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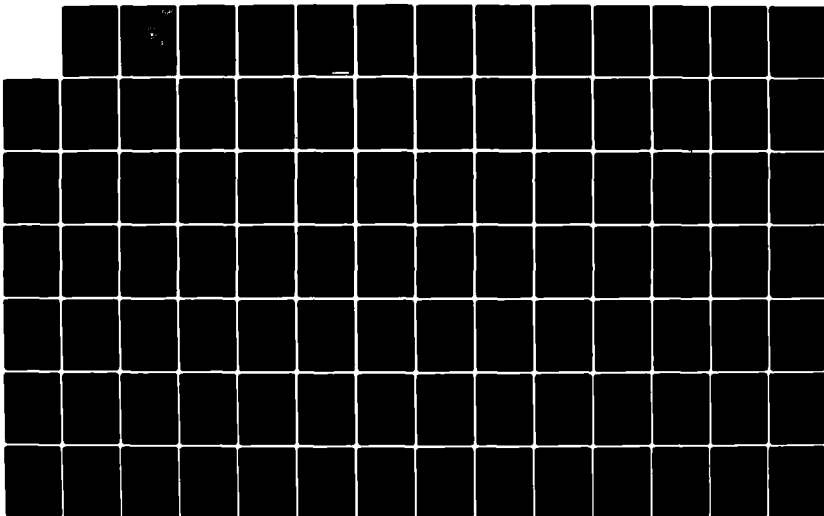
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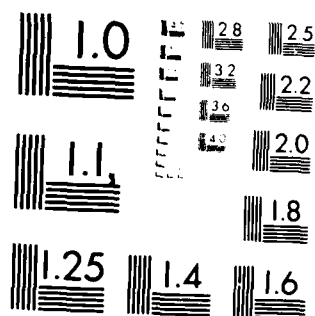
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STATISTICAL ANALYSIS FOR THE
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TECHNICIAN PROFICIENCY
MEASUREMENT PROGRAM

by

T. Jayachandran

H. J. Larson

June 1983

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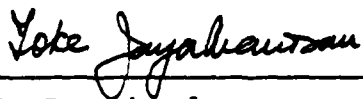
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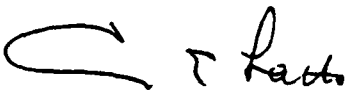


T. Jayachandran
Associate Professor of
Mathematics



H. J. Larson
Professor of Operations Research

Reviewed by:



G. E. Latta, Chairman
Department of Mathematics



A. R. Washburn, Chairman
Department of Operations Research

Released by:



William M. Tolles
Dean of Research

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This paper describes two new procedures for the proficiency scoring and ranking of AF NDI technicians. These procedures appropriately weight a technician's ability to detect flaws of different sizes and "excessive" number of false calls is penalized.			

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STATISTICAL ANALYSIS FOR THE NONDESTRUCTIVE INSPECTION (NDI)
TECHNICIAN PROFICIENCY MEASUREMENT PROGRAM

The Air Force Nondestructive Inspection (NDI) Program is designed to detect damages to aircraft parts and assemblies before they can lead to catastrophic results. The damage assessments are based on quantitative measurements obtained by using several different NDI techniques such as the ultrasonic, eddy-current and the penetrant techniques. All of these techniques require an Air Force technician to read and correctly interpret an associated instrument reading. A recent study [1] has indicated that the reliability of the NDI program falls short of the Air Force requirements because of the high degree of variability in the technician performances. The study recommended a periodic testing of the technicians to evaluate their proficiency, leading to corrective action (retrain) where necessary. These findings and recommendations led to the creation of the Technician Proficiency Measurement Program. The Technician Proficiency Measurement Program consists of administering practical tests involving nondestructive inspection of fabricated flawed aircraft structures, called test racks. Each test rack is made up of several specimen plates with simulated fatigue cracks of various sizes, at randomly selected fastener sites. A technician participating in the program is required to perform a non-destructive inspection using a specified NDI technique to detect the flawed sites and mark his findings on a scoring sheet designed for the purpose. These scoring sheets are to be used to construct a proficiency measure for each of the technicians. This measure is to be the basis for the ranking/grading of the

technicians.

The Lockheed-Georgia company designed and fabricated the test racks. A total of twelve racks, six to be used with the ultrasonic technique and the other six for the eddy-current technique have been manufactured. Each rack has a total of 148 fastener sites of which approximately 30 are flawed with the flaw sizes ranging between .03" and .28". Details of the test rack configuration are available in [2].

The proficiency measurement test was administered at 17 Air Force bases distributed over 6 Air Force commands. A total of 126 technicians using the ultrasonic technique and 134 technicians using the eddy-current technique participated in the test program. The initial summarization of the scoring sheets consisted of determining four aggregate quantities - total number of flawed sites detected, total number of flawed sites missed, the number of false calls (unflawed sites marked as flawed) and the number of unflawed sites correctly identified. The statistical analysis proposed in the NDI Technician Proficiency Test Plan [2] is to compute a well-known statistical quantity called the contingency coefficient. The contingency coefficient multiplied by 10, to be called the C-Score, is to serve as a measure of technician proficiency. One of the drawbacks of this procedure is that it gives equal weights to all the flaws regardless of the flaw size. In other words, a technician who is able to detect small flaws well gets the same amount of credit as another who is only able to detect larger sized flaws. Also, the contingency coefficient method tends to assign an unduly heavy weight to the number of false calls; the primary reason for this phenomenon is

that the ratio of the number of unflawed sites to the number of flawed sites is of the order of 4 to 1. We were, therefore, tasked to develop an alternative proficiency ranking methodology which incorporates the various crack lengths used in the program.

As a first step we computer-coded the original scoring sheets and determined for each technician the number of finds and misses for each of the four flaw size categories, and the unflawed sites. To maintain anonymity we assigned numerical codes to the 152 technicians and the 16 Air Force bases that participated in the program. The results are presented in Appendices IV and V. It should be pointed out that there were some minor differences in the number of finds, misses and false calls between the Lockheed summarization and our computerized results. We used our counts in all the computations of this report.

Our approach to the development of an alternative ranking methodology is to define a scoring system that assigns relatively higher weights to smaller sized flaw detections and appropriately penalizes excessive false calls. The flaw sizes used in the program have been grouped into four categories that we label small (.03" - .05"), medium (.08" - .11"), large (.15" - .18") and X-Large (.23" - .28"). Assuming that the Air Force technicians participating in the test program constitute a random sample, the first step is to estimate the probability that a technician would correctly identify a small, medium, large and an X-Large flawed site, as well as the probability that an unflawed site is identified as such. Based on the results for the 126 ultrasonic and 134 eddy-current technicians, the estimated probabilities are .315, .499, .637, .735 and .687 for the ultrasonic

and .540, .752, .897, .897 and .852 for the eddy- current technique. As is to be expected the detection probabilities increase with flaw size. The set of weights, say W_1, W_2, W_3, W_4, W_5 to be used in computing a technician's score is obtained by taking the reciprocals of the probabilities, normalized to add to unity by dividing by the sum of the reciprocals. For example, the weight W_1 associated with small flaw detections using the ultrasonic technique is $W_1 = (1/.315) / [(1/.315) + (1/.499) + (1/.637) + (1/.735) + (1/.687)] = .332$; similarly $W_2 = .210, W_3 = .164, W_4 = .142$ and $W_5 = .152$. The corresponding weights for the eddy-current technique are .281, .202, .169, .169 and .178. An individual technician's "probability score", denoted P- score, is now computable by implementing the following steps:

STEP 1: Compute p_1, p_2, p_3, p_4 the technicians observed proportion of small, medium, large and X-Large flaw detections and p_5 the proportion of unflawed sites correctly identified.

STEP 2: Compute $p_1W_1 + p_2W_2 + p_3W_3 + p_4W_4$ and p_5W_5 .

STEP 3: Compute Q the ratio of the total number of fastener sites that are marked as flawed regardless of whether these sites are actually flawed or not, to the total number of inspection sites. Q is a measure of the probability that a technician will correctly detect a flaw purely by chance. In the extreme case when all sites are marked as flawed Q is 1 and the probability is 1 that all flawed sites are correctly identified. Q will be close to 1 and only if there is an excessive number of false calls.

STEP 4: Compute the technician's unadjusted probability score $U = (1-Q)(p_1W_1 + p_2W_2 + p_3W_3 + p_4W_4) + Qp_5W_5$. Note that in this computation each of the flaw detection proportions p_1, p_2, p_3, p_4 gets multiplied by $(1-Q)$ which will have the effect of reducing the impact of the detection rates on the probability score; when Q is high and vice versa. Also, when Q is high, p_5 the proportion of correctly identified unflawed sites will be low and hence the total raw score will tend to be low. This approach to adjusting the score by correcting for flaws caught purely by chance is very similar to the one proposed by Sharp and Sproat [3].

STEP 5: Divide U by $(W_1 + W_2 + W_3 + W_4) + Q(W_5 - W_1 - W_2 - W_3 - W_4)$ to obtain the adjusted probability score. This last step ensures that the maximum value of the score is unity.

The probability score described above has the following properties:

- 1) A technician with a comparably higher proportion of smaller sized flaw detections will receive a higher score.
- 2) A technician with a comparably higher number of false calls will receive a lower score.
- 3) The score will be equal to 1 if and only if all flaws are detected and there are no false calls.
- 4) The score will be zero if and only if either all unflawed sites are marked as flawed or none of the sites are marked as flawed.
- 5) The score can be computed for an individual technician or for all of the technicians at a base/command as a group.

The procedure for computing the P-score has been programmed on a Texas Instrument TI-59 Calculator and magnetic cards have been provided to the sponsor. The program listing is in Appendix III.

The P- Score Method assigns more importance to detection of flaws, especially the smaller sized flaws and does not assess as severe a penalty for false calls as the contingency coefficient or C- Score Method does. If it is of interest to penalize false calls more heavily we propose a modification of the P-score for a technician by multiplication with a factor that is indicative of the relative position of the technician's false calls in the distribution of false calls for all of the technicians. If the false calls for a technician is at the high end of the distribution his multiplication factor will be small, and the factor will be large when the number of false calls is small. The maximum value of the multiplication factor is 1 when a technician's false calls is the least among all the technicians. The computational formula for the multiplication factor is the following. Let F_T be the number of false calls for technician T. Then, the multiplication factor for the technician, say M_T is

$$M_T = \frac{\text{No. of Technicians With False Calls At Least As High As } F_T}{\text{Total Number of Technicians}}$$

We have constructed two tables, Tables 11 and 12, one for each of the NDI techniques, of the factor values corresponding to all possible values for the number of false calls. All that needs to be done to compute the modified probability score (MP-Score) for a technician T is:

Step 1: Compute the P score for the technician. *

Step 2: Look up the multiplication factor M_T corresponding to his number of false calls F_T from Table 1 or Table 2.

Step 3: Compute $MP\text{-Score} = M_T \times P\text{-Score}$.

A second task of our project is to devise a scheme for defining proficiency classes such as poor, fair, good, excellent, etc., for technicians. We propose the use of the quantiles of the distribution of probability scores or the modified probability scores for all the technicians (126 for the ultrasonic and 134 for the eddy-current) participating in the program. Specifically, a technician with a score below the 25th quantile will receive a D-grade (poor or extremely limited), a C (fair or partially proficient) if the score is between the 25th and 50th quantiles, a B (good or competent) for a score between the 50th and 75th quantiles, and an A (excellent or highly proficient) if the score exceeds the 75th quantile. This grading scheme can be applied to the contingency scores also. The 25th, 50th and 75th quantiles (Q_{25}, Q_{50}, Q_{75}) of the distributions of probability scores, modified probability scores and the contingency scores and the associated grading schemes are presented in Tables 1-6 below.

Table 1

Quantiles Of The Distribution of Probability Scores
Ultrasonic Method

Quantile	Value	Proficiency Grade Limits	Proficiency Grade
Q25	.373	$0 < \text{score} \leq .373$	D
Q50	.485	$.373 < \text{score} \leq .485$	C
Q75	.588	$.485 < \text{score} \leq .588$	B
		$\text{score} > .588$	A

Table 2

Quantiles of The Distribution of Probability Scores
Eddy-Current Method

Quantile	Value	Proficiency Grade Limits	Proficiency Grade
Q25	.614	$0 < \text{score} \leq .614$	D
Q50	.764	$.614 < \text{score} \leq .764$	C
Q75	.854	$.764 < \text{score} \leq .854$	B
		$\text{score} > .854$	A

Table 3

Quantiles Of The Distribution of Modified Probability Scores
Ultrasonic Method

Quantile	Value	Proficiency Grade Limits	Proficiency Grade
Q25	.111	$0 < \text{score} \leq .111$	D
Q50	.224	$.111 < \text{score} \leq .224$	C
Q75	.350	$.224 < \text{score} \leq .350$	B
		$\text{score} > .350$	A

Table 4

Quantile Of The Distribution Of Modified Probability Scores
Eddy-Current Method

Quantile	Value	Proficiency Grade Limits	Proficiency Grade
Q25	.167	$0 < \text{score} \leq .167$	D
Q50	.386	$.167 < \text{score} \leq .386$	C
Q75	.595	$.386 < \text{score} \leq .595$	B
		$\text{score} > .595$	A

Table 5

Quantiles Of The Distribution of Contingency Scores
Ultrasonic Method

Quantile	Value	Proficiency Grade Limits	Proficiency Grade
Q25	0.37	$0 < \text{score} \leq 0.37$	D
Q50	2.17	$0.37 < \text{score} \leq 2.17$	C
Q75	3.15	$2.17 < \text{score} \leq 3.15$	B
		$\text{score} > 3.15$	A

Table 6

Quantiles Of The Distribution of Contingency Scores
Eddy-Current Method

Quantile	Value	Proficiency Limits	Proficiency Grade
Q25	4.29	$0 < \text{score} \leq 4.29$	D
Q50	6.48	$4.29 < \text{score} \leq 6.48$	C
Q75	7.57	$6.48 < \text{score} \leq 7.57$	B
		$\text{score} > 7.57$	A

Histograms of the scores using the three different scoring methods are in Figures 1-6.

An approach similar to the one used to determine proficiency grades may be adopted to determine if a technician's "false calls" are in the acceptable, marginal or unacceptable range. We propose the use of the 50th and 75th quantiles of the distribution of false calls to set the range limits as shown in Table 7 below. If these limits are too severe, the 75th and 90th quantiles (see Table 10) may be used to define the limits.

Table 7
False Calls (FC) Acceptance Limits

NDI Technique	Acceptable Limits	Marginal Limits	Unacceptable Limits
Ultrasonic	$0 < FC \leq 31$	$31 < FC \leq 48$	$FC > 48$
Eddy-Current	$0 < FC \leq 11$	$11 < FC \leq 23$	$FC > 23$

The results of our computations of the probability scores, the modified probability scores, the associated linear ranking of the technicians within an AF base and the proficiency grades are presented in Tables 13-43. We have included in these tables the corresponding data for the contingency coefficient method for comparative purposes. Note that these contingency scores do not agree, in some cases, with the scores computed by the Lockheed Georgia Company because of the differences in the summarized values. We also include in this report some additional analyses we performed with the data from the original scoring sheets. Table 8 contains the statistics of the false call distributions. Detection probabilities together with 90% confidence intervals for the four flaw size categories are in Table 9. Table 10 is similar to Table 11 except that the probabilities and confidence intervals apply to each individual flaw size. A breakdown of detection probabilities for each of the AF commands is in Appendix I and Appendix II contains a hole by hole analysis for each of the T-bars and splice plates used in the test racks.

REFERENCES

- [1] "Reliability of Nondestructive Inspections --Final Report", Report No. SA-ALC/MNE 76-6-38-1, Dec. 1978.
- [2] "Test Plan - NDI Technical Proficiency", November 1980.
- [3] "Treatment of False Calls in Evaluating Nondestructive Inspection Proficiency" by Henry Sharp Jr., and William H. Sproat.

