, swabbed and swiped on and off maybe ten minutes to get reaction.
PNP4Z2	Ferric Chloride, (10 mins); Acid Ferric Chloride, (10 mins); Ferric Chloride in conc. HCL, (10 min); Fry's Reagent, (3-5 min).

TABLE 4

WebCode	Recovery Methods
PQ86GN	Electrochemical etching (cupric chloride solution).
PV6JCQ	Polishing; Fry's Reagent, 1 minute; Polishing; Fry's Reagent, 3 minutes.
PZEKR3	Electro-acid etching process, less than 1 min. We apply the acid buy swipping it over the surface of the metal thereby not leaving acid lie on the surface as it is continuously swipped off and reapplied. [sic]
PZGHRQ	Turner's/Fry's ~ 5 mins; Polish; Turner's/Fry's ~ 5 mins
Q2BD7L	magnetic particle testing
Q93X2L	1. Acid electrochemical treatment using cupric ammonium chloride solution as etchant. 2. 6V batery[sic] connected to place at one and a cotton swab at the other end. 3. Apply steady stroke with swab using the etchant, at interval of 1 - 2 minutes. 4. Wash away etchant with water and view the optimal lighting .
QF2H73	Electro-acid Etching Process, < 3 minutes.
QNXGHA	Electro-magnetic process
QUPH4W	Mercury Chloride solution; Nitric Acid; Magnaflux; Total time around 1h30.
QUTZA9	Fry's Reagent 100%, F4N91B, 3 min; Nitric Acid 25%, F4N91B, 2 min; Sodium Hyd. 10%, F4N91B, 30 sec.
R24PZR	Acid Etch, 10 - 15 min.
R64PN4	Magnetic Particle Inspection (MPI)/Magnaflux; Polishing with cratex wheel followed by MPI/Magnflux[sic]
R68C6H	Acidic ferric chloride; 10% sodium hydroxide; 25% nitric acid
R9ABFA	Chemotechnical etching using solutions containing hydrochloric acid, copper chloride and distilled water (2 solutions with different concentrations), 30 min.
RA4XWK	Very light polishing; Three rounds of swabbing with cotton swab sticks saturated with Fry's Reagent, less than two minutes with each swabbing.
RDRYHQ	Magna Flux 7HF
RJ9H4Z	HNO3 20%, ~5 minutes. Fry Reagent, ~1 minute.
RKHMGN	Fry's Reagent - approximately 35 minutes total
RLWHCB	Acidic copper chloride (Fry's), 15 minutes.
RNGFHT	Apply the acidic solution to the surface (HCl/CuCl/CUCI2-2(H2O)/H2O) - 10 minutes
RP7RB8	The dremel tool was used polish the area of the sample were the number was removed and acid was applied to mirror shine cleaned are area. After approximately 2 - 3 minutes the number appeared, 2 -3 minutes [sic]