TABLE 8

STATISTICS OF FALSE CALLS

	<u>Ultrasonic</u>	<u>Eddy-Current</u>
MEAN X	36.90	17.3
ST·DEV S	23.50	18.9
X + S	60.4	36.1
X + 2S	83.9	55.0
X + 3S	107.0	73.8
MIN	1	0
MAX	111	110
Q25	20	4
Q50	31	11
Q75	48	23
Q90	73	40

TABLE 9

90% Confidence Intervals for Probability of Flaw
Detection by Flaw Size Categories

<u>Flaw Size Category</u>	<u>ULTRASONIC</u>			<u>EDDY-CURRENT</u>		
	<u>Detection Probability</u>	<u>Lower Bound</u>	<u>Upper Bound</u>	<u>Detection Probability</u>	<u>Lower Bound</u>	<u>Upper Bound</u>
Small	.315	.281	.349	.540	.518	.562
Medium	.499	.477	.521	.752	.733	.771
Large	.637	.615	.659	.897	.879	.915
X-Large	.735	.706	.764	.897	.875	.919
No Flaws	.687	.681	.693	.852	.847	.857

TABLE 10
90% Confidence Intervals for the Probability of
Flaw Detection by Flaw Size

Flaw Size (Inches)	EDDY - CURRENT				ULTRASONIC			
	No. of Detection Opportunities	Probability of Detection	Lower Bound	Upper Bound	No. of Detection Opportunities	Probability of Detection	Lower Bound	Upper Bound
.03	288	.472	.429	.525	60	.450	.372	.575
.04	850	.554	.527	.583	362	.298	.264	.342
.05	202	.574	.523	.636	82	.293	.235	.396
.08	283	.774	.736	.817	178	.399	.348	.468
.09	596	.760	.732	.790	653	.525	.495	.559
.10	524	.739	.709	.772	497	.509	.475	.548
.11	71	.704	.629	.801	58	.414	.338	.542
.15	120	.825	.773	.885	223	.565	.516	.624
.16	429	.900	.877	.924	656	.657	.628	.689
.17	255	.925	.899	.953	298	.678	.637	.725
.18	0	0	0	0	67	.537	.458	.652
.19	0	0	0	0	16	.500	.387	.758
.23	0	0	0	0	56	.643	.558	.760
.24	131	.878	.834	.927	120	.742	.683	.812
.25	208	.913	.882	.946	195	.749	.702	.803
.26	148	.892	.853	.935	148	.723	.668	.787
.27	12	.917	.794	1.000	98	.776	.714	.850
.28	0	0	0	0	13	.692	.554	.936
.30	37	.892	.819	.980	0	0	0	0

TABLE 11

TABLE OF MULTIPLICATION FACTORS
FOR COMPUTING MODIFIED PROBABILITY
SCORES FROM THE PROBABILITY SCORES

FACTORS FOR ULTRASONIC SCORES

FALSE CALLS	MULTIPLICATION FACTOR
0	1.000
1	1.000
2	0.992
3	0.976
4	0.968
5	0.960
6	0.937
7	0.929
8	0.929
9	0.905
10	0.889
11	0.873
12	0.873
13	0.865
14	0.865
15	0.865
16	0.857
17	0.849
18	0.841
19	0.825
20	0.794
21	0.746
22	0.730
23	0.706
24	0.690
25	0.659
26	0.643
27	0.619
28	0.587

FAL SE CALLS	MULTIPLICATION FACTOR
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29	C.587
30	C.563
31	C.524
32	C.500
33	C.468
34	C.444
35	C.444
36	C.429
37	C.429
38	C.421
39	C.421
40	C.397
41	C.373
42	C.349
43	C.349
44	C.333
45	C.317
46	C.302
47	C.286
48	C.262
49	C.254
50	C.230
51	C.206
52	C.190
53	C.183
54	C.183
55	C.175
56	C.175
57	C.175
58	C.159

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

59	C.159
60	C.151
61	C.151
62	C.143
63	C.143
64	C.143
65	C.143
66	C.143
67	C.135
68	C.127
69	C.127
70	C.119
71	C.111
72	C.111
73	C.111
74	C.095
75	C.087
76	C.079
77	C.071
78	C.064
79	C.056
80	C.056
81	C.056
82	C.056
83	C.056
84	C.056
85	C.048
86	C.048
87	C.040
88	C.040

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

89	C.040
90	C.040
91	C.040
92	C.040
93	C.040
94	C.040
95	C.032
96	C.032
97	C.032
98	C.024
99	C.016
100	C.016
101	C.016
102	C.016
103	C.016
104	C.008
105	C.008
106	C.008
107	C.008
108	C.008
109	C.008
110	C.008
111	C.008
112	C.000
113	C.000
114	C.000
115	C.000
116	C.000
117	C.000
118	C.000

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

119	C.00C
120	C.00C
121	C.00C
122	C.00C
123	C.00C
124	C.00C
125	C.00C
126	C.00C

TABLE 12

TABLE OF MULTIPLICATION FACTORS
FOR COMPUTING MODIFIED PROBABILITY
SCORES FROM THE PROBABILITY SCORES

FACTORS FOR EDDY-CURRENT SCORES

FALSE CALLS	MULTIPLICATION FACTOR
0	1.000
1	0.933
2	0.873
3	0.851
4	0.784
5	0.694
6	0.664
7	0.627
8	0.604
9	0.567
10	0.545
11	0.507
12	0.493
13	0.478
14	0.448
15	0.440
16	0.418
17	0.396
18	0.381
19	0.358
20	0.328
21	0.313
22	0.291
23	0.269
24	0.254
25	0.246
26	0.239
27	0.231
28	0.231

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

29	C.209
30	C.179
31	C.179
32	C.172
33	C.149
34	C.149
35	C.149
36	C.134
37	C.127
38	C.127
39	C.119
40	C.119
41	C.104
42	C.104
43	C.104
44	C.104
45	C.104
46	C.082
47	C.075
48	C.075
49	C.075
50	C.075
51	C.067
52	C.067
53	C.067
54	C.067
55	C.060
56	C.052
57	C.052
58	C.052

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

59	C.052
60	C.045
61	C.037
62	C.037
63	C.037
64	C.037
65	C.037
66	C.030
67	C.030
68	C.030
69	C.030
70	C.030
71	C.030
72	C.030
73	C.030
74	C.030
75	C.022
76	C.022
77	C.022
78	C.022
79	C.022
80	C.022
81	C.022
82	C.022
83	C.022
84	C.022
85	C.022
86	C.022
87	C.022
88	C.022

FALSE CALLS	MULTIPLICATION FACTOR
----------------	--------------------------

89	C.022
90	C.022
91	C.022
92	C.022
93	C.022
94	C.022
95	C.015
96	C.015
97	C.015
98	C.015
99	C.015
100	C.015
101	C.015
102	C.015
103	C.015
104	C.015
105	C.015
106	C.015
107	C.015
108	C.015
109	C.015
110	C.015
111	C.007
112	C.007
113	C.007
114	C.007
115	C.007
116	C.007
117	C.007
118	C.007

FALSE CALLS	MULTIPLICATION FACTOR
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119	0.007
120	0.007
121	0.007
122	0.007
123	0.007
124	0.007
125	0.007
126	0.007
127	0.007
128	0.007
129	0.007
130	0.007
131	0.007
132	0.007
133	0.007
134	0.007

The tables following this page contain the technician scores, their linear ranking and their proficiency grades. The nomenclature used in these tables is:

P-Score = Probability Score
MP-Score = Modified Probability Score
C-Score = Contingency Coefficient Score
S = Score
R = Linear Ranking of a Technician Within the Base
G = Proficiency Grade

ULTRASONIC METHOD

TABLE 13

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: ALC

A.F.BASE: B1

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T113	0.673	2	A	0.673	1	A	8.71	1	A	1
T026	0.651	3	A	0.646	2	A	8.27	2	A	2
T018	0.537	6	B	0.533	3	B	7.81	3	A	2
T041	0.536	7	B	0.498	5	B	6.66	4	A	8
T087	0.585	4	B	0.497	6	B	5.89	5	A	17
T108	0.429	9	C	0.402	8	C	5.72	6	A	6
T109	0.765	1	A	0.528	4	B	5.64	7	A	24
T021	0.420	10	C	0.390	9	C	5.35	8	A	8
T098	0.550	5	B	0.476	7	C	4.84	9	A	15
T049	0.350	11	D	0.311	11	D	3.87	10	A	10
T073	0.509	8	B	0.351	10	D	3.54	11	A	24

TABLE 14

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: ALC

A.F.BASE: B2

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T134	C.656	4	A	0.647	2	A	7.63	1	A	8
T144	C.664	5	A	0.590	3	A	7.08	2	A	10
T133	C.452	16	C	0.438	7	C	6.65	3	A	4
T043	C.838	1	A	0.652	1	A	6.17	4	A	19
T038	C.432	18	C	0.415	9	C	5.92	5	A	5
T031	C.707	2	A	0.584	4	B	5.40	6	A	19
T011	C.634	7	A	0.463	6	C	5.07	8	A	22
T061	C.373	20	D	0.358	13	D	5.10	7	A	5
T010	C.602	10	A	0.425	8	C	4.71	9	A	23
T121	C.639	6	A	0.360	12	D	4.56	10	A	30
T090	C.472	15	C	0.412	10	C	4.43	11	A	12
T020	C.623	8	A	0.472	5	C	4.39	12	A	21
T117	C.702	3	A	0.368	11	D	4.21	13	A	31
T046	C.578	11	B	0.183	20	D	2.84	15	B	45
T135	C.624	9	A	0.312	14	D	3.06	14	B	32
T093	C.532	12	B	0.224	19	D	2.23	18	B	39
T142	C.313	23	D	0.269	16	D	2.71	16	B	16
T145	C.323	21	D	0.243	18	D	2.34	17	B	22
T122	0.447	17	C	0.252	17	D	2.15	19	C	30
T152	C.509	13	B	0.287	15	D	1.87	20	C	30
T029	C.421	19	C	0.027	22	D	0.00	21	D	78
T148	C.326	22	D	0.129	21	D	0.00	21	D	40
T013	C.478	14	C	0.008	23	D	0.00	21	D	103

TABLE 15

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F. COMPAND: ANG

A.F. BASE: B3

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T105	C.584	7	B	0.218	8	D	3.14	4	B	41
T103	C.551	8	B	0.175	10	D	2.31	9	B	45
T149	C.487	10	B	0.387	1	C	2.84	5	B	20
T039	C.392	11	C	0.252	6	D	2.51	8	B	26
T022	C.733	3	A	0.291	4	D	4.00	1	A	40
T120	C.639	5	A	0.320	3	D	3.33	3	B	32
T015	C.771	2	A	0.232	7	D	2.24	11	B	46
T009	C.527	9	B	0.364	2	D	3.81	2	A	24
T095	C.392	11	C	0.258	5	D	2.61	7	B	25
T050	C.242	13	D	0.150	11	D	0.00	13	D	27
T058	C.709	4	A	0.203	9	D	2.70	6	B	47
T057	C.636	6	A	0.081	13	D	1.51	12	C	69
T080	C.779	1	A	0.111	12	D	2.26	10	B	66

TABLE 16

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: ATC

A.F.BASE: B4

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T019	C.373	2	D	0.337	1	D	3.73	1	A	9
T030	C.406	1	C	0.335	2	D	3.52	2	B	19

TABLE 17

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F. COMMAND: ATC

A.F. BASE: B5

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T052	C.508	4	B	0.371	1	D	2.63	1	B	22
T078	C.233	7	D	0.280	2	D	2.47	3	B	18
T130	C.575	2	B	0.132	4	D	2.49	2	B	50
T114	C.517	3	B	0.078	6	D	1.75	4	C	61
T110	C.661	1	A	0.136	3	D	1.62	5	C	51
T045	C.363	6	D	0.095	5	D	0.49	6	C	48
T137	C.475	5	C	0.034	7	D	0.00	7	D	77

TABLE 18

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: ATC

A.F.BASE: 86

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T081	C.472	4	C	0.375	1	C	3.13	1	B	20
T107	C.749	1	A	0.226	3	D	3.04	2	B	46
T047	C.357	5	D	0.266	2	D	2.44	3	B	21
T146	C.525	2	B	0.133	5	D	1.49	4	C	49
T141	C.505	3	B	0.088	6	D	0.94	5	C	57
T036	C.342	6	D	0.152	4	D	0.00	6	D	35
T023	C.337	7	D	0.086	7	D	0.00	6	D	49

TABLE 19

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: MAC

A.F.BASE: B7

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T092	C.454	4	B	0.408	1	C	3.52	1	B	19
T074	C.789	1	A	0.263	3	D	2.92	2	B	44
T111	C.438	6	C	0.271	2	D	2.14	3	C	27
T051	C.512	2	B	0.191	5	D	0.99	4	C	41
T017	C.350	7	C	0.130	9	D	0.50	6	C	44
T091	C.454	5	C	0.202	4	D	0.89	5	C	35
T064	C.276	9	D	0.138	8	D	0.00	9	D	32
T132	C.507	3	B	0.089	10	D	0.14	7	D	57
T085	C.252	8	D	0.153	7	D	0.04	8	D	31
T106	C.249	10	D	0.160	6	D	0.00	9	D	26

TABLE 20

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: MAC

A.F.BASE: 88

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T065	C.621	3	A	0.350	1	D	4.30	1	A	30
T125	C.514	9	B	0.130	3	D	2.29	2	B	49
T099	C.726	1	A	0.098	5	D	2.20	3	B	67
T097	C.589	6	B	0.065	6	D	1.82	4	C	73
T014	C.675	2	A	0.064	7	D	1.47	5	C	74
T086	C.617	4	A	0.049	9	D	1.34	6	C	76
T088	C.533	8	B	0.017	12	D	1.24	7	C	97
T089	C.591	5	A	0.033	10	D	1.11	8	C	84
T025	C.431	12	C	0.150	2	D	0.84	9	C	43
T035	C.387	13	C	0.111	4	D	0.83	10	C	47
T040	C.511	10	B	0.020	11	D	0.37	11	D	94
T076	C.570	7	B	0.063	8	D	0.00	12	D	75
T083	C.467	11	C	0.011	13	D	0.00	12	D	98
T028	C.254	14	D	0.002	14	D	0.00	12	D	111

TABLE 21

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: SAC

A.F.BASE: B9

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T001	C.351	4	D	0.226	4	D	1.94	2	C	26
T044	C.375	3	C	0.262	2	D	1.84	3	C	24
T056	C.421	1	C	0.296	1	D	2.23	1	B	23
T104	C.308	5	D	0.203	5	D	1.75	4	C	25
T066	C.380	2	C	0.235	3	D	1.56	5	C	27

TABLE 22

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: SAC

A.F.BASE: B10

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T007	C.513	1	B	0.240	2	D	2.44	1	B	33
T024	C.397	2	C	0.072	3	D	0.00	3	D	54
T055	C.349	3	D	0.294	1	D	1.86	2	C	18

TABLE 23

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: SAC

A.F.BASE: 811

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T002	C.435	1	C	0.065	1	D	0	1	D	59

TABLE 24

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: SAC

A.F.BASE: 812

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T006	C.677	1	A	0.156	2	D	2.76	2	B	50
T067	C.089	6	D	0.080	5	D	0.35	4	D	9
T077	C.520	3	B	0.120	3	D	0.62	3	C	50
T102	C.256	5	D	0.090	4	D	0.00	5	D	43
T037	C.573	2	B	0.027	6	D	0.00	5	D	86
T053	C.510	4	B	0.405	1	C	3.69	1	A	20

TABLE 25

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNICIAN: ULTRASONIC

A.F.COMMAND: SAC

A.F.BASE: 813

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T042	C.611	1	A	0.378	1	C	4.31	1	A	27
T072	C.588	2	B	0.247	2	D	3.03	2	B	39
T060	C.485	3	C	0.227	3	D	2.17	3	B	33
T034	C.395	5	C	0.195	4	D	1.13	4	C	32
T123	C.448	4	C	0.167	5	D	0.99	5	C	41

TABLE 26

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: TAC

A.F.BASE: 814

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	F	G	S	R	G	
T084	C.475	3	C	0.224	3	D	2.17	1	B	33
T147	C.622	1	A	0.074	6	D	1.16	2	C	70
T143	C.525	2	B	0.227	2	D	0.74	3	C	37
T151	C.402	6	C	0.236	1	D	0.50	4	C	29
T032	C.420	5	C	0.080	5	D	0.21	5	D	52
T150	C.475	4	C	0.041	8	D	0.00	6	D	75
T008	C.165	8	D	0.065	7	D	0.00	6	D	39
T094	C.234	7	D	0.138	4	D	0.00	6	D	29

TABLE 27

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND: TAC

A.F.BASE: B15

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T096	0.667	1	A	0.651	1	A	7.36	1	A	3
T048	0.458	3	C	0.363	2	D	3.96	2	A	20
T127	0.321	5	D	0.168	4	D	1.22	3	C	31
T071	0.147	6	D	0.083	6	D	0.00	5	D	30
T136	0.511	2	B	0.146	5	D	0.29	4	D	47
T005	0.334	4	D	0.196	3	D	0.00	5	D	29

TABLE 28

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: ULTRASONIC

A.F.COMMAND:TAC

A.F.BASE: B16

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T131	C.299	2	D	0.287	1	D	4.51	1	A	5
T062	C.251	4	D	0.199	2	D	0.32	2	D	20
T082	C.333	1	D	0.069	5	D	0.00	3	D	51
T139	C.280	3	D	0.111	4	D	0.00	3	D	40
T063	C.153	5	D	0.121	3	D	0.00	3	D	20

EDDY-CURRENT METHOD

TABLE 29

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ALC

A.F.BASE: B1

TECH CODE	P SCORE			P.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T109	C.901	2	A	0.706	1	C	8.59	1	A	4
T140	C.782	3	B	0.666	2	C	7.66	2	A	3
T004	C.761	5	C	0.647	3	C	7.43	3	B	3
T073	C.781	4	B	0.443	5	D	6.82	4	B	9
T101	C.605	8	D	0.474	4	D	6.00	5	C	4
T128	C.906	1	A	0.162	7	D	5.56	6	C	31
T033	C.716	7	C	0.342	6	D	5.48	7	C	13
T116	C.426	13	D	0.089	10	D	1.83	11	D	29
T003	C.750	6	C	0.045	12	D	2.75	8	D	55
T115	C.583	9	D	0.100	9	D	2.38	9	D	32
T054	C.455	12	D	0.122	8	D	2.11	10	D	23
T125	C.571	10	D	0.072	11	D	1.62	12	D	38
T012	C.366	14	D	0.027	13	D	0.00	14	D	50
T112	C.550	11	D	0.012	14	D	1.07	13	D	94
T079	C.280	15	D	0.004	15	D	0.00	14	D	110

TABLE 30

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ALC

A.F.BASE: B2

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T010	C.861	20	C	0.518	13	D	6.50	17	B	4
T013	C.481	24	D	0.212	24	D	3.60	24	D	15
T020	C.727	17	C	0.287	21	D	4.96	23	C	17
T029	C.717	18	C	0.390	19	D	5.92	20	C	10
T122	C.649	21	C	0.509	14	D	6.50	17	B	4
T144	C.637	22	C	0.637	8	C	7.23	13	B	C
T148	C.922	4	A	0.213	23	D	5.82	21	C	26
T090	C.869	6	A	0.739	3	D	8.50	3	A	3
T100	C.836	12	B	0.730	4	B	8.54	4	A	2
T135	C.933	3	A	0.619	9	C	8.47	5	A	6
T046	C.847	10	B	0.721	5	B	8.34	6	A	3
T038	C.771	15	B	0.771	1	B	8.33	7	A	C
T011	C.861	8	A	0.469	15	D	7.38	12	D	10
T152	C.760	16	C	0.595	10	C	7.46	11	B	4
T142	C.940	1	A	0.463	16	D	7.57	9	A	12
T133	C.940	1	A	0.463	16	D	7.57	9	A	12
T061	C.693	19	C	0.543	12	D	6.99	15	D	4
T145	C.782	14	B	0.444	18	D	6.57	16	B	9
T134	C.637	22	C	0.594	11	C	7.19	14	B	1
T059	C.814	13	B	0.638	7	C	7.92	8	A	4
T043	C.901	5	A	0.706	6	C	8.59	2	A	4
T117	C.869	6	A	0.759	2	B	8.75	1	A	2
T121	C.857	9	D	0.230	22	D	5.80	22	C	23
T016	C.841	11	B	0.320	20	D	6.10	19	C	18

TABLE 31

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ANG

A.F.BASE: 03

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T103	C.869	3	A	0.739	1	B	8.56	1	A	3
T009	C.764	9	C	0.365	9	D	6.48	10	B	13
T105	C.847	5	B	0.721	2	B	8.34	2	A	3
T118	C.830	6	B	0.580	6	C	7.90	3	A	5
T039	C.692	11	C	0.692	3	C	7.90	4	A	0
T120	C.770	8	B	0.655	4	C	7.89	5	A	3
T068	C.591	14	D	0.591	5	C	7.23	6	B	0
T075	C.518	16	D	0.282	11	D	4.61	13	C	10
T022	C.936	1	A	0.37	8	D	6.95	7	B	17
T058	C.933	2	A	0.334	10	D	6.72	9	B	19
T057	C.737	10	C	0.446	7	D	6.74	8	B	8
T080	C.854	4	B	0.204	12	D	5.51	11	C	26
T027	C.564	15	D	0.177	13	D	3.10	14	D	21
T015	C.417	17	D	0.131	15	D	2.32	15	D	21
T095	C.800	7	B	0.167	14	D	4.72	12	C	29
T149	C.612	13	D	0.082	16	D	2.31	16	D	36
T050	C.005	12	C	0.045	17	D	1.76	17	D	54

TABLE 32

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ATC

A.F.BASE: 64

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T030	C.913	1	A	0.797	1	B	8.97	1	A	2
T019	C.613	4	D	0.256	2	D	4.29	4	C	16
T138	C.738	2	C	0.187	4	D	4.69	3	C	24
T126	C.672	3	C	0.241	3	D	4.72	2	C	19
T124	C.521	5	D	0.152	5	D	2.50	5	D	22

TABLE 33

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ATC

A.F.BASE: 85

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T052	C.907	1	A	0.902	1	A	9.59	1	A	1
T078	C.827	4	B	0.827	2	B	8.55	2	A	0
T110	C.901	2	A	0.544	3	D	7.69	3	A	8
T130	C.478	9	D	0.289	7	D	4.38	7	C	8
T114	C.656	3	A	0.538	4	D	7.61	4	A	7
T137	C.812	5	B	0.358	6	D	5.97	6	C	15
T045	C.794	0	B	0.527	5	D	7.08	5	B	0
T070	C.765	7	B	0.063	8	D	3.11	8	D	40

TABLE 34

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: ATC

A.F.BASE: B0

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T047	C.760	2	C	0.709	1	C	7.88	1	A	1
T146	C.910	1	A	0.496	2	D	7.62	2	A	10
T023	C.738	3	C	0.490	3	D	6.84	3	B	6
T107	C.617	6	C	0.152	5	D	3.29	5	D	25
T036	C.586	7	D	0.210	4	D	3.39	4	D	19
T141	C.714	4	C	0.075	6	D	2.92	6	D	45
T081	C.655	5	C	0.034	7	D	1.15	7	D	59

TABLE 35

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: MAC

A.F.BASE: B7

TECH CODE	P SCORE			A.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T074	0.859	1	A	0.801	1	B	8.75	1	A	1
T091	0.793	4	B	0.550	4	D	7.50	2	B	5
T106	0.614	10	D	0.614	2	C	7.23	3	B	0
T092	0.638	9	C	0.595	3	C	6.96	4	B	1
T111	0.716	7	C	0.475	5	D	6.84	5	B	6
T051	0.727	6	C	0.456	6	D	6.66	6	B	7
T064	0.760	5	C	0.431	7	D	6.57	7	B	9
T132	0.814	3	B	0.413	8	D	6.51	8	B	11
T017	0.844	2	B	0.372	9	D	6.21	9	C	15
T085	0.666	8	C	0.114	10	D	5.17	10	D	32

TABLE 36

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: MAC

A.F.BASE: 88

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T014	C.483	14	D	0.072	14	D	1.32	14	D	35
T097	C.957	1	A	0.692	2	C	9.08	1	A	5
T099	C.912	3	A	0.715	1	C	8.59	2	A	4
T125	C.880	5	A	0.610	4	C	8.19	3	A	5
T076	C.760	10	C	0.646	3	C	7.66	4	A	3
T040	C.828	7	B	0.396	6	D	6.72	5	B	13
T025	C.559	12	D	0.476	5	D	5.97	5	C	3
T065	C.840	6	B	0.276	9	D	5.87	7	C	20
T035	C.769	9	B	0.321	7	D	5.59	8	C	16
T086	C.700	11	C	0.313	8	D	5.34	10	C	14
T083	C.902	4	A	0.094	13	D	4.75	11	C	45
T088	C.943	2	A	0.113	12	D	5.36	9	C	40
T028	C.800	8	B	0.167	11	D	4.72	12	C	29
T089	C.521	13	D	0.198	10	D	2.94	13	D	18

TABLE 37

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: SAC

A.F.BASE: BID

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T007	C.934	1	A	0.732	1	B	8.81	1	A	4
T055	C.553	2	D	0.516	2	D	6.72	2	B	1
T024	C.522	3	D	0.121	3	D	2.19	3	D	28

TABLE 38

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: SAC

A.F.BASE: 811

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T069	C.772	1	B	0.254	1	D	5.37	1	C	20
T119	C.559	2	D	0.129	2	D	2.46	2	D	28

TABLE 39

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: SAC

A.F.BASE: B12

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T037	C.886	4	A	0.886	2	A	9.38	1	A	0
T067	C.902	3	A	0.902	1	A	9.38	1	A	0
T102	C.932	2	A	0.584	3	C	8.31	3	A	7
T006	C.953	1	A	0.341	4	D	6.96	4	B	19
T033	C.880	5	A	0.184	5	D	5.48	5	C	29

TABLE 40

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: SAC

A.F.BASE: B13

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T042	C.965	1	A	0.641	1	C	8.69	1	A	6
T034	C.792	5	B	0.431	2	D	6.66	2	B	10
T072	C.807	4	B	0.386	3	D	6.48	3	B	13
T060	C.838	3	B	0.244	4	D	5.66	4	C	22
T123	C.875	2	A	0.091	5	D	4.48	5	C	45

TABLE 41

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: TAC

A.F.BASE: 814

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T084	C.512	7	D	0.309	4	D	4.94	3	C	8
T032	C.801	1	B	0.335	2	D	5.84	2	C	16
T143	C.700	3	C	0.542	1	D	6.99	1	B	4
T094	C.517	6	D	0.312	3	D	4.38	4	C	8
T008	C.735	2	C	0.110	6	D	3.43	5	D	35
T151	C.548	4	D	0.160	5	D	3.06	6	D	22
T147	C.543	5	D	0.016	8	D	0.00	7	D	74
T150	C.476	8	D	0.018	7	D	0.00	7	D	65

TABLE 42

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: TAC

A.F.BASE: 815

TECH CODE	P SCORE			M.P SCORE			C SCORE			FALSE CALLS
	S	R	G	S	R	G	S	R	G	
T096	C.902	1	A	0.902	1	A	9.38	1	A	0
T048	C.826	3	B	0.771	2	B	8.53	2	A	1
T005	C.760	4	C	0.595	4	C	7.46	3	B	4
T071	C.693	5	C	0.647	3	C	7.42	4	B	1
T127	C.841	2	B	0.320	5	D	6.10	5	C	18
T136	C.560	6	D	0.138	6	D	3.02	6	D	25

TABLE 43

NDI TECHNICIAN PROFICIENCY SCORES

NDI TECHNIQUE: EDDY-CURRENT

A.F.COMMAND: TAC

A.F.BASE: B16

TECH	P SCORE			M.P SCORE			C SCORE			FALSE
CODE	S	R	G	S	R	G	S	R	G	CALLS
T082	C.781	1	B	0.396	1	D	6.51	1	B	11
T131	C.771	2	B	0.242	2	D	5.26	2	C	21
T139	C.615	3	C	0.028	5	D	1.08	3	D	60
T062	C.457	4	D	0.055	4	D	0.66	5	D	40
T063	C.431	5	D	0.074	3	D	0.73	4	D	32