TABLE 4

WebCode	Recovery Methods
RU6NXX	Application of Fry's Reagent for approximately five minutes.
RXP2RG	Fry's Reagent, 30 seconds; Fry's Reagent, 30 seconds.
RYVHTT	Fry's Reagent, 30 seconds; Fry's Reagent, 30 seconds; Fry's Reagent, 60 seconds; 25% Nitric Acid, 30 seconds
RYWKBB	Magnetic Particle Inspection, 1 minute
T2ZMNT	Acidic medium was used: cupric chloride, water, hydrochloric acid solution. The bar was kept in the solution for about 5 minutes. Then the bar was washed with water.
T4KEXA	A thin layer of white contrast sprayed on the surface and allowed to dry. The metal plate is placed on the yoke and magnetised for ± 15 seconds. A magnetic suspension[sic], which was properly shaken, is applied to the tampered surface and left to develop for a few seconds. The erased number then becomes visible.
T6X9BP	Acid Etch, 15 minutes; Clean surface and re-apply acid, 15 minutes.
T7TBFX	Fry's reagent, applied briefly
T7YUG3	Sodium Hydroxide, 30 - 45 seconds; Phosphoric/nitric acid, 30 - 45 seconds; Fry's reagent, 30 - 45 seconds.
T9FCEE	Chemical Etching+Electrolytic Methods: Fry's reagent+DC power supply (5 Min); Contrast solution; Running water to stop process
TAF2WP	1 - Turner's Reagent - Swab only; 2 - Fry's Reagent - Swab only
TBPWAL	Magnetic (Magnaflux)
TFEVNW	Magnetic Particle Inspection (5 minutes).
TFFTVL	1. Chemical treatment using 5% Sodium Hydroxide solution for 15 minutes followed by, 15 minutes; 2. Electrochemical treatment using Cupric Ammonium Chloride solution for 8 minutes, 8 minutes.
TKUC82	Acidic Ferric Chloride - seconds
TTNJP7	Fine ground - dremel, NA; Ferris Chloride, swabbed; Acidic Ferric Chloride, swabbed; Sodium Hydroxide, swabbed; Acidic Ferric Chloride, swabbed.
TULRXQ	Acidic Ferric Chloride, 10 min. Sodium Hydroxide, 5 min. Nitric Acid, 5 min.
TYC7EK	Sanding Fry's reagent approximately[sic] 1 minute (swabbing the whole time)
U2YXAM	Acidic Ferric Chloride; Polished; Acidic Ferric Chloride.
U48LWL	Electrical magnet with Magnaflux 9CM
U83YH4	electro acid method was used to recover the obliterated number, +/- 3 min.

TABLE 4

WebCode	Recovery Methods
UCW2CW	Fry's ~2 minutes
UDABP3	Used the following chemicals; Ferric Chloride - several seconds with continuous swabbing; Acidic Ferric Chloride - several seconds with continuous swabbing; 25% Nitric Acid - several seconds with continuous swabbing; 10% Sodium Hydroxide[sic] - several seconds with continuous swabbing
UJXNCP	Fry's Reagent - 5 min; Nitric Acid 25% - 5 min; Fry's Reagent - 5 min; Nitric Acid 25% - 5 min; Fry's Reagent - 5 min
UKRTUX	Electro-acid process, 30 seconds.
UL3Q8F	THE STOCK WAS POLISHED SMOOTH USING A DREMEL TOOL, AND THEN ETCHING SOLUTIONS DAVIS' REAGENT, ALUMINUM SOLUTION, AND AQUA REGIA WERE APPLIED FOR APPROXIMATELY 40 MINUTES.
UMCZXR	Acidic Ferric Chloride - 2 minutes
UMHFNR	Magnetic particle inspection, N/A
UN37AB	Magnetic and electrical restoration (60 s)
V36D3R	Sanding; Magnaflux; Fry's Etching Reagent.
V4XQQY	Acidic Ferric Chloride, ~ 1 to 2 minutes.
V4YMWN	Acidic, 10 min.
V72K8G	electrochemical treatment, 20 min
V7P6EU	Fry's reagent, 30 seconds.
V9D794	Magnaflux
VDKNG6	The electro-acid process. I attached the crocodile clips (red wire) to the object that I was etching then wind a piece of cotton wool which is deepd in a Green Mamba solution around the copper point which is attached to the black conductin wire and I applied it to the area where the number had been affaced until the numbers started to resurface, + - 5 minutes. [sic]
VEJZ87	Acidic Ferric Chloride, 20 minutes; 25% Nitric Acid, 5 minutes; Fry's Reagent, Momentarily.
VGLUWB	Electromagnetic restoration. Chemical restoration: Fry reagent (3 min)
VGLXFD	1) Cupric Ammonium Chloride, approximately 5 minutes; 2) Fry's Reagent, approximately 2 minutes
VKZMPN	Fry's Reagent (swab tech.), approx. 3 minutes.