HISTOGRAM OF PROBABILITY SCORES

ULTRASONIC METHOD

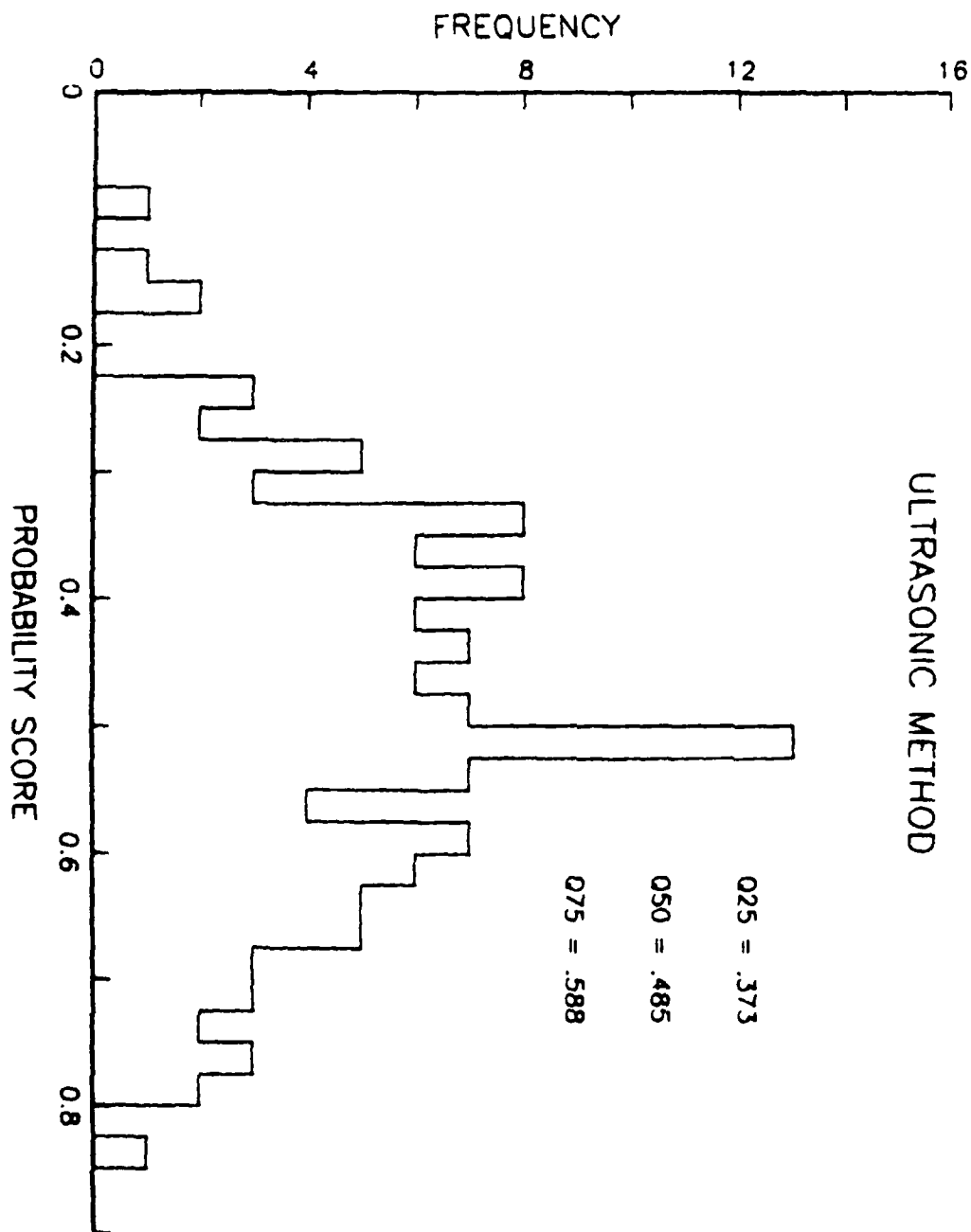


Figure 1

HISTOGRAM OF MODIFIED PROBABILITY SCORES

ULTRASONIC METHOD

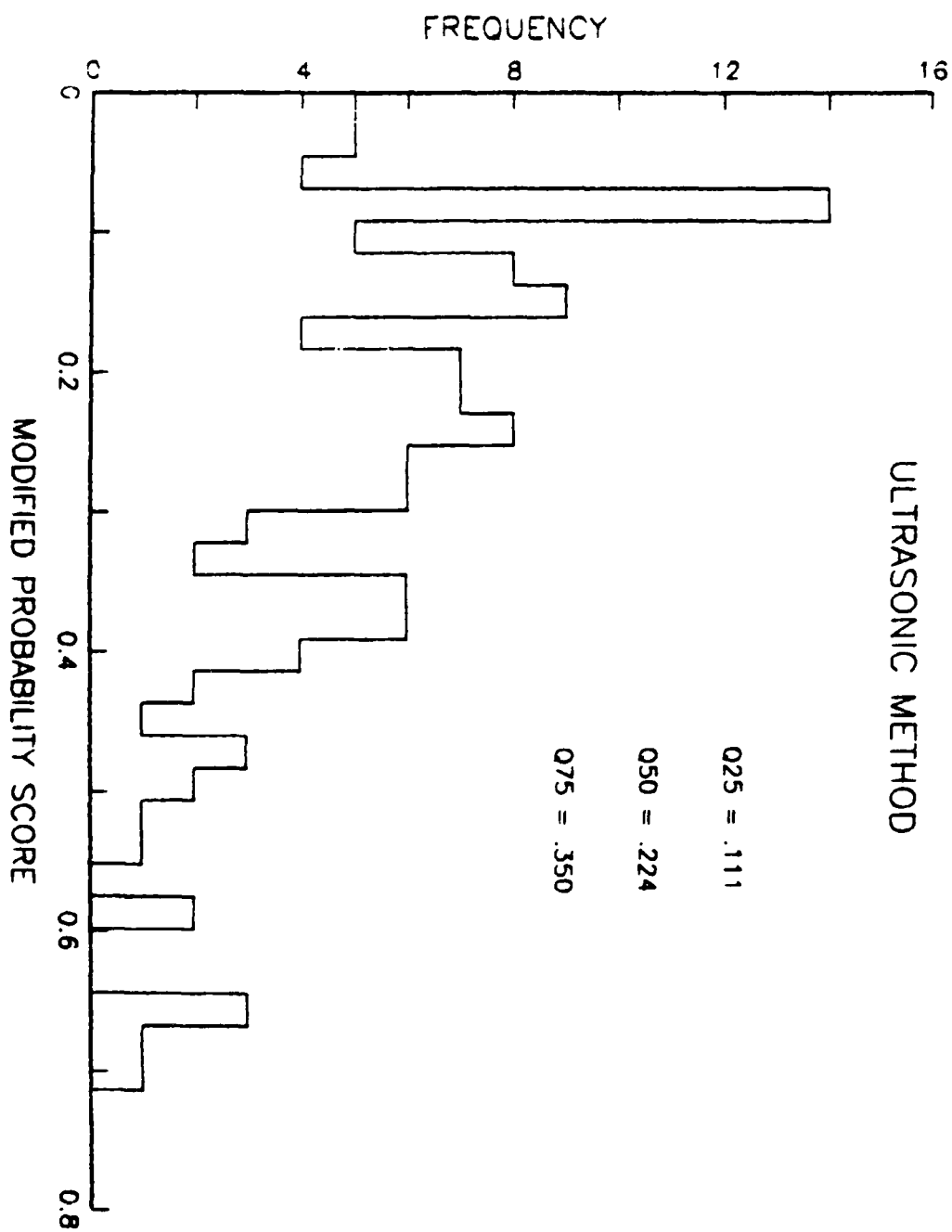


Figure 2

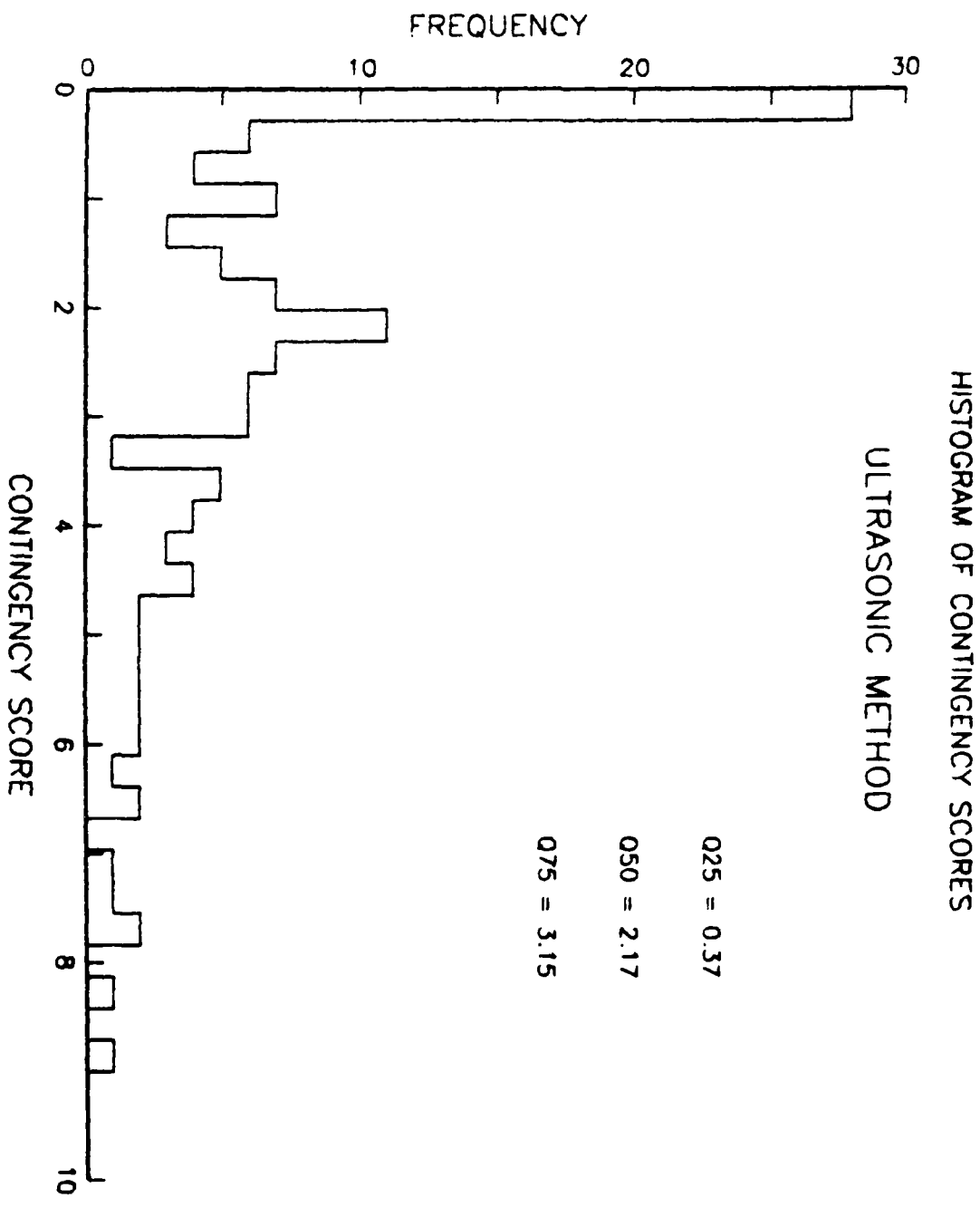


Figure 3

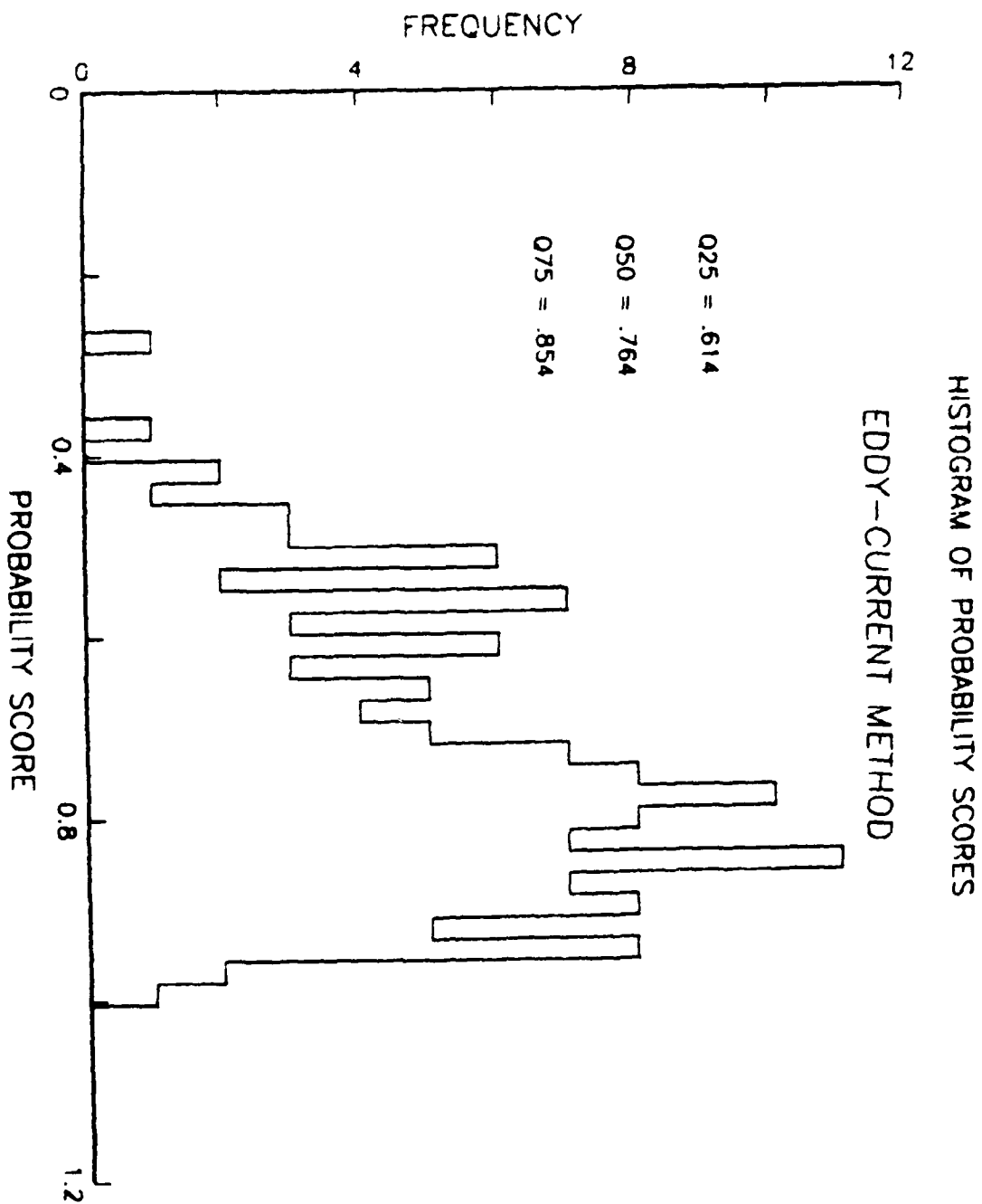


Figure 4

HISTOGRAM OF MODIFIED PROBABILITY SCORES

EDDY-CURRENT METHOD

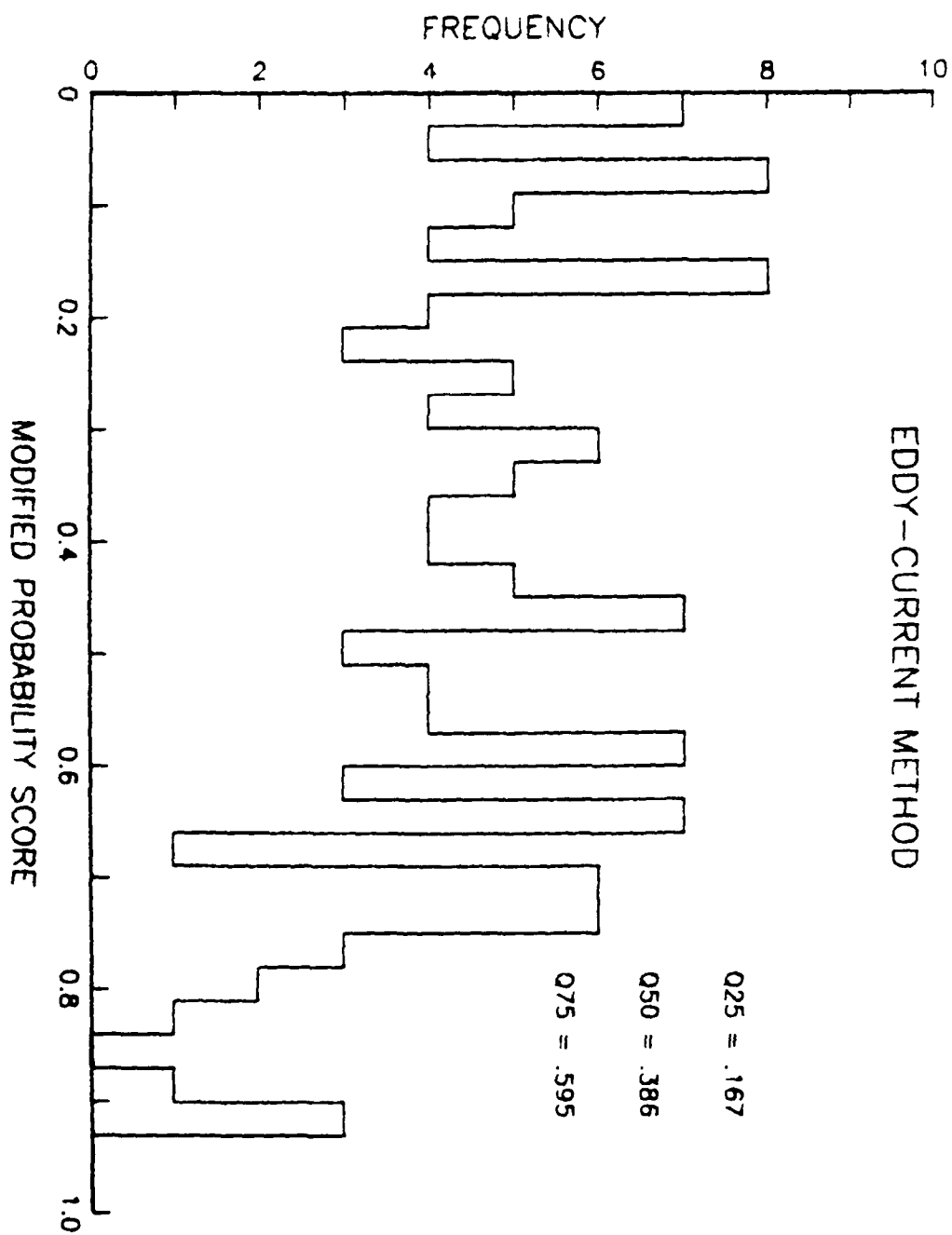


Figure 5

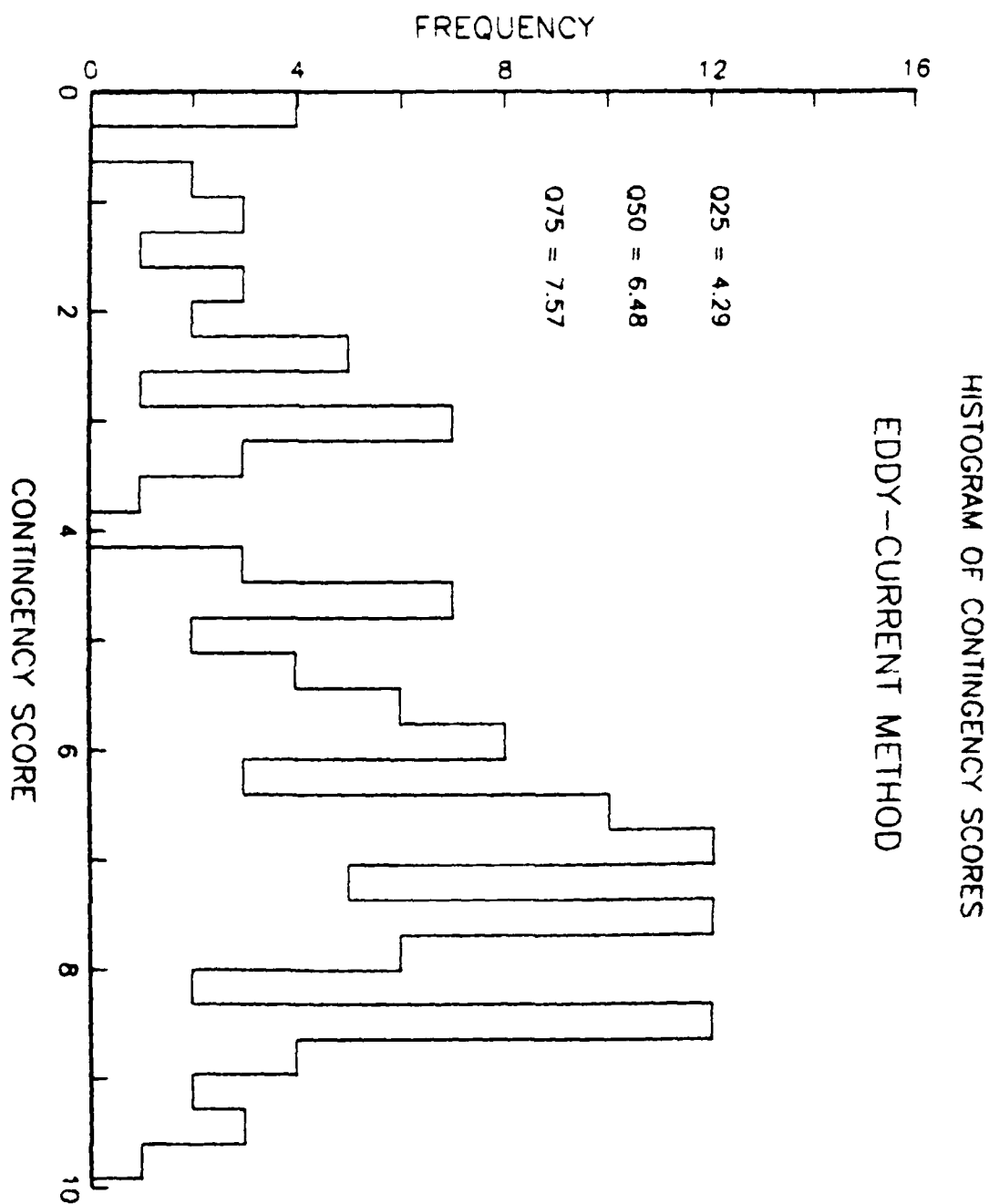


Figure 6

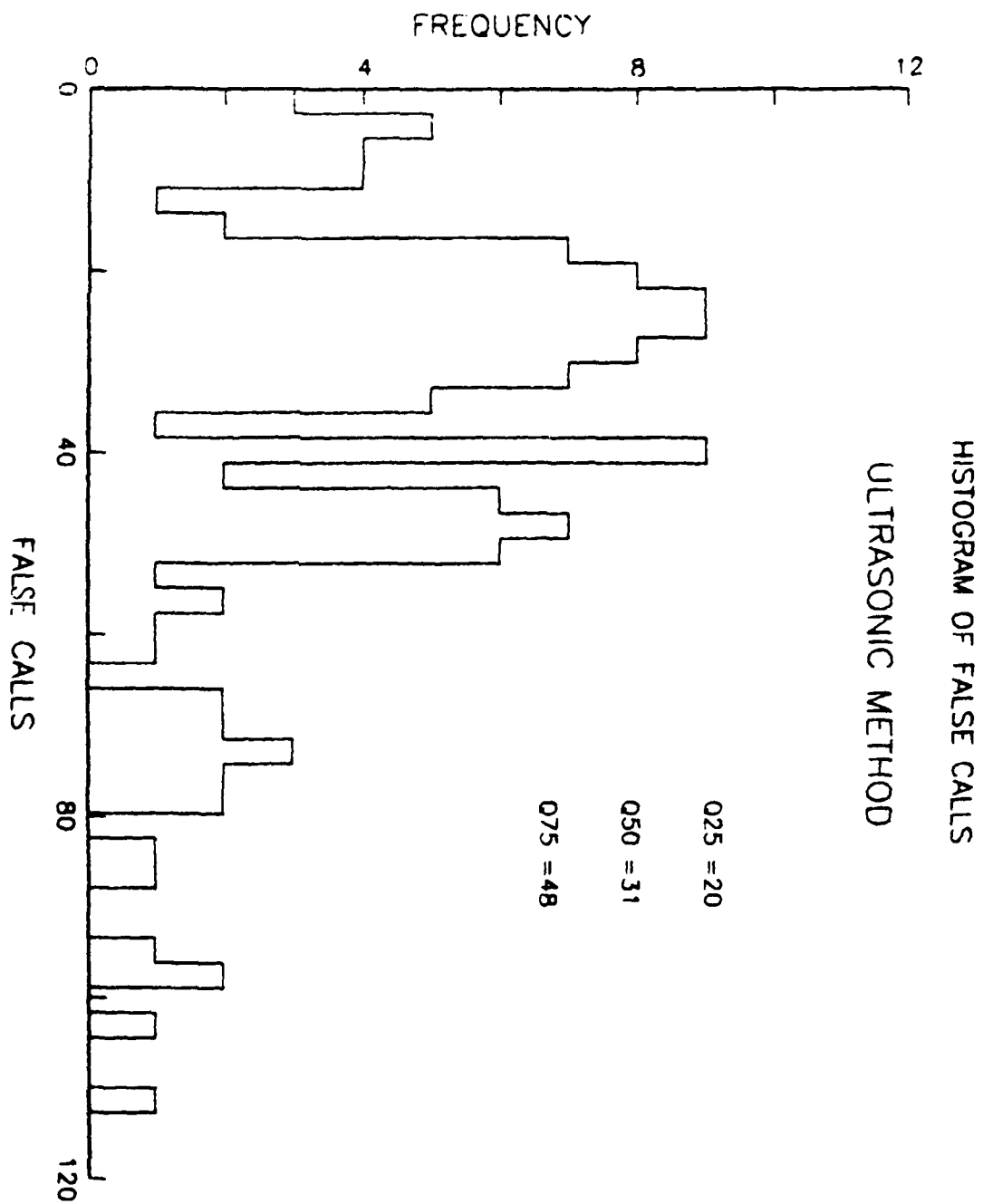


Figure 7

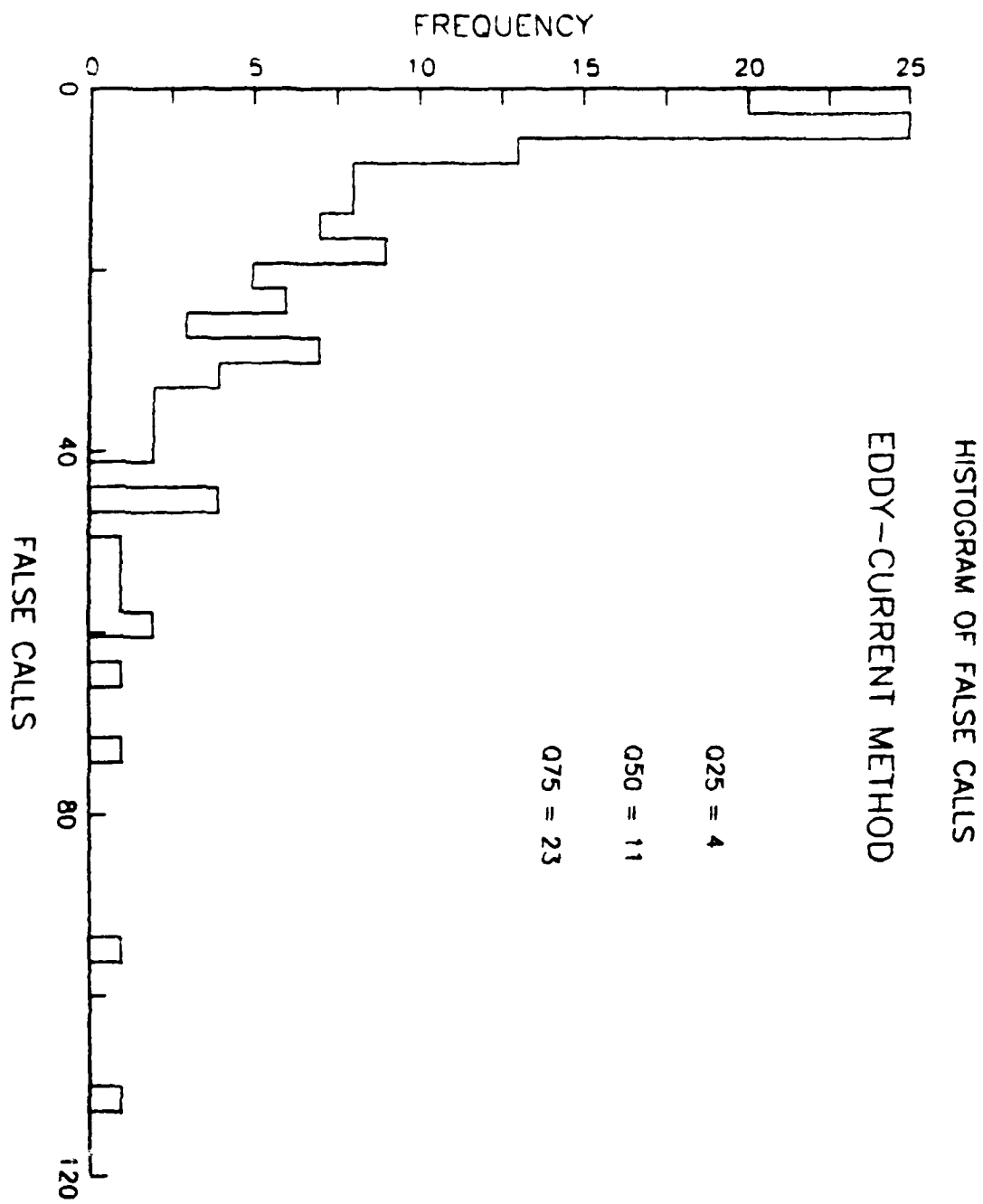


Figure 3

FILE: LABEL DATA A1 NAVAL POSTGRADUATE SCHOOL

APPENDIX I

THE VISUAL SIZE OF EVERY CRACK WAS MEASURED UNDER A MICROSCOPE, GIVING A TOTAL OF 19 DIFFERENT APPARENT SIZES. THESE WERE THEN MORE CRUDELY COLLAPSED INTO FOUR GROUPS, LABELLED (BY US) SMALL, MEDIUM, LARGE AND EXTRALARGE. THE ATTACHED TABLES GIVE COUNTS BY COMMAND AND FOR THE AIR FORCE IN TOTAL OF THE NUMBER OF OPPORTUNITIES (LABELLED CPPS) FOR EACH OF THE APPARENT SIZES, AS WELL AS THE NUMBER OF HITS AND THE PROPORTION OF HITS. THESE ARE TOTALS OVER ALL TECHNICIANS AND OVER THE THREE DIFFERENT TYPES OF PLATES.

ULTRASONIC BY COMMAND

COMMAND 1				COMMAND 2				COMMAND 3			
SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP
.03	0	0		.03	4	7	.571	.03	0	0	
.04	24	102	.235	.04	19	45	.422	.04	18	57	.316
.05	3	34	.205	.05	0	0		.05	1	7	.143
.06	13	34	.382	.06	19	31	.613	.06	10	50	.320
.07	93	133	.695	.07	51	86	.553	.07	29	78	.372
.08	116	193	.601	.08	10	20	.500	.08	20	39	.513
.09	3	14	.214	.09	4	6	.667	.09	5	9	.556
.10	27	34	.794	.10	34	5	.634	.10	43	80	.537
.11	180	238	.756	.11	43	63	.692	.11	12	48	.730
.12	60	68	.882	.12	20	13	.523	.12	26	48	.750
.13	0	0		.13	0	0		.13	0	0	
.14	0	0		.14	0	0		.14	0	0	
.15	0	0		.15	0	0		.15	0	0	
.16	0	0		.16	0	0		.16	0	0	
.17	0	0		.17	0	0		.17	0	0	
.18	0	0		.18	0	0		.18	0	0	
.19	0	0		.19	0	0		.19	0	0	
.20	0	0		.20	0	0		.20	0	0	
.21	13	16	.813	.21	15	19	.789	.21	20	18	.500
.22	60	68	.882	.22	12	11	.923	.22	23	23	.800
.23	13	16	.938	.23	8	13	.615	.23	0	7	.857
.24	57	70	.814	.24	4	7	.571	.24	27	39	.692
.25	0	0		.25	9	13	.692	.25	7	9	.778
.26	0	0		.26	0	0		.26	0	0	
.27	0	0		.27	0	0		.27	0	0	
.28	0	0		.28	0	0		.28	0	0	
.29	0	0		.29	0	0		.29	0	0	
.30	0	0		.30	0	0		.30	0	0	

COMMAND 4				COMMAND 5				COMMAND 6			
SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP
.03	13	24	.542	.03	0	0		.03	10	29	.345
.04	23	60	.383	.04	18	60	.300	.04	0	38	.158
.05	7	12	.583	.05	4	20	.200	.05	3	9	.333
.06	13	24	.542	.06	4	20	.200	.06	0	19	.316
.07	19	132	.598	.07	44	100	.440	.07	47	124	.379
.08	58	108	.537	.08	31	80	.387	.08	18	57	.316
.09	0	0		.09	6	20	.300	.09	0	9	.607
.10	0	0		.10	0	0		.10	0	57	.380
.11	0	0		.11	0	0		.11	0	57	.421
.12	0	0		.12	0	0		.12	0	57	.404
.13	0	0		.13	0	0		.13	0	19	.308
.14	0	0		.14	0	0		.14	0	0	
.15	0	0		.15	0	0		.15	0	0	
.16	0	0		.16	0	0		.16	0	0	
.17	0	0		.17	0	0		.17	0	0	
.18	0	0		.18	0	0		.18	0	0	
.19	0	0		.19	0	0		.19	0	0	
.20	0	0		.20	0	0		.20	0	0	
.21	0	0		.21	0	0		.21	0	0	
.22	0	0		.22	0	0		.22	0	0	
.23	0	0		.23	0	0		.23	0	0	
.24	0	0		.24	0	0		.24	0	0	
.25	0	0		.25	0	0		.25	0	0	
.26	0	0		.26	0	0		.26	0	0	
.27	0	0		.27	0	0		.27	0	0	
.28	0	0		.28	0	0		.28	0	0	
.29	0	0		.29	0	0		.29	0	0	
.30	0	0		.30	0	0		.30	0	0	

EDDY CURRENT BY COMMAND

COMMAND 1				COMMAND 2				COMMAND 3			
SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP
.C3	73	156	.468	.C3	4	9	.444	.C3	6	9	.667
.C4	118	195	.605	.C4	60	115	.504	.C4	73	153	.549
.C5	10	39	.256	.C5	22	42	.524	.C5	41	58	.707
.C8	53	60	.883	.C8	15	17	.882	.C8	36	60	.600
.C9	125	156	.801	.C9	102	122	.836	.C9	64	80	.800
.10	121	174	.695	.10	40	48	.833	.10	33	60	.550
.11	33	39	.846	.11	0	0		.11	11	20	.550
.15	0	0		.15	21	33	.630	.15	41	48	.854
.16	123	137	.898	.16	60	69	.870	.16	19	20	.950
.17	91	97	.938	.17	0	0		.17	49	52	.942
.18	0	0		.18	0	0		.18	0	0	
.19	0	0		.19	0	0		.19	0	0	
.23	0	0		.23	0	0		.23	0	0	
.24	37	39	.949	.24	14	17	.824	.24	8	8	1.00
.25	90	96	.906	.25	21	24	.875	.25	8	8	1.00
.26	18	18	1.00	.26	8	10	.800	.26	29	32	.906
.27	0	0		.27	0	0		.27	11	12	.917
.28	0	0		.28	0	0		.28	0	0	
.30	0	0		.30	17	17	1.00	.30	16	20	.800
COMMAND 4				COMMAND 5				COMMAND 6			
SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP	SIZE	HITS	OPPS	PROP
.C3	34	70	.486	.C3	7	15	.467	.C3	12	29	.414
.C4	89	170	.524	.C4	63	91	.692	.C4	68	142	.479
.C5	0	0		.C5	35	44	.795	.C5	8	19	.421
.C8	41	48	.854	.C8	48	60	.800	.C8	20	38	.526
.C9	65	96	.677	.C9	63	75	.840	.C9	34	67	.507
.10	91	108	.843	.10	28	30	.933	.10	74	104	.712
.11	0	12	.500	.11	0	0		.11	0	0	
.15	11	13	.846	.15	7	7	1.00	.15	19	19	1.00
.16	81	83	.976	.16	49	53	.925	.16	154	67	.806
.17	40	48	.958	.17	27	30	.900	.17	23	28	.821
.18	0	0		.18	0	0		.18	0	0	
.19	0	0		.19	0	0		.19	0	0	
.23	0	0		.23	0	0		.23	0	0	
.24	0	0		.24	31	38	.816	.24	29	29	.862
.25	57	60	.950	.25	13	15	1.00	.25	27	40	.700
.26	36	36	1.00	.26	0	0	.867	.26	28	37	.757
.27	0	0		.27	0	0		.27	0	0	
.28	0	0		.28	0	0		.28	0	0	
.30	0	0		.30	0	0		.30	0	0	

FILE: AFCAT4 CATA A1 NAVAL POSTGRADUATE SCHOOL

FOR THE AIR FORCE IN TCTAL

ULTRASONIC				EDDY CURRENT			
SIZE	HITS	OFFS	PRCP	SIZE	HITS	OPPS	PRCP
.C3	27	60	.450	.C3	136	288	.472
.C4	108	362	.298	.C4	471	850	.554
.C5	24	82	.293	.C5	116	202	.574
.C8	71	178	.355	.C8	219	283	.774
.C9	343	653	.525	.C9	453	596	.760
.C10	253	497	.505	.C10	387	524	.735
.C11	24	58	.414	.C11	50	71	.704
.C15	126	223	.585	.C15	99	120	.825
.C16	431	656	.657	.C16	386	429	.900
.C17	202	298	.678	.C17	236	255	.925
.C18	36	67	.537	.C18	0	0	
.C19	0	16	.500	.C19	0	0	
.C23	36	56	.643	.C23	0	0	
.C24	89	120	.742	.C24	115	131	.876
.C25	140	195	.745	.C25	190	208	.913
.C26	107	148	.723	.C26	132	148	.892
.C27	76	98	.776	.C27	11	12	.917
.C28	9	13	.692	.C28	0	0	
.C30	0	0		.C30	33	37	.892

FILE: LABEL DATA A1 NAVAL POSTGRADUATE SCHOOL

THE VISUAL SIZE OF EVERY CRACK WAS MEASURED UNDER A MICROSCOPE, GIVING A TOTAL OF 19 DIFFERENT APPARENT SIZES. THE NUMBERS OF OPPORTUNITIES, FOR THESE DIFFERENT SIZES, AND THE TYPES OF PLATES THEY OCCURRED ON, WERE NOT IDENTICAL FOR THE SIX COMMANDS. THE FOLLOWING TABLE LISTS THE DIFFERENT APPARENT SIZES FOR THE VARIOUS FLAWS, BY TYPE OF PLATE, FOR THE SIX COMMANDS.

ULTRASONIC
COMMAND 1

SIZE	CAPS		PROP	SPLICE		PROP	TEAR		PROP
	HITS	OPFS		HITS	CPFS		HITS	CPFS	
.03	0	0		0	0		0		
.04	0	0		18	68	.265	0	34	.176
.05	9	34	.265	0	0		13	34	.382
.08	42	68	.618	51	65	.785	17	34	.500
.10	37	68	.544	62	91	.681	17	34	.500
.11	0	0		3	14	.214	20	34	.588
.15	27	34	.794	0	0		0	0	
.16	51	68	.750	109	136	.801	0	0	
.17	28	34	.824	32	34	.541	0	0	
.18	0	0		0	0		0	0	
.19	0	0		0	0		0	0	
.23	0	0		0	0		0	0	
.24	0	0		13	16	.813	0	0	
.25	30	34	.882	30	34	.682	0	0	
.26	15	0		15	16	.538	0	0	
.27	25	34	.735	32	36	.889	0	0	
.28	0	0		0	0		0	0	

COMMAND 2

SIZE	CAPS		PROP	SPLICE		PROP	TEAR		PROP
	HITS	OPFS		HITS	CPFS		HITS	CPFS	
.03	0	0		4	7	.571	0	0	
.04	6	13	.462	5	13	.263	8	13	.615
.05	0	0		0	0		0	0	
.08	10	13	.769	9	18	.500	0	0	
.09	26	13	.667	8	21	.381	17	26	.654
.10	0	0		10	20	.500	0	0	
.11	0	0		4	6	.687	0	0	
.15	28	13	.615	26	33	.687	0	0	
.16	29	13	.744	16	26	.615	12	13	.523
.17	0	0		0	0		0	0	
.18	0	0		0	0		0	0	
.19	0	0		0	0		0	0	
.23	0	0		0	0		0	0	
.24	9	13	.692	6	6	1.000	0	0	
.25	0	0		12	13	.523	0	0	
.26	0	0		8	13	.615	0	0	
.27	0	0		4	7	.571	0	0	
.28	9	13	.692	0	0		0	0	

COMMAND 3

SIZE	CAPS		PROP	SPLICE		PROP	TEAR		PROP
	HITS	OPFS		HITS	CPFS		HITS	CPFS	
.03	0	0		0	0		0	0	
.04	6	16	.375	9	23	.360	0	16	.188
.05	0	0		10	24	.143	0	0	
.08	0	16	.375	10	34	.294	0	0	
.09	9	16	.281	15	30	.500	5	16	.313
.10	0	16	.500	4	7	.571	8	16	.500
.11	0	0		5	3	.556	0	0	
.15	26	48	.542	17	3	.531	0	0	
.16	0	0		12	14	.750	0	0	
.17	0	0		28	14	.675	0	16	.500
.18	0	0		0	0		0	0	
.19	0	16	.500	0	0		0	0	
.23	0	0		20	23	.800	0	0	
.24	0	0		6	7	.857	0	0	
.25	0	0		0	0		0	0	
.26	22	36	.688	0	7	.714	0	0	
.27	0	0		7	0	.778	0	0	
.28	0	0		0	0		0	0	

FILE: TYPE DATA A1 NAVAL POSTGRADUATE SCHOOL

ULTRASONIC AIF FORCE TOTAL

SIZE	CAPS			PROP	SPLICE			PROP	TEAR			PROP
	HITS	OPFS			HITS	OPFS			HITS	OPFS		
.003	0	0			27	60	.450		0	0		
.004	25	72	.347		59	164	.360		24	126	.190	
.005	13	54	.241		11	28	.393		0	0		
.006	16	25	.552		42	115	.365		13	34	.382	
.009	129	240	.537		159	224	.602		33	149	.309	
.100	98	215	.456		123	213	.577		32	65	.464	
.111	6	20	.300		18	38	.474		0	0		
.155	76	133	.571		30	90	.556		0	0		
.166	150	234	.641		40	344	.698		4	78	.526	
.177	37	54	.685		137	196	.699		28	46	.383	
.188	36	67	.537		0	0			0	0		
.199	8	16	.500		0	0			0	0		
.233	8	19	.421		28	37	.757		0	0		
.244	25	17	.676		84	83	.771		0	0		
.255	4	97	.660		82	56	.837		0	0		
.266	38	52	.731		69	96	.719		0	0		
.277	25	44	.735		31	64	.797		0	0		
.288	9	13	.692		0	0			0	0		

SIZE		CAPS		SPLICE		TEAR
SMALL	(38 / 126)	= .302	(97 / 252)	= .385	(24 / 126)	= .190
MED ILM	(249 / 504)	= .494	(342 / 630)	= .543	(100 / 252)	= .397
LARGE	(307 / 504)	= .609	(427 / 630)	= .678	(65 / 126)	= .519
XLARGE	(169 / 252)	= .671	(294 / 378)	= .778	NCNE	

FILE: TYPE DATA A1 NAVAL POSTGRADUATE SCHOOL

EDDY CURRENT
COMMAND 1

SIZE	HITS	CAPS CPFS	PROP	HITS	SPLICE CPFS	PROP	HITS	TEAR CPFS	PROP
.03	73	156	.468	0	0		0	0	
.04	29	39	.744	52	78	.607	37	78	.474
.05	00	00		10	35	.256	00	00	
.08	35	35	.897	18	21	.857	00	00	
.09	35	35	.897	90	117	.769	00	00	
.10	54	18	.692	67	56	.698	00	00	
.11	00	00		0	00		35	35	.840
.15	00	00		0	00		00	00	
.16	36	3	.923	52	55	.881	35	35	.897
.17	00	00		91	52	.938	00	00	
.24	37	3	.949	0	00		00	00	
.25	00	00		90	55	.909	00	00	
.26	00	00		18	18	1.000	00	00	
.27	00	00		0	00		00	00	
.30	00	00		0	00		00	00	

COMMAND 2

SIZE	HITS	CAPS CPFS	PROP	HITS	SPLICE CPFS	PROP	HITS	TEAR CPFS	PROP
.03	00	00		4	5	.444	00	00	
.04	30	68	.441	10	17	.588	20	34	.588
.05	00	17	.471	14	28	.560	00	00	
.08	15	17	.882	00	00		00	00	
.09	45	51	.882	37	71	.803	00	00	
.10	00	00		27	31	.871	15	15	.705
.11	00	00		0	00		00	00	
.15	00	00		21	35	.830	00	00	
.16	17	17	1.000	29	35	.829	15	15	.824
.17	00	00		0	00		00	00	
.24	00	00		14	14	.824	00	00	
.25	00	00		21	24	.875	00	00	
.26	00	00		8	10	.800	00	00	
.27	00	00		0	00		00	00	
.30	17	17	1.000	0	00		00	00	