TABLE 4

WebCode	Recovery Methods
VMPVW6	The dremel tool was used polish the area of the sample were the number was removed and acid was applied to the area. After approximately 2 - 3 minutes the number appeared, 2 - 3 minutes. [sic]
VQRH2U	A - MODIFIED FRY'S REAGENT - 5 MINUTES. B - NITRIC ACID - 10 MINUTES
VZVRDL	Fry's reagent, 3 minutes.
W3Y4AD	The electro magnetic process: white contrast ink was applied after cleaning with acetone. The plate was left to dry for 15 minutes after which it was magnetized with a yoke. Black magnetic ink was then applied onto the magnetized plate in order to recover the obliterated numbers
W69XJK	Fry's Reagent, ~ 2 minutes; Fry's Reagent, ~3 minutes; Fry's Reagent, ~ 3 minutes.
WBB8L7	Magnaflux; Polish; Acidic Ferric Chloride - approx. 2 minutes; 20% Nitric Acid - approx 2 minutes
WBBYR2	I used electro-acid etching process, I switched on the voltmeter to a desired voltage, plug the contact points of the two conducting wires attach the crocodile clips to the object to be etched, put a piece of cotton wool around the upper points of the black conducting wire. Soak the wool into the acid solution and then apply it to the area in question. The acid was left on the material for plus minus 2 minutes before I could see the number.
WCK7T9	Electro-magnetic process
WFPEXP	Ferric Chloride, 13 minutes.
WFRAY3	Ferric Chloride, 2 minutes; Acidic Ferric Chloride, 2 minutes; Phosphoric/Nitric Acid, 2 minutes; Fry's Reagent, 30 seconds.
WM86LY	Electro-magnetic process
WM8NML	Fry's Reagent 3 minutes
WPDD3W	1. Ferric Chloride - few seconds; no reaction 2. Acidic Ferric Chloride - approximately 1 minute; no reaction. 3. Fry's Reagent - approximately 4-5 mins; restored.
WRZ4ZU	Electro Magnetic Etching Proses[sic].
WZRMD3	Electro-acid etching process "green mamba", 1 minute.
X4T6W	Fry method. About 20/25 mn
X7ZD9L	MPI (Magnetic Particle Inspection).
X8NYPQ	Red Magna Flux
X9KCFP	Fry's reagent, 5 min.
XGULZB	Magna Flux revealed serial # F4N91B

TABLE 4

WebCode	Recovery Methods
XKVU4L	Magnetic Particle Inspection (Magnaflux)
XKWZLL	Acidic method 1: Ferric Chloride Solution, time on the material 15 min; Acidic method 2: Acidic Ferric Chloride Solution, time on the material 15 min; 10% Sodium hydroxide.
XP738B	Electro - magnetic process: 1. Sprayed the obliterated area with a white background contrast lacquer. 2. Placed the stainless steel bar stock on the yoke to magnetize[sic]. 3. Poured black magnetic ink onto the obliterated area.
XQZQML	Acidic Chloride/5 min; Acidic FeCl ₃ /5 min (DI-H ₂ O Rinse); 10% NaOH/1 min; FeCl ₃ /5 min (DI-H ₂ O Rinse); Fry's/5 min; 25% nitric acid/30 sec (Image); Griffiths/1 min (3x); Fry's/5 min; Acetone/1 min (3x)
XVHX4	Electro - magnetic process was used. White background lacquer[sic] magnetic flaw detection is applied on the area. Steel is placed on the yoke, magnetise for few seconds, black ink is then applied leave it for few seconds to develop. Photo is taken and the results are recorded.
XWQ3PA	Magnetic restoration
Y6M4XZ	Grinding; Phosphoric/Nitric, 20 seconds; 25% nitric, 20 seconds; Fry's, 30 seconds.
Y7VNQM	Acidic ferric chloride, ~3 mins; 25% nitric acid, <30 sec.
Y9HXTG	Nitric Acid 10%, ~ 5 minutes; Sodium Hydroxide, ~ 5 minutes; Acidic Ferric Chloride, ~ 30 minutes.
YABT8C	Ferric Chloride, 10 minutes + 3 more minutes; Acidic Ferric Chloride, 10 minutes + 5 more minutes; 25% Nitric Acid, 8 minutes; 10% NaOH, 8 minutes.
YAQYM2	The electro-magnetic etching process
YE8CF3	Acid etching, Mod. Fry's 2.5 min; Alternating swabs: Mod. Fry's, 20% Nitric Acid and Acidic Ferric Chloride
YFKY2X	Electromagnetic process
YGZ7FR	Nitric Acid - 12 minutes
YHNRXG	Chemical etching (ferric chloride), ~1 min; Chemical etching (Acidic ferric chloride), ~ 8 - 10 min. while continuing swiping with swab.
YJHLMY	Magnaflux and electromagnet, n/a; Ferric Chloride, 5 minutes.
YPQVRL	Application of an acid solution used for aluminum alloy, followed by a rinse with water, 3 X 45"
YRBPNM	Chemical process using Fry's Reagent, 20 mns.
YUMDCT	[No Recovery Methods Reported.]
YVB2H2	Made surface flat smooth with sanding paper. Apply acid.