COMMAND 3

SIZE	HITS	CAPS CPFS	PROP	HITS	SPLICE CPFS	PROP	HITS	TEAR CPFS	PROP
.03	00	00		0	00		00	00	
.04	58	100	.580	15	15	.400	00	00	
.05	00	00		15	18	.455	00	00	
.08	15	20	.750	24	40	.600	00	00	
.09	00	00		45	60	.750	15	20	.900
.10	16	40	.400	17	20	.850	00	00	
.11	11	20	.550	0	00		00	00	
.15	15	20	.750	26	20	.925	00	00	
.16	00	00		16	20	.800	00	00	
.17	00	00		30	30	.938	15	20	.900
.24	00	00		8	8	1.000	00	00	
.25	00	00		8	8	1.000	00	00	
.26	00	00		29	30	.966	00	00	
.27	00	00		11	11	.917	00	00	
.30	16	16	.800	0	00		00	00	

FILE: TYPE DATA A1 NAVAL POSTGRADUATE SCHOOL

EIDY CURRENT
COMMAND 4

SIZE	CAPS			PROP	SPLICE			PROP	TEAR			PROP
	HITS	OP	PS		HITS	OP	PS		HITS	OP	PS	
.0043	18	48	.375	16	10	.727	20	40	.458			
.0044	35	48	.486	32	10	.640	20	40	.458			
.0045	17	24	.708	24	24	1.000	20	40	.458			
.0046	42	48	.250	36	48	.750	20	24	.958			
.0047	00	00	.875	49	48	.817	20	24	.958			
.0048	00	00	1.000	0	10	.500	20	24	1.000			
.0049	24	24	1.000	11	10	.646	20	24	1.000			
.0050	00	00	1.000	48	48	.958	20	24	1.000			
.0051	00	00	1.000	57	60	1.950	20	24	1.000			
.0052	24	24	1.000	12	10	1.000	20	24	1.000			
.0053	00	00	1.000	0	0	0	20	24	1.000			

COMMAND 5

SIZE	CAPS			PROP	SPLICE			PROP	TEAR			PROP
	HITS	OP	PS		HITS	OP	PS		HITS	OP	PS	
.0043	17	15	.467	0	0	.935	10	40	.500			
.0044	22	15	.633	29	30	.837	10	40	.500			
.0045	22	15	.767	12	14	.807	10	40	.500			
.0046	24	15	.733	26	30	.807	10	40	.500			
.0047	00	00	.800	25	30	.833	10	40	.500			
.0048	00	00	1.000	28	30	.933	10	40	.500			
.0049	00	00	1.000	0	0	1.000	10	40	.500			
.0050	10	15	.800	49	50	.925	10	40	.500			
.0051	12	15	.800	0	2	.826	10	40	.500			
.0052	00	00	1.000	19	20	1.000	10	40	.500			
.0053	00	00	1.000	7	10	.867	10	40	.500			
.0054	00	00	1.000	13	10	1.000	10	40	.500			
.0055	00	00	1.000	0	0	0	10	40	.500			

COMMAND 6

SIZE	CAPS			PROP	SPLICE			PROP	TEAR			PROP
	HITS	OP	PS		HITS	OP	PS		HITS	OP	PS	
.0043	24	10	.211	8	10	.800	10	40	.421			
.0044	24	10	.421	28	40	.598	10	40	.421			
.0045	8	10	.421	0	0	0	10	40	.421			
.0046	14	10	.737	12	10	.632	10	40	.421			
.0047	25	10	.688	27	40	.583	10	40	.421			
.0048	00	00	.658	34	47	.723	10	40	.421			
.0049	00	00	1.000	0	0	1.000	10	40	.421			
.0050	10	10	.842	19	10	.828	10	40	.421			
.0051	00	00	1.000	23	10	.821	10	40	.421			
.0052	00	00	1.000	25	10	.862	10	40	.421			
.0053	14	10	.737	7	10	.700	10	40	.421			
.0054	00	00	1.000	14	10	.778	10	40	.421			
.0055	00	00	1.000	0	0	0	10	40	.421			

EDDY CURRENT
AIF FORCE TOTAL

SIZE	HITS	CAPS OPFS	PROP	HITS	SPLICE OPFS	PROP	HITS	TEAR OPFS	PROP
.03	102	238	.429	34	50	.680	0		
.04	195	366	.533	166	236	.648	110	226	.482
.05	39	66	.591	51	96	.531	26	40	.650
.08	118	145	.792	101	134	.754	0		
.09	117	163	.718	180	374	.749	56	55	.549
.10	137	204	.672	222	284	.782	26	55	.778
.11	11	20	.550	6	12	.500	33	55	.846
.15	15	20	.750	84	100	.840	0		
.16	93	55	.539	206	231	.892	87	55	.879
.17	12	15	.800	190	205	.927	34	55	.871
.24	49	54	.907	66	77	.857	0		
.25	0	0		150	208	.913	0		
.26	38	43	.884	94	105	.895	0		
.27	0	0		11	12	.917	0		
.30	33	37	.892	0	0		0		

SIZE	CAPS	SPLICE	TEAR
SMALL	(336 / 670) = .501	(251 / 402) = .624	(136 / 208) = .507
MED ILM	(383 / 536) = .715	(609 / 804) = .757	(117 / 134) = .873
LARGE	(120 / 134) = .896	(480 / 536) = .896	(121 / 134) = .903
XLARGE	(120 / 134) = .896	(361 / 402) = .898	NCNE

FILE: LABEL DATA A1 NAVAL POSTGRADUATE SCHOOL

THE VISUAL SIZE OF EVERY CRACK WAS MEASURED UNDER A MICROSCOPE, GIVING A TOTAL OF 19 DIFFERENT APPARENT SIZES. THESE WERE THEN MORE CRUDELY COLLAPSED INTO FOUR GROUPS, LABELLED (BY US) SMALL, MEDIUM, LARGE AND EXTRALARGE. THE ATTACHED TABLES GIVE COUNTS BY COMMAND AND FOR THE AIR FORCE IN TOTAL OF THE NUMBER OF OPPORTUNITIES (LABELLED CPPS) FOR EACH OF THE APPARENT SIZES, AS WELL AS THE NUMBER OF HITS AND THE PROPORTION OF HITS. IN THIS SUMMARY, THE COUNTS ARE GIVEN FOR EACH OF THE THREE TYPES OF PLATES INDIVIDUALLY.

EDDY CURRENT

[illegible]

ULTRASONIC

S E R I E S	C P S						S P L I C E						T D A R					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX II

THE ATTACHED TABLES GIVE COUNTS OF THE NUMBER OF TECHNICIANS TO INSPECT EACH INDIVIDUAL HOLE, THE NUMBER OF THEM THAT MARKED THE HOLE AS BEING DEFECTIVE, AND AN INDICATION OF WHETHER THE HOLE WAS IN FACT FLAWED; IF IT WAS FLAWED, A CODE IS USED TO INDICATE THE FLAW SIZE. FOR EXAMPLE, THE FIRST TABLE FOR COMMAND 1 IS REPRODUCED BELOW:

TEAR NUMBER (SCALLOP)	NUMBER OF TECHNICIANS	H O L E N U M B E R			
		1	2	3	4
7	34	6-1	13-2	6	5
8	34	5	18	17-2	14
9	34	4	6	20-3	5

THE TBARS ARE THE SCALLOPED PLATES WITH ONLY 4 HOLES IN THEM. EACH COMMAND RECEIVED ONLY THREE TBARS FOR THE ULTRASONICS TEST AND THREE FOR THE EDDY CURRENT TESTS. EACH OF THESE WAS USED IN EVERY CONFIGURATION AND THUS EVERY TECHNICIAN (ALL 34 FOR THIS BASE) HAD THE OPPORTUNITY TO INSPECT EVERY ONE OF THEM. OF THE 34 TECHNICIANS TO INSPECT TEAR 7, 6 OF THEM MARKED HOLE NUMBER 1, 13 OF THEM MARKED HOLE NUMBER 2, 6 MARKED HOLE NUMBER 3, ETC. ALSO, FOR THIS TEAR, HOLE NUMBER 1 DID IN FACT HAVE A SMALL FLAW (INDICATED BY -1) AND HOLE NUMBER 2 HAD A MEDIUM FLAW (INDICATED BY -2) AND THE OTHER TWO HOLES WERE PRESUMABLY UNFLAWED. THE OTHER TYPES OF PLATES AND COMMANDS ARE TREATED IN THE SAME WAY. THE MARKING -3 MEANS A LARGE FLAW, WHILE -4 MEANS AN EXTRA LARGE FLAW.

COMMAND 1 ULTRASONIC

TBAR NUMBER (SCALLCF)	NUMBER OF TECHNICIANS	F O L D N U M B E R			
		1	2	3	4
7	34	6-1	13-2	6	5
8	34	5	18	17-2	14
9	34	4	6	20-3	5

CAP. NUMBER NUMBER OF TECHNICIANS		1	2	3	4
		34	34	34	34
	1	6	5	3	25-4
	2	4	4	2	6
	3	18-2	5	30-4	4
	4	4	6	2	4
	5	26-3	6	28-3	4
	6		9-1	2	5
	7		7	4	8
	8		23-3	6	6
	9		5	1	4
	10	6	19-2	20-2	3
	11	4	4	0	22-2
	12	2	2	0	0
	13	1	5	7	5
	14	21-3	4	5	8

SPLICE PLATE	NO. OF TECHS	1	2	3	4	5	6	7	8	9	10
1	15	4	2	3	4	5	1	3	4	8	5
2	15	4	4	3	4	5	1	3	4	4	5
3	15	4	18-2	20-2	3	5	7-1	4	6	14	5
4	14	2	7	2	13-2	5	2	2	7	2	5
5	14	8	4	4	5	10	1	3	3	3	4
6	17	16-2	13-2	4	5	4	6	3	2	3	4
7	17	9	5	26-3	10	4	1	4	2	20-3	5
8	14	7	3	3	8	30	1	3	7	4	5
9	14	3	22-3	18-4	6	15	1	14	3	4	5
10	16	15-4	4	13-4	15-4	3	1	3	2	4	5
11	15	1	2	6	12	5	5	3	6	0	5
12	17	3	2	5	6	5	2	3	4	4	5
13	16	2	2	1	6	5	2	3	4	5	5

		COMMAND 1 EDDY CURRENT			
TBAR NUMBER (SCALLCF)	NUMBER OF TECHNICIANS	HOLE NUMBER			
		1	2	3	4
20	39	27-1	7	4	6
21	39	10-1	4	5	30-3
22	39	3	33-2	4	4

		15	16	17	18
CAP NUMBER	NUMBER OF TECHNICIANS	39	39	39	39
		24-2	15-1	5	2
		25-2	5	30-2	29-1
		26-2	6	30-2	2
		27-2	3	30-2	2
		28-2	4	30-2	7
		29-2	4	30-2	6
		30-2	2	30-2	3
		31-2	1	30-2	6
		32-2	1	30-2	6
		33-2	1	30-2	6
		34-2	1	30-2	6
		35-2	1	30-2	6
		36-2	1	30-2	6
		37-2	1	30-2	6
		38-2	1	30-2	6
		39-2	1	30-2	6
		40-2	1	30-2	6
		41-2	1	30-2	6
		42-2	1	30-2	6
		43-2	1	30-2	6
		44-2	1	30-2	6
		45-2	1	30-2	6
		46-2	1	30-2	6
		47-2	1	30-2	6
		48-2	1	30-2	6
		49-2	1	30-2	6
		50-2	1	30-2	6
		51-2	1	30-2	6
		52-2	1	30-2	6
		53-2	1	30-2	6
		54-2	1	30-2	6
		55-2	1	30-2	6
		56-2	1	30-2	6
		57-2	1	30-2	6
		58-2	1	30-2	6
		59-2	1	30-2	6
		60-2	1	30-2	6
		61-2	1	30-2	6
		62-2	1	30-2	6
		63-2	1	30-2	6
		64-2	1	30-2	6
		65-2	1	30-2	6
		66-2	1	30-2	6
		67-2	1	30-2	6
		68-2	1	30-2	6
		69-2	1	30-2	6
		70-2	1	30-2	6
		71-2	1	30-2	6
		72-2	1	30-2	6
		73-2	1	30-2	6
		74-2	1	30-2	6
		75-2	1	30-2	6
		76-2	1	30-2	6
		77-2	1	30-2	6
		78-2	1	30-2	6
		79-2	1	30-2	6
		80-2	1	30-2	6
		81-2	1	30-2	6
		82-2	1	30-2	6
		83-2	1	30-2	6
		84-2	1	30-2	6
		85-2	1	30-2	6
		86-2	1	30-2	6
		87-2	1	30-2	6
		88-2	1	30-2	6
		89-2	1	30-2	6
		90-2	1	30-2	6
		91-2	1	30-2	6
		92-2	1	30-2	6
		93-2	1	30-2	6
		94-2	1	30-2	6
		95-2	1	30-2	6
		96-2	1	30-2	6
		97-2	1	30-2	6
		98-2	1	30-2	6
		99-2	1	30-2	6
		100-2	1	30-2	6

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
30	19	6	14	1	2	1	3	4	5	1	10
31	20	10	3	1	14	1	1	2	1	1	10
32	20	3	4	1	11	2	2	3	2	4	10
33	18	4	2	1	14	2	1	1	1	4	10
34	19	6	1	1	14	2	1	1	1	4	10
35	19	6	1	1	14	2	1	1	1	4	10
36	19	6	1	1	14	2	1	1	1	4	10
37	19	6	1	1	14	2	1	1	1	4	10
38	19	6	1	1	14	2	1	1	1	4	10
39	19	6	1	1	14	2	1	1	1	4	10
40	19	6	1	1	14	2	1	1	1	4	10
41	19	6	1	1	14	2	1	1	1	4	10
42	19	6	1	1	14	2	1	1	1	4	10
43	19	6	1	1	14	2	1	1	1	4	10
44	19	6	1	1	14	2	1	1	1	4	10
45	19	6	1	1	14	2	1	1	1	4	10
46	19	6	1	1	14	2	1	1	1	4	10
47	19	6	1	1	14	2	1	1	1	4	10
48	19	6	1	1	14	2	1	1	1	4	10
49	19	6	1	1	14	2	1	1	1	4	10
50	19	6	1	1	14	2	1	1	1	4	10
51	19	6	1	1	14	2	1	1	1	4	10
52	19	6	1	1	14	2	1	1	1	4	10
53	19	6	1	1	14	2	1	1	1	4	10
54	19	6	1	1	14	2	1	1	1	4	10
55	19	6	1	1	14	2	1	1	1	4	10
56	19	6	1	1	14	2	1	1	1	4	10
57	19	6	1	1	14	2	1	1	1	4	10
58	19	6	1	1	14	2	1	1	1	4	10
59	19	6	1	1	14	2	1	1	1	4	10
60	19	6	1	1	14	2	1	1	1	4	10
61	19	6	1	1	14	2	1	1	1	4	10
62	19	6	1	1	14	2	1	1	1	4	10
63	19	6	1	1	14	2	1	1	1	4	10
64	19	6	1	1	14	2	1	1	1	4	10
65	19	6	1	1	14	2	1	1	1	4	10
66	19	6	1	1	14	2	1	1	1	4	10
67	19	6	1	1	14	2	1	1	1	4	10
68	19	6	1	1	14	2	1	1	1	4	10
69	19	6	1	1	14	2	1	1	1	4	10
70	19	6	1	1	14	2	1	1	1	4	10
71	19	6	1	1	14	2	1	1	1	4	10
72	19	6	1	1	14	2	1	1	1	4	10
73	19	6	1	1	14	2	1	1	1	4	10
74	19	6	1	1	14	2	1	1	1	4	10
75	19	6	1	1	14	2	1	1	1	4	10
76	19	6	1	1	14	2	1	1	1	4	10
77	19	6	1	1	14	2	1	1	1	4	10
78	19	6	1	1	14	2	1	1	1	4	10
79	19	6	1	1	14	2	1	1	1	4	10
80	19	6	1	1	14	2	1	1	1	4	10
81	19	6	1	1	14	2	1	1	1	4	10
82	19	6	1	1	14	2	1	1	1	4	10
83	19	6	1	1	14	2	1	1	1	4	10
84	19	6	1	1	14	2	1	1	1	4	10
85	19	6	1	1	14	2	1	1	1	4	10
86	19	6	1	1	14	2	1	1	1	4	10
87	19	6	1	1	14	2	1	1	1	4	10
88	19	6	1	1	14	2	1	1	1	4	10
89	19	6	1	1	14	2	1	1	1	4	10
90	19	6	1	1	14	2	1	1	1	4	10
91	19	6	1	1	14	2	1	1	1	4	10
92	19	6	1	1	14	2	1	1	1	4	10
93	19	6	1	1	14	2	1	1	1	4	10
94	19	6	1	1	14	2	1	1	1	4	10
95	19	6	1	1	14	2	1	1	1	4	10
96	19	6	1	1	14	2	1	1	1	4	10
97	19	6	1	1	14	2	1	1	1	4	10
98	19	6	1	1	14	2	1	1	1	4	10
99	19	6	1	1	14	2	1	1	1	4	10
100	19	6	1	1	14	2	1	1	1	4	10

COMPAND 2 ULTRASONIC

TBAR NUMBER (SCALLCF)	NUMBER OF TECHNICIANS	1	2	3	4
7	13	4-1	10-2	4	4
8	13	4	4	7-2	2
9	13	1	5	12-3	1

CAP NUMBER NUMBER OF TECHNICIANS	1	2	3	4
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
12	1	1	1	1
13	1	1	1	1
14	1	1	1	1
15	1	1	1	1
16	1	1	1	1
17	1	1	1	1
18	1	1	1	1
19	1	1	1	1
20	1	1	1	1
21	1	1	1	1
22	1	1	1	1
23	1	1	1	1
24	1	1	1	1
25	1	1	1	1
26	1	1	1	1
27	1	1	1	1
28	1	1	1	1
29	1	1	1	1
30	1	1	1	1
31	1	1	1	1
32	1	1	1	1
33	1	1	1	1
34	1	1	1	1
35	1	1	1	1
36	1	1	1	1
37	1	1	1	1
38	1	1	1	1
39	1	1	1	1
40	1	1	1	1
41	1	1	1	1
42	1	1	1	1
43	1	1	1	1
44	1	1	1	1
45	1	1	1	1
46	1	1	1	1
47	1	1	1	1
48	1	1	1	1
49	1	1	1	1
50	1	1	1	1
51	1	1	1	1
52	1	1	1	1
53	1	1	1	1
54	1	1	1	1
55	1	1	1	1
56	1	1	1	1
57	1	1	1	1
58	1	1	1	1
59	1	1	1	1
60	1	1	1	1
61	1	1	1	1
62	1	1	1	1
63	1	1	1	1
64	1	1	1	1
65	1	1	1	1
66	1	1	1	1
67	1	1	1	1
68	1	1	1	1
69	1	1	1	1
70	1	1	1	1
71	1	1	1	1
72	1	1	1	1
73	1	1	1	1
74	1	1	1	1
75	1	1	1	1
76	1	1	1	1
77	1	1	1	1
78	1	1	1	1
79	1	1	1	1
80	1	1	1	1
81	1	1	1	1
82	1	1	1	1
83	1	1	1	1
84	1	1	1	1
85	1	1	1	1
86	1	1	1	1
87	1	1	1	1
88	1	1	1	1
89	1	1	1	1
90	1	1	1	1
91	1	1	1	1
92	1	1	1	1
93	1	1	1	1
94	1	1	1	1
95	1	1	1	1
96	1	1	1	1
97	1	1	1	1
98	1	1	1	1
99	1	1	1	1
100	1	1	1	1