TABLE 4

WebCode	Recovery Methods
YWUTN6	Fry's reagent was used, along with light sanding of the area with sand paper. The sanding was followed up with more Fry's reagent. Total time Fry's reagent was on the surface was 8-10 minutes.
YZHRK8	Ferric Chloride, 5 minute; Acidic Ferric Chloride, 5 minute; Fry's Reagent, 1 minute.
Z6WZMH	Fry's reagent. Numerous attempts. Approximately 10 seconds per application.
Z73AD9	Fry's Reagent (2 minutes)
Z9GUNP	25% nitric - bath for 5 minutes - no observable effect. Then repeatedly wiped with dilute fry's reagent until chracters appeared - 15 minutes.[sic]
ZKPGBA	Application of acidic ferric chloride- swiping continuously with a cotton swab approximately five minutes before characters appeared. Acid left on material an additional three to five minutes with occasional swiping with cotton swab before all characters were recorded.
ZPLPBC	Polish with Dremel and sandpaper; Ferric Chloride, 10 minutes; 25% Nitric Acid, 15 minutes; Fry's Reagent, 10 minutes.
ZTHHXE	Fry's reagent, several minutes; Water, 1 minute; Fry's reagent, several minutes.
ZUFHTQ	Electromagnetic particle restoration technique (7HF)
ZV9Q2N	Applied magnetic field (2 minutes approximately); Magneto-optical sensor technology (7 minutes approximately).
ZVQKZD	Electrochemical method using cupric chloride (acidic) solution. The acidic solution was left on the surface for around 5-10 minutes.
ZWEDET	Electro-acid etching process only, + - 20 seconds.
ZXVDLP	Polishing; Turner's Reagent 1-2 mins; Fry's Reagent 3-4 mins

Response Summary		Participants: 348
Recovery Methods		
Chemical Processing:	248	
Magnetic Processing:	75	
Combined Magnetic and Chemical Processing:	21	
None:	4	

Additional Comments

TABLE 5

WebCode	Additional Comments
24EUMD	The acids were removed and the surface cleaned continuously, to observe the appearing characters at each step.
2CBPPH	Very good sample (known) of numbers and letters given. Eliminating certain numbers and letters on the known greatly assisted in the identification of the restored numbers.
2MTFEF	Very light magnetism so started with aluminum restoration chemicals before switching to Fry's after realizing the unknown was stainless steel.
3MBQPT	Sample was not magnetic.
4867B9	I found filing marks on the area bearing the suspected obliterated serial number.
48UK3D	Acid reliability checked by first swabbing each acid reagent onto steel plate, at a spot far from center of the plate, near a corner of the steel plate, and observing discoloration of or bubbling on the steel surface. Unequal spacing between the 1st character, and the next block of 5 characters. No neutralization was performed due to faint characters; not disturbed for photographing.
6GVV3V	Photographs were taken of item 1 following recovery of serial number. Instruments: Stereo Macroscope: Leica, M80, serial #5597232, Dial Caliper: Westward, 0 - 6", Serial # GS251500
7JX78A	In most cases using magnetic method must be confirmed by chemical method.
7NRZ6B	Photographs were taken as the alphanumerics were revealed. In a addition confirmation of the alphanumerics were confirmed by a colleague. The final product was cleaned and oiled.
7V6AC4	The standard was not further examined.
9AZ9C7	The serial number was restored fairly quickly, the last 5 digits appeared first and then the first character finally popped up.
A68W8E	I think that there should be an indicator of which way is up on the bar stock. This would help in processing because in the real world we know which way the numbers/letters will be facing.
A98VBY	Item 1 Bar stock was not magnetic.
AQL4KM	Electromagnetic method was the only process used since it was able to magnetize and recover the obliterated number. No acidic method was performed prior [sic] recovery of the number.
AYEK24	Sanded area then used Magnaflux. Sanded a second time plus magnaflux. In between 2nd and 3rd sanding used 50% HNO3 for 30 minutes. Third sand then magnaflux.
B46283	Oil was applied to the sample after the serial number was restored.
BRQQAG	Repeated the steps of polishing and applying Fry's solution to the sample until the serial number was restored.

TABLE 5

WebCode	Additional Comments
BUFGKG	1. Electrical current was coupled with the exhibit. 2. Positive pole was attached to the exhibit and negative pole was attached to steel pair of tweezer (with cotton wool twisted around the tips of tweezer). 3. Cotton wool was dipped into acid solution. 4. When the pair of tweezers touched the exhibit, a small current went through the exhibit and to the cotton wool. 5. A lower current was used initially and increased progressively. 6. The cotton wool was wiped over the surface of the exhibit until the number appeared.
D3JDEX	Initially, Davis' Reagent and Turner's Reagent were applied, followed by magnetic particle processing resulting in the following possible characters: "F4N918". Since Q-1 is only minimally magnetic, Fry's Reagent and 25% Nitric Acid were applied alternately in an effort to raise characters to be visible without magnetic particle. This was successful, and during this process, the last character was confirmed to be a "B" rather than an "8". Depending on the angle of view, the "B" can easily be mistaken for an "8".
D8E3XQ	For the polishing process, the Dremel tool was used together with jewelry polish.
DK8G7Z	The aluminum standard was not further examined.
DQWA4L	The acids were left on the surface long enough to observe a reaction. If there was no reaction, the reagent was removed and the next one was applied. If a reaction was observed, the acid was left on the surface longer to observe any character formation. Since 10% Sodium Hydroxide and 50% Hydrochloric Acid reacted with the surface the best, the reagents were alternated several times in an attempt to lift the characters. There was a point when the acids were not adhering to or reacting with the surface of the metal. At that point Fry's Reagent was applied resulting in a full restoration. Once the Fry's Reagent was applied, it only took 10 to 20 seconds for the characters to fully appear.
DXCV9J	Repeated the process several times.
E2NA2G	All the steps for electro-acid etching process were followed correctly, and the desired results were achieved.
E68ZU8	The last three digits were clear after application of the first three acidic methods. After polishing and applying the Acidic Ferric Chloride (Lot #111314CT), the full serial number was chemically restored.
EBB4LQ	The etchants were used by applying them with a swab and continuously[sic] wiping across the obliterated area.
EWWRER	Item 1 and the standard bar stock were inscribed with the Test No., analyst's initials, and date of examination. Photographs were recorded and saved to show Item 1 before and after restoration.
F3XEE7	10% sodium hydroxide was the chemical that revealed the partial serial number.
FRD6QC	The serial number was visible for a period, long enough to actually take a photo of the retrieved serial number.
FW7C8Z	The acidic method was removed from the surface, continuously, to observe the appearing characters during the recovery of the serial number restoration process. The obliterated area was cleaned after work with delicate task wiper and lubricated to avoid the corrosion.
GEQDMM	Progress on restoration was not from any one chemical. Progress was from a combination of these chemicals.