SPLICE PLATE	NC OF TECHS	1	2	3	4	5	6	7	8	9	10
1	7	4	4	4	4	4	4	4	4	4	4
2	6	4	4	4	4	4	4	4	4	4	4
3	7	4	4	4	4	4	4	4	4	4	4
4	7	4	4	4	4	4	4	4	4	4	4
5	6	4	4	4	4	4	4	4	4	4	4
6	7	4	4	4	4	4	4	4	4	4	4
7	6	4	4	4	4	4	4	4	4	4	4
8	7	4	4	4	4	4	4	4	4	4	4
9	6	4	4	4	4	4	4	4	4	4	4
10	7	4	4	4	4	4	4	4	4	4	4
11	6	4	4	4	4	4	4	4	4	4	4
12	7	4	4	4	4	4	4	4	4	4	4
13	6	4	4	4	4	4	4	4	4	4	4
14	7	4	4	4	4	4	4	4	4	4	4
15	6	4	4	4	4	4	4	4	4	4	4
16	7	4	4	4	4	4	4	4	4	4	4
17	6	4	4	4	4	4	4	4	4	4	4
18	7	4	4	4	4	4	4	4	4	4	4
19	6	4	4	4	4	4	4	4	4	4	4
20	7	4	4	4	4	4	4	4	4	4	4
21	6	4	4	4	4	4	4	4	4	4	4
22	7	4	4	4	4	4	4	4	4	4	4
23	6	4	4	4	4	4	4	4	4	4	4
24	7	4	4	4	4	4	4	4	4	4	4
25	6	4	4	4	4	4	4	4	4	4	4
26	7	4	4	4	4	4	4	4	4	4	4
27	6	4	4	4	4	4	4	4	4	4	4
28	7	4	4	4	4	4	4	4	4	4	4
29	6	4	4	4	4	4	4	4	4	4	4
30	7	4	4	4	4	4	4	4	4	4	4
31	6	4	4	4	4	4	4	4	4	4	4
32	7	4	4	4	4	4	4	4	4	4	4
33	6	4	4	4	4	4	4	4	4	4	4
34	7	4	4	4	4	4	4	4	4	4	4
35	6	4	4	4	4	4	4	4	4	4	4
36	7	4	4	4	4	4	4	4	4	4	4
37	6	4	4	4	4	4	4	4	4	4	4
38	7	4	4	4	4	4	4	4	4	4	4
39	6	4	4	4	4	4	4	4	4	4	4
40	7	4	4	4	4	4	4	4	4	4	4
41	6	4	4	4	4	4	4	4	4	4	4
42	7	4	4	4	4	4	4	4	4	4	4
43	6	4	4	4	4	4	4	4	4	4	4
44	7	4	4	4	4	4	4	4	4	4	4
45	6	4	4	4	4	4	4	4	4	4	4
46	7	4	4	4	4	4	4	4	4	4	4
47	6	4	4	4	4	4	4	4	4	4	4
48	7	4	4	4	4	4	4	4	4	4	4
49	6	4	4	4	4	4	4	4	4	4	4
50	7	4	4	4	4	4	4	4	4	4	4
51	6	4	4	4	4	4	4	4	4	4	4
52	7	4	4	4	4	4	4	4	4	4	4
53	6	4	4	4	4	4	4	4	4	4	4
54	7	4	4	4	4	4	4	4	4	4	4
55	6	4	4	4	4	4	4	4	4	4	4
56	7	4	4	4	4	4	4	4	4	4	4
57	6	4	4	4	4	4	4	4	4	4	4
58	7	4	4	4	4	4	4	4	4	4	4
59	6	4	4	4	4	4	4	4	4	4	4
60	7	4	4	4	4	4	4	4	4	4	4
61	6	4	4	4	4	4	4	4	4	4	4
62	7	4	4	4	4	4	4	4	4	4	4
63	6	4	4	4	4	4	4	4	4	4	4
64	7	4	4	4	4	4	4	4	4	4	4
65	6	4	4	4	4	4	4	4	4	4	4
66	7	4	4	4	4	4	4	4	4	4	4
67	6	4	4	4	4	4	4	4	4	4	4
68	7	4	4	4	4	4	4	4	4	4	4
69	6	4	4	4	4	4	4	4	4	4	4
70	7	4	4	4	4	4	4	4	4	4	4
71	6	4	4	4	4	4	4	4	4	4	4
72	7	4	4	4	4	4	4	4	4	4	4
73	6	4	4	4	4	4	4	4	4	4	4
74	7	4	4	4	4	4	4	4	4	4	4
75	6	4	4	4	4	4	4	4	4	4	4
76	7	4	4	4	4	4	4	4	4	4	4
77	6	4	4	4	4	4	4	4	4	4	4
78	7	4	4	4	4	4	4	4	4	4	4
79	6	4	4	4	4	4	4	4	4	4	4
80	7	4	4	4	4	4	4	4	4	4	4
81	6	4	4	4	4	4	4	4	4	4	4
82	7	4	4	4	4	4	4	4	4	4	4
83	6	4	4	4	4	4	4	4	4	4	4
84	7	4	4	4	4	4	4	4	4	4	4
85	6	4	4	4	4	4	4	4	4	4	4
86	7	4	4	4	4	4	4	4	4	4	4
87	6	4	4	4	4	4	4	4	4	4	4
88	7	4	4	4	4	4	4	4	4	4	4
89	6	4	4	4	4	4	4	4	4	4	4
90	7	4	4	4	4	4	4	4	4	4	4
91	6	4	4	4	4	4	4	4	4	4	4
92	7	4	4	4	4	4	4	4	4	4	4
93	6	4	4	4	4	4	4	4	4	4	4
94	7	4	4	4	4	4	4	4	4	4	4
95	6	4	4	4	4	4	4	4	4	4	4
96	7	4	4	4	4	4	4	4	4	4	4
97	6	4	4	4	4	4	4	4	4	4	4
98	7	4	4	4	4	4	4	4	4	4	4
99	6	4	4	4	4	4	4	4	4	4	4
100	7	4	4	4	4	4	4	4	4	4	4

FILE: NDT

CCNF

A1 NAVAL POSTGRADUATE SCHOOL

COMMAND 2
ELLY CURRENT

TBAR NUMBER (SCALLCF)	NUMBER OF TECHNICIANS	1	2	3	4
20	17	13-1	3	0	2
21	17	1-1	1	0	14-3
22	17	1	13-2	3	0

CAP NUMBER NUMBER OF TECHNICIANS	15 17	16 17	17 17	18 17
1	13-2	8-1	1	2
2		2	13-2	4-1
3		1	1	3
4		1	1	4
5		1	1	2
6	1-14	2	1	2
7	1	1	1	2
8	1-1	1	1	1
9		1	1	1
10		1	1	17-3
11		1	1	2
12		1	1	2
13		1	1	2
14		16-2	1	2

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
10	9	1	1	1	1	1	1	1	1	1	1
11	8	1	1	1	1	1	1	1	1	1	1
12	17	1	1	1	1	1	1	1	1	1	1
13	10	1	1	1	1	1	1	1	1	1	1
14	7	1	1	1	1	1	1	1	1	1	1
15	8	1	1	1	1	1	1	1	1	1	1
16	17	1	1	1	1	1	1	1	1	1	1
17	10	1	1	1	1	1	1	1	1	1	1
18	7	1	1	1	1	1	1	1	1	1	1
19	10	1	1	1	1	1	1	1	1	1	1
20	10	1	1	1	1	1	1	1	1	1	1
21	8	1	1	1	1	1	1	1	1	1	1
22	7	1	1	1	1	1	1	1	1	1	1

FILE: NDT

CCNF

A1 NAVAL POSTGRADUATE SCHOOL

COMMAND 3
ULTRASONIC

TBAR NUMBER (SCALLOP)	NUMBER OF TECHNICIANS	1	2	3	4
7	16	1	2	2	1
8	16	4	2	2	4
9	16			3	

CAP. NUMBER NUMBER OF TECHNICIANS	1	2	3	4
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9
10	10	10	10	10
11	11	11	11	11
12	12	12	12	12
13	13	13	13	13
14	14	14	14	14

SPLICE PLATE	NO. OF TECHS	1	2	3	4	5	6	7	8	9	10
1	5	1	1	1	1	1	1	1	1	1	1
2	5	2	2	2	2	2	2	2	2	2	2
3	5	3	3	3	3	3	3	3	3	3	3
4	5	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	5	6	6	6	6	6	6	6	6	6	6
7	5	7	7	7	7	7	7	7	7	7	7
8	5	8	8	8	8	8	8	8	8	8	8
9	5	9	9	9	9	9	9	9	9	9	9
10	5	10	10	10	10	10	10	10	10	10	10
11	5	11	11	11	11	11	11	11	11	11	11
12	5	12	12	12	12	12	12	12	12	12	12
13	5	13	13	13	13	13	13	13	13	13	13
14	5	14	14	14	14	14	14	14	14	14	14
15	5	15	15	15	15	15	15	15	15	15	15
16	5	16	16	16	16	16	16	16	16	16	16
17	5	17	17	17	17	17	17	17	17	17	17
18	5	18	18	18	18	18	18	18	18	18	18
19	5	19	19	19	19	19	19	19	19	19	19
20	5	20	20	20	20	20	20	20	20	20	20

COMMAND 3
 EDDY CURRENT

TBAR NUMBER (SCALLCP)	NUMBER OF TECHNICIANS	1	2	3	4
20	20	1-1	1	1	3
21	20	6-1	2	3	19-3
22	20	1	19-2	1	3

CAP. NUMBER NUMBER OF TECHNICIANS	15 20	16 20	17 20	18 20
1	1-2	1-1	2	4
2	1	3	2	2
3	1	8	1-2	19-1
4	1	5	5	1
5	1	5	5	2
6	16-4	5	5	3
7	4	5	5	2
8	1	4-1	6-2	4
9	1	5	2	1
10	1	6	4	10-3
11	1	2	3	1
12	1	2	3	1
13	1	3	2	1
14	3	10-2	14-1	3

SPLICE PLATE	NO. OF TECHS	1	2	3	4	5	6	7	8	9	10
1	11	2	1-1	7	6-1	1	2	3	4	0	4
2	9	4	1	7-1	1	0	2	4	4	0	4
3	20	3	1	7	1	1	4-2	3	9	2	4
4	13	1	1	6	2	1	7	5	1	2	4
5	7	1	1	6	1	1	3	5	2	0	3
6	12	1	1	6	1	1	1	5	2	0	3
7	8	3	1	1	1	18	1	5	1	4	1
8	20	3	1	1	1	1	1	4	1	4	1
9	18	7	1	1	1	1	1	4	1	4	1
10	13	4	1	1	1	1	1	0	0	0	1
11	11	1	1	1	1	1	1	0	0	0	1
12	5	1	1	1	1	1	1	0	0	0	1
13	7	1	1	1	1	1	1	0	0	0	1

COMMAND 4
ULTRASONIC

TBAR NUMBER (SCALLCP)	NUMBER OF TECHNICIANS	F O L E N U M B E R			
		1	2	3	4
7	24	2-1	12-2	9	5
8	24	10	13	6-2	5
9	24	13	8	16-3	4

CAP NUMBER	NUMBER OF TECHNICIANS	1	2	3	4
		24	24	24	24
H O F	1	7	13	10	17-4
	2	10	12	5	10
	3	13-2	6	16-4	14
	4	7	9	10	5
	5	13-3	7	12-3	13
	6	5	10-1	8	15
	7	7	10	6	10
	8	6	14-3	5	13
	9	7	8	10	7
	10	5	12-2	5-2	14
	11	3	8	12-3	18-2
	12	7	10	5	5
	13	8	7	5	8
	14	17-3	5	10	11

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
1	12	5	5	4-1	5	9-1	7	6	5	5	7
2	12	7	8	1-1	5	7	5-1	7	5	5	6
3	12	7	6-2	10-2	5	6	7	9	6	11-2	6
4	12	5	5	5-2	7-2	7	6	5	7-2	5	6
5	12	9	10	6	9	9-2	5	5	11-2	9	6
6	12	8-2	1	6	5	6	13	12	18-3	20-3	6
7	24	1	20-3	16-3	13	15	13	12	18	13	6
8	24	15	2	10-4	10	11	14	12	17	13	6
9	12	10-4	7	8-4	10-4	11	8	9-4	8	7	5
10	12	4	7	8	10	7	7	10	7	6	7
11	12	6	9	8	7	10	6	9	8	9	5
12	12	5	5	7	4	7	5	6	5	4	4

COMMAND 4
EDDY CURRENT

TBAR NUMBER (SCALLOP)	NUMBER OF TECHNICIANS	HOLE NUMBER			
		1	2	3	4
20	24	12-1	1	0	0
21	24	8-1	23-2	1	24-3
22	24	C		1	2

CAP NUMBER		15	16	17	18
NUMBER OF TECHNICIANS		24	24	24	24
COMBINATION	1	17-2	4-1	5	5
	2	2	4	2	5
	3	4	3	21-2	10-1
	4	4	2	1	4
	5	24-4	1	2	3
	6	2	7	6	4
	7	7-1	14-1	5-2	3
	8		2	3	1
	9		5	4	24-3
	10		3	4	4
	11		4	4	4
	12		4	4	4
	13		21-2	18-1	4
	14				

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
10	11	0	8-1	0	8-1	1	0	8-1	0	0	0
11	12	1	1	8-1	8-1	2	1	0	0	0	8-1
12	24	1	0	1	19-1	0	20-2	10	24-1	0	0
13	10	1	0	1	1	10-2	1	5-2	2	2	0
14	11	1	1	1	0	1	12-2	1	8-1	2	0
15	11	1	1	1	1	1	10-3	1	3	2	1
16	13	1	1	1	1	1	1	3	3	0	1
17	24	3	4	1	3	23	2	5	1	1	1
18	12	7	4	1	1	1	12-4	5	1	1	24-1
19	12	10-4	1	0	12-4	4	12-4	1	1	3	0
20	12	0	4	0	2	4	1	3	2	0	0
21	11	0	0	0	2	0	0	1	2	0	7
22	12	0	0	1	1	0	1	0	0	1	3
23	13	2	1	1	2	1	2	1	1	2	1

FILE: NCT

CCNF

A1 NAVAL POSTGRADUATE SCHOOL

TBAR NUMBER (SCALLCF)	NUMBER OF TECHNICIANS	COMMAND 5 ULTRASONIC			
		F O L E	N U M B E R		
7	20	1	2	3	4
8	20	2	4	7	2
9	20	2	8	5	5

CAP NUMBER	NUMBER OF TECHNICIANS	20	20	20	20
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9
10	10	10	10	10	10
11	11	11	11	11	11
12	12	12	12	12	12
13	13	13	13	13	13
14	14	14	14	14	14

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
1	10	1	1	1	1	1	1	1	1	1	1
2	10	1	1	1	1	1	1	1	1	1	1
3	10	1	1	1	1	1	1	1	1	1	1
4	10	1	1	1	1	1	1	1	1	1	1
5	10	1	1	1	1	1	1	1	1	1	1
6	10	1	1	1	1	1	1	1	1	1	1
7	10	1	1	1	1	1	1	1	1	1	1
8	10	1	1	1	1	1	1	1	1	1	1
9	10	1	1	1	1	1	1	1	1	1	1
10	10	1	1	1	1	1	1	1	1	1	1
11	10	1	1	1	1	1	1	1	1	1	1
12	10	1	1	1	1	1	1	1	1	1	1
13	10	1	1	1	1	1	1	1	1	1	1
14	10	1	1	1	1	1	1	1	1	1	1

COMMAND 5
 EDDY CURRENT

TBR NUMBER (SCALLCP)	NUMBER OF TECHNICIANS	HOLE NUMBER			
		1	2	3	4
20	15	1	1	1	2
21	15	2	2	2	15
22	15	2	14	1	0

CAP NUMBER NUMBER OF TECHNICIANS		15	16	17	18
		15	15	15	15
	1	1	1	2	2
	2	1	1	1	1
	3	1	1	1	1
	4	1	1	1	1
	5	1	1	1	1
	6	1	1	1	1
	7	1	1	1	1
	8	1	1	1	1
	9	1	1	1	1
	10	1	1	1	1
	11	1	1	1	1
	12	1	1	1	1
	13	1	1	1	1
	14	1	1	1	1

SPLICE PLATE	NC OF TECHS	1	2	3	4	5	6	7	8	9	10
		1	2	3	4	5	6	7	8	9	10
1	8	1	7	1	1	1	1	7	1	1	1
2	15	1	1	1	1	1	1	1	1	1	1
3	15	1	1	1	1	1	1	1	1	1	1
4	15	1	1	1	1	1	1	1	1	1	1
5	15	1	1	1	1	1	1	1	1	1	1
6	15	1	1	1	1	1	1	1	1	1	1
7	15	1	1	1	1	1	1	1	1	1	1
8	15	1	1	1	1	1	1	1	1	1	1
9	15	1	1	1	1	1	1	1	1	1	1
10	15	1	1	1	1	1	1	1	1	1	1
11	15	1	1	1	1	1	1	1	1	1	1
12	15	1	1	1	1	1	1	1	1	1	1
13	15	1	1	1	1	1	1	1	1	1	1
14	15	1	1	1	1	1	1	1	1	1	1
15	15	1	1	1	1	1	1	1	1	1	1
16	15	1	1	1	1	1	1	1	1	1	1
17	15	1	1	1	1	1	1	1	1	1	1
18	15	1	1	1	1	1	1	1	1	1	1
19	15	1	1	1	1	1	1	1	1	1	1
20	15	1	1	1	1	1	1	1	1	1	1
21	15	1	1	1	1	1	1	1	1	1	1
22	15	1	1	1	1	1	1	1	1	1	1