TABLE 5

WebCode	Additional Comments
GL2QD7	Must be considered the possibility[sic] of using suspended magnetic particles even in non magnetic materials.
GQXBLV	The visual examination of the item revealed the presence of filing marks on the centre of the bar.
GV7TH4	no need to pursue the chemical restoration technique.
JD9YCJ	Would have made casts of tool marks for later comparison.
KD283E	Removal marks were obscuring[sic] s/n restoration during much of the process. They were quite deep & prominent, persistent.
KHTKE3	Exhibit was photographed at each step
KN2Z9K	The first character was not as defined as the remaining five.
KTB6XY	Methods: Serial Number: Magnetic, thermal, and chemical methods may be used for the restoration of serial numbers. Conclusions regarding restored characters are made by visual examination of the restored surface under a variety of lighting conditions. Information regarding the alpha-numeric structure or the general location of serial numbers is obtained when necessary from reference sources or from firearms in the Laboratory's Reference Firearms Collection. Limitations: Serial Number: With the exception of the magnetic method, serial number restoration is a destructive examination and it is possible that the obtained results may not be reproduced in any subsequent examinations. Restored serial numbers are sometimes only visible during a portion of the reconstruction process, and are not necessarily visible at the conclusion of the process.
KY2JGE	This chemical restoration is enhanced by the application of voltage that speeds the oxidation process of metal. An item is attached to the positive terminal of power supply via the use of metal alligator clip. A soaked cotton tip (deeped[sic] in chemical solution) is attached to the negative terminal power supply. Wipe the area of obliteration with moisten cotton tip deeped[sic] in chemical solution and the number began appearing.
LECDYF	A couple of drops of light machine oil were added to enhance the contrast for digital photography
LTVQ2U	Extra applications of Fry's after the serial number became visible were done for purposes of obtaining a darker image for better photo doumentation[sic].
M238BU	The results obtained are set by digital photography. The characters of the result obtained are very similar in size and morphology to the printed samples of test No.15-5250 (aluminum standard).
MMW7GP	The quality of this test item was comparable with the test item last year.
MTKVXT	Document results with photography.
N7PFUQ	The acid was cleaned with delicate task wipers, constantly, to write down characters appearing at each step.
PH3EFR	* 30 seconds per application, 5 applications of Fry's Reagent. Item 1A-steel bar stock. Item 1B-aluminum standard

TABLE 5

WebCode	Additional Comments
PNP4Z2	Item 1 was cleaned with deionised water and pat dry before the new acid.
PQ86GN	All numbers/digits has been restored.
PV6JCQ	Aluminum barstock was not opened or examined.
PZEKR3	Stainless steel is non-magnetic substance so only the electro-acid etch process is applicable.
QF2H73	Only electro-acid etching process was used as the material could not magnetize to allow the application of an alternative method i.e. electro magnetic process.
QUPH4W	Item 1 is not magnetic, so I put a steel sheet under the plate and with a magnet and magnaflux the serial number was restored.
QUTZA9	Number fully recovered - Images of recovery retained in F/A - TM section.
R9ABFA	The method "Serial Number Restoration" is accredited according to ISO 17025.
RKHMGN	Stainless steel bar stock serial number removed = Item 1A. Aluminum bar stock = Item 1B.
RNGFHT	Clean and wash the surface, apply a protective coating.
RXP2RG	After the number was restored, the area was rinsed with tap water to neutralize the acid.
T4KEXA	After a photograph of the restored number has been taken, the magnetic suspension and contrast spray is removed using the cleaning solvent (acetone) and a thin layer of oil is applied to protect the surface of the metal plate. All equipment as well as the working surface was cleaned and packed away respectively.
T9FCEE	At each step of analysis sample preparation pictures were taken
TAF2WP	Serial number restoration was quick.
TFEVNW	A good positive result was obtained during the first attempt and therefore only electromagnetic process was applied.
U2YXAM	The reagent was verified to react prior to use. The opposing side of the obliterated area of Item 1 was used for reagent verification.
U83YH4	The experiment was success. It is necessary before applying anything to clean the surface with acetone.
UKRTUX	I also put black magnetic solution on the metal, then I recovered the number but the metal is not magnetic material.
V7P6EU	Fry's reagent initially left on the metal for 30 seconds then reagent moved over the metal surface using a cotton swab. Entire number readable after approximately 5 minutes.
VQRH2U	(A) WAS WIPED WITH A COTTON SWAB REPEATEDLY FOR ABOUT 5 MINUTES. ITEM 1 WAS DRIED AND (B) WAS WIPED ON REPEATEDLY FOR ABOUT 10 MINUTES UNTIL THE CHARACTERS WERE CLEARLY VISIBLE.
WBB8L7	The best result was obtained using Magnaflux. The acidic methods were used after Magnaflux just to see if a better photograph could be obtained.

TABLE 5

WebCode	Additional Comments
WBBYR2	The numbers were found and noted down on the 212 statement and on D1 also. I used the right procedure and followed the SOP to recover the obliterated number hence it was recovered easily.
WCK7T9	The alpha numeric number is F4N91B.
WRZ4ZU	Retrieve the obliterated serial number, F4N91B - (Positive[sic] results).
XKVU4L	Stainless bar stock not attracted to magnet, however, Magnetic Particle Inspection restoration method restored all 6 characters.
YFKY2X	Although the material is not magnetic, it could still be determined with electromagnetic method.
YJHLMY	First I applied Magnaflux (electromagnetic) and all characters were visible but the first was not clear. It was either an F or a P. Ferric Chloride was applied and the first character was determined to be an F.
ZV9Q2N	Document results with photography and digital video.

Appendix: Data Sheet

Collaborative Testing Services ~ Forensic Testing Program

Test No. 15-5250: Serial Number Restoration

DATA MUST BE RECEIVED BY April 20, 2015 TO BE INCLUDED IN THE REPORT

Participant Code:

Webcode:

Accreditation Release Statement

CTS submits external proficiency test data directly to ASCLD/LAB and ANSI-ASQ NAB/FQS. Please select one of the following statements to ensure your data is handled appropriately.

This participant's data is intended for submission to ASCLD/LAB and/or ANSI-ASQ NAB/FQS. (Accreditation Release section on the last page must be completed and submitted.)

This participant's data is NOT intended for submission to ASCLD/LAB or ANSI-ASQ NAB/FQS.

Online Data Entry

Visit www.cts-portal.com to enter your proficiency test results online. If you have any questions please do not hesitate to contact CTS.

Please Note: A piece of aluminum bar stock labeled as "Aluminum Standard" was also included in the sample set and is intended as a reference for size, shape and positioning of the stamped alphanumeric characters used in the serial number.

Items Submitted (Sample Pack SNR1):

Item 1: A piece of stainless steel bar stock with suspected obliterated serial number.

1.) Please record the restored characters below.

The serial number on this material consists of 6 characters.

Item 1: _____

2.) What would be the wording of the Conclusions in your report?

Please return all pages of this data sheet.

Participant Code:
Webcode:

Additional Testing Information

3.) What methods were used to prepare the sample prior to attempts at recovery?

4.) What methods of recovery were used during your examination?
(Please list in order of use)

If an acidic method was used how long was the acid left on the material?

Method	
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5.) Additional Comments

<p>Return Instructions: Data must be received via online data entry, fax (please include a cover sheet), or mail by <i>April 20, 2015</i> to be included in the report.</p> <p>QUESTIONS? TEL: +1-571-434-1925 (8 am - 4:30 pm EST) EMAIL: forensics@cts-interlab.com www.ctsforensics.com</p>	<p>Participant Code: ONLINE DATA ENTRY: www.cts-portal.com FAX: +1-571-434-1937 or Toll-Free: 1-866-FAX-2CTS (329-2287) MAIL: Collaborative Testing Services, Inc. P.O. Box 650820 Sterling, VA 20165-0820 USA</p>
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Please return all pages of this data sheet.

Participant Code:
Webcode:

Collaborative Testing Services ~ Forensic Testing Program

RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code: _____ Webcode: _____

for Test No. **15-5250: Serial Number Restoration**

This release page must be completed and received by **April 20, 2015** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

ASCLD/LAB RELEASE

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the laboratory's designated individual complete the following.
The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.

ASCLD/LAB Legacy Certificate No. _____ ASCLD/LAB International Certificate No. _____

Signature _____ Date _____

Laboratory Name _____

Location (City/State) _____

ANSI-ASQ NAB/FQS RELEASE

If your laboratory maintains its accreditation through ANSI-ASQ NAB/FQS, please complete the following form in its entirety to have your results forwarded.

ANSI-ASQ NAB/FQS Certificate No. _____

Signature and Title _____ Date _____

Laboratory Name _____

Location (City/State) _____

Accreditation Release	
Return Instructions	
<i>Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.</i>	<i>Questions? Contact us 8 am-4:30 pm EST Telephone: +1-571-434-1925 email: forensics@cts-interlab.com</i>

Please return all pages of this data sheet.