COMMANC 6
ULTRASONIC

TEAR NUMBER (SCALLCP)	NUMBER OF TECHNICIANS	HOLE NUMBER			
		1	2	3	4
7	19	1-1	7-2	5	1
8	19	1	4	4-12	0
9	19	2	5	8-13	4

CAP NUMBER NUMBER OF TECHNICIANS		19	19	19	19
1	1	1	1	1	1
2	1	1	1	1	1
3	1	1	1	1	1
4	1	1	1	1	1
5	1	1	1	1	1
6	1	1	1	1	1
7	1	1	1	1	1
8	1	1	1	1	1
9	1	1	1	1	1
10	1	1	1	1	1
11	1	1	1	1	1
12	1	1	1	1	1
13	1	1	1	1	1
14	1	1	1	1	1

SPLICE PLATE	NO OF TECTS	1	2	3	4	5	6	7	8	9	10
1	10	1	1	1	1	1	1	1	1	1	1
2	10	1	1	1	1	1	1	1	1	1	1
3	10	1	1	1	1	1	1	1	1	1	1
4	10	1	1	1	1	1	1	1	1	1	1
5	10	1	1	1	1	1	1	1	1	1	1
6	10	1	1	1	1	1	1	1	1	1	1
7	10	1	1	1	1	1	1	1	1	1	1
8	10	1	1	1	1	1	1	1	1	1	1
9	10	1	1	1	1	1	1	1	1	1	1
10	10	1	1	1	1	1	1	1	1	1	1

FILE: NCT

CCNF

A1 NAVAL POSTGRADUATE SCHOOL

COMMAND 6
EDDY CURRENT

TABLE NUMBER (SCALLOP)	NUMBER OF TECHNICIANS	FILE 1	FILE 2	NUMBER 3	NUMBER 4
20	19	1	1	4	2
21	19	1	1	4	14-3
22	19	4	15-2	5	2

CAP NUMBER NUMBER OF TECHNICIANS	15 19	16 19	17 19	18 19
1	1	1	1	4
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
12	1	1	1	1
13	1	1	1	1
14	1	1	1	1

SPLICE PLATE	NO OF TECHS	1	2	3	4	5	6	7	8	9	10
1	10	1	1	1	1	1	1	1	1	1	1
2	10	1	1	1	1	1	1	1	1	1	1
3	10	1	1	1	1	1	1	1	1	1	1
4	10	1	1	1	1	1	1	1	1	1	1
5	10	1	1	1	1	1	1	1	1	1	1
6	10	1	1	1	1	1	1	1	1	1	1
7	10	1	1	1	1	1	1	1	1	1	1
8	10	1	1	1	1	1	1	1	1	1	1
9	10	1	1	1	1	1	1	1	1	1	1
10	10	1	1	1	1	1	1	1	1	1	1

AD-A131 885

STATISTICAL ANALYSIS FOR THE NONDESTRUCTIVE INSPECTION
(NDI) TECHNICIAN P. (U) NAVAL POSTGRADUATE SCHOOL
MONTEREY CA T JAYACHANDRAN ET AL. JUN 83

27

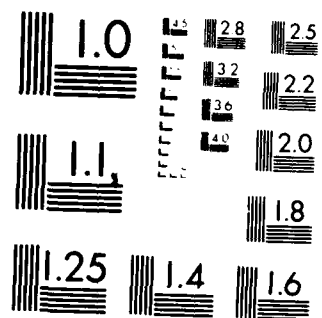
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NPS-53-83-0008

F/G 14/2

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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

APPENDIX III

DESCRIPTION OF TI-59 PROGRAM TO COMPUTER PROBABILITY SCORES FOR NDI TECHNICIANS

To run the TI-59 program to compute the probability score for a technician or for all the technicians at a base/command using either the ultrasonic or the Eddy-Current technique, turn the calculator on, press **[INV]** **[2nd]** **[WRITE]**, feed the magnetic card right side up, press **[2]** **[INV]** **[2nd]** **[WRITE]**, feed the second side of the card and then follow the steps below:

<u>STEP</u>	<u>ENTER</u>	<u>PRESS</u>
1	Total Number of Holes (inspection sites)/Rack	[STO] 01
2	Total Number of Small Flaws/Rack	[STO] 02
3	Total Number of Medium Flaws/Rack	[STO] 03
4	Total Number of Large Flaws/Rack	[STO] 04
5	Total Number of XLarge Flaws/Rack	[STO] 05
6	If The Score To Be Computed Is For One Technician Only Enter 1; Otherwise Enter The Total Number of Technicians At The Base/Command	[STO] 06
7		[A]
8	Total Number of Small Flaws Detected	[B]
9	Total Number of Medium Flaws Detected	[C]
10	Total Number of Large Flaws Detected	[D]
11	Total Number of XLarge Flaws Detected	[E]
12	Total Number of False Calls	[2nd] [A]
13	To Compute The Score For Ultrasonic	[2nd] [B]
14	To Compute The Score For Eddy-Current	[2nd] [C]

PROGRAM LISTING

LRN		=	Compute The Total
2nd LBL		STO 01	Number Of Flaws Of
A	Store The Weights	RCL 02	Each Size Presented
.327	To Compute The Score	X	To A Single Technician
STO 07	For Ultrasonic	RCL 06	Or All The Technicians
.210		=	At A Base/Command As
STO 08		STO 02	The Case May Be
.166		RCL 03	
STO 09		X	
.143		RCL 06	
STO		STO 03	
10		RCL 04	
.154		X	
STO 11		RCL 06	
.287		=	
STO 12		STO 04	
.201	Store The Weights	RCL 05	
STO 13	For Eddy-Current	X	
.168		RCL 06	
STO 14		=	
.167		STO 05	
STO 15		R/S	
.177		2nd LBL	
STO 16		B	Compute The Technicians'
RCL 01		STO 21	Probability Of
X		÷	Detecting Small Flaws
RCL 06		RCL 02	
		=	

STO 31		+/-	
R/S		-	
2nd LBL		RCL 02	Compute The Number
C	Compute The	-	Of Unflawed Holes
STO 22	Probability Of	RCL 03	Correctly Identified
÷	Detecting Medium Flaws	-	
RCL 03		RCL 04	
=		-	
STO 32		RCL 05	
R/S		+	
2nd LBL		RCL 01	
D	Compute The	=	
STO 23	Probability Of	STO 26	
÷	Detecting Large Flaws	÷	
RCL 04		(	Compute The Probability
=		RCL 25	That An Unflawed Hole
STO 33		+	Is Correctly Identified
R/S		RCL 26	
2nd LBL		)	
E	Compute The	=	
STO 24	Probability Of	STO 35	
÷	Detecting XLarge Flaws	RCL 21	
RCL 05		+	
=		RCL 22	Compute The Probability
STO 34		+	That A Hole Is Marked
R/S		RCL 23	As Flawed
2nd LBL	Store The Number Of	+	
2nd A	False Calls	RCL 24	
STO 25		+	

RCL 25		(
=		RCL 33
÷		X
RCL 01		RCL 09
=		)
STO 36		+
R S		(
2nd LBL		RCL 34
2nd B		X
(		RCL 10
1		)
-		)
RCL 36	Compute The Weighted	=
)	Average Of The	+
X	Probabilities Of Detecting	(
(	The Various Size Flaws	RCL 36
(	And The Ultrasonic Weights	X
RCL 31	Stored In Registers 07-10.	RCL 35
X	Then Normalize The	X
RCL 07	Weighted Average So That	RCL 11
)	The Maximum Achievable	)
+	Score Is 1. The Result	=
(	Is The Probability Score	÷
RCL 32	For The Technician Or	(
X	The Base/Command When	.846
RCL 08	Using The Ultrasonic	-
)	Technique.	(
+		.692

X		RCL 33
RCL 36		X
)		RCL 14
)		)
=		+
R/S		(
2nd LBL		RCL 34
2nd C		X
(	Compute The Probability	RCL 15
1	Score For A Technician	)
-	Or A Base/Command	)
RCL 36	Using The Eddy-Current	=
)	Technique.	+
X		(
(		RCL 36
(		X
RCL 31		RCL 35
X		X
RCL 12		RCL 16
)		)
+		=
(		÷
RCL 32		(
X		.823
RCL 13		-
)		(
+		.646
(		X

RCL 36

)

)

=

R|S

LRN

FILE: LABEL DATA AI NAVAL POSTGRADUATE SCHOOL

APPENDIX IV

```

UL    UU    LL    TTTTTTTTTT    RRRRRRR    A
UU    UU    LL    TT            RR      RR    AAA
UU    UU    LL    TT            RR      RR    AA
UL    U    LL    TT            RRRRRRR    AAA
C      U    LL    TT            RR      RR    AAA
      LU    LLLLLLLL    TT            RR      RR    AA

```

```

SSSSS    GOCC    NN    NA    II    CCCC
SS    SS    GO    CC    ANN    NA    II    CC    CC
SSS    SS    CC    CC    NNN    NN    II    CC    CC
SS    SS    GO    CC    NNN    NN    II    CC    CC
SSSSS    GOCC    NN    NN    II    CCCC

```

THE ATTACHED PAGES LIST ALL THE TECHNICIANS WHO PARTICIPATED IN THE ULTRASONIC PROFICIENCY TEST, BY NAME, FOR EACH EASE. THE PERFORMANCE OF EACH TECHNICIAN IS DESCRIBED BY NUMBER OF HITS AND MISSES HE SCORED, FOR THE FOUR DIFFERENT FLAW SIZES AND FOR THE UNFLAWED HOLES (THE COLUMN MARKED NONE; IN THIS COLUMN A HIT MEANS HE DID NOT MARK THE SITE).

ULTRA SONIC

BASE 1

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T113	HITS	1	9	10	5	117
	MISSES	3	2	0	0	1
T26	HITS	1	8	10	5	116
	MISSES	3	3	0	0	2
T18	HITS	0	8	5	5	116
	MISSES	4	3	1	0	2
T41	HITS	0	7	10	5	110
	MISSES	4	4	0	0	8
T87	HITS	0	10	9	5	101
	MISSES	4	1	1	0	17
T108	HITS	0	4	8	5	112
	MISSES	4	7	2	0	6
T109	HITS	2	10	5	5	94
	MISSES	2	1	1	0	24
T21	HITS	0	5	8	4	110
	MISSES	4	6	2	1	8
T98	HITS	1	5	8	5	103
	MISSES	3	6	2	0	15
T49	HITS	0	3	5	5	108
	MISSES	4	8	5	0	10
T73	HITS	1	6	8	5	94
	MISSES	3	5	2	2	24

BASE 2

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T134	HITS	1	10	10	5	110
	MISSES	3	1	0	0	8
T144	HITS	1	10	10	4	108
	MISSES	3	1	0	1	10
T133	HITS	0	8	8	5	114
	MISSES	4	3	2	2	4
T43	HITS	3	9	5	5	99
	MISSES	1	2	1	0	19

ULTRA SONIC

BASE 2

Target ID	HITS	MISSES	SMALL	MEDIUM	LARGE	XLARGE	NONE
T38	0	4	5	6	7	5	113
T31	2	2	8	5	8	5	99
T11	1	3	8	3	5	5	96
T61	0	4	5	6	4	5	113
T1C	1	3	8	3	9	4	95
T121	1	3	9	2	10	4	88
T9C	1	3	3	8	8	4	106
T2C	2	2	6	5	8	4	97
T117	2	2	8	3	6	5	87
T46	1	3	8	3	10	5	73
T135	2	2	6	5	6	5	86
T93	1	3	6	5	6	5	79
T142	0	4	5	6	4	5	102
T145	0	4	4	7	6	5	96
T122	1	3	4	7	7	3	88
T152	2	2	2	5	6	4	88

ULTRA SONIC

BASE 2

T29	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	8	7	4	40
		4	3	3	1	78
T148	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	3	5	1	78
		3	8	5	4	40
T113	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	7	8	4	13
		0	4	2	1	103

BASE 3

T105	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	9	9	3	77
		3	2	1	2	41
T103	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	6	9	4	73
		3	5	1	1	45
T149	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	4	6	2	98
		2	7	4	3	20
T39	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	6	5	4	92
		4	5	5	1	28
T22	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	10	8	5	78
		2	1	2	0	40
T120	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	5	8	5	86
		2	6	2	0	32
T15	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	7	4	3	72
		0	4	6	0	46
T9	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	6	9	5	94
		3	5	1	2	24
T95	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	6	5	4	93
		4	5	5	1	25
T50	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	2	2	1	91
		3	9	8	4	27
T58	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	7	9	5	71
		1	4	1	2	47

ULTRA SONIC

BASE 3

T57	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	5	7	5	45
		2	2	3	0	69
T8C	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	7	10	4	52
		0	4	0	1	66

BASE 4

T19	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	1	7	3	109
		3	10	3	2	9
T3C	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	5	7	4	1
		4	6	3	1	1

BASE

T52	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	5	6	4	96
		2	5	4	1	22
T7E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	2	5	5	100
		4	5	5	0	18
T130	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	5	9	3	68
		3	2	1	2	50
T114	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	5	5	5	57
		4	2	2	0	61
T110	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	5	7	4	67
		1	6	3	1	51
T4E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	2	6	4	70
		4	5	2	1	48
T137	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	6	6	2	41
		2	5	4	5	77

BASE 6

T81	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	4	5	5	98
		3	7	5	0	20

ULTRA SONIC

BASE 6

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T107	HITS	3	6	5	5	72
	MISSES	1	5	1	0	46
T47	HITS	0	3	5	5	97
	MISSES	4	8	5	0	21
T146	HITS	1	6	6	5	69
	MISSES	3	5	4	0	49
T141	HITS	1	6	7	4	61
	MISSES	3	5	3	1	57
T36	HITS	2	3	1	4	83
	MISSES	2	8	5	4	35
T23	HITS	2	1	3	1	69
	MISSES	2	10	7	4	49

BASE 7

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T92	HITS	1	5	5	5	99
	MISSES	3	6	5	0	19
T74	HITS	4	5	5	4	74
	MISSES	0	6	1	1	44
T111	HITS	1	3	6	4	91
	MISSES	3	8	4	1	27
T51	HITS	2	4	4	4	77
	MISSES	2	7	6	1	41
T17	HITS	1	6	5	1	74
	MISSES	3	5	5	4	44
T91	HITS	2	5	5	2	83
	MISSES	2	6	7	3	35
T64	HITS	1	4	5	0	86
	MISSES	3	7	7	5	32
T132	HITS	2	5	5	3	61
	MISSES	2	6	5	2	57

ULTRA SONIC

BASE 7

T85	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	5	1	1	87
		3	6	9	4	31
T106	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	0	3	2	92
		3	11	7	3	26

BASE 8

T65	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	9	9	4	88
		3	2	1	1	30
T125	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	8	8	5	69
		4	3	2	0	49
T99	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	7	10	5	51
		1	4	0	0	67
T97	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	9	10	5	43
		3	2	0	0	73
T14	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	8	9	4	44
		1	3	1	1	74
T86	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	7	10	5	42
		2	4	0	0	76
T88	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	10	10	5	21
		1	1	0	0	97
T89	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	10	8	5	34
		2	1	2	0	84
T25	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	5	5	3	75
		3	6	5	2	43
T35	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	4	7	4	71
		4	7	3	1	47
T40	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	8	10	5	24
		2	3	0	0	94
T76	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	5	6	3	45
		1	6	4	2	73
T83	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	8	9	5	20
		2	5	1	0	98

ULTRA SONIC

BASE 6

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T1C7	HITS	3	6	5	5	72
	MISSES	1	5	1	0	46
T47	HITS	0	3	5	5	97
	MISSES	4	8	5	0	21
T146	HITS	1	6	6	5	69
	MISSES	3	5	4	0	49
T141	HITS	1	6	7	4	61
	MISSES	3	5	3	1	57
T36	HITS	2	3	1	4	85
	MISSES	2	8	5	4	35
T23	HITS	2	1	3	1	69
	MISSES	2	10	7	4	49

BASE 7

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T92	HITS	1	5	5	5	99
	MISSES	3	6	5	0	19
T74	HITS	4	5	5	4	74
	MISSES	0	6	1	1	44
T111	HITS	1	3	6	4	91
	MISSES	3	8	4	1	27
T51	HITS	2	4	4	4	77
	MISSES	2	7	6	1	41
T17	HITS	1	6	5	1	74
	MISSES	3	5	5	4	44
T91	HITS	2	5	5	2	83
	MISSES	2	6	7	3	35
T64	HITS	1	4	3	0	86
	MISSES	3	7	7	5	32
T132	HITS	2	5	5	3	61
	MISSES	2	6	5	2	57

ULTRA SONIC

BASE 8

T28		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	10	10	4	7
	MISSES	0	1	0	1	111

BASE 9

T1		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	0	5	4	4	92
	MISSES	4	6	6	1	26
T44		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	5	4	2	94
	MISSES	3	6	6	3	24
T56		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	4	4	4	95
	MISSES	3	7	6	1	23
T104		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	0	6	4	2	93
	MISSES	4	5	6	3	25
T66		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	5	4	2	91
	MISSES	3	6	6	3	27

BASE 10

T7		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	5	6	5	85
	MISSES	3	6	4	0	33
T24		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	2	4	3	1	64
	MISSES	2	7	7	4	54
T55		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	0	5	4	100
	MISSES	3	11	5	1	18

BASE 11

T2		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	2	2	6	2	59
	MISSES	2	9	4	3	59

BASE 12

T6		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	2	7	5	5	68
	MISSES	2	4	1	0	50

ULTRA SONIC

BASE 12

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T67	HITS	0	1	1	4	109
	MISSES	4	10	9	4	9
T77	HITS	2	7	3	3	88
	MISSES	2	4	7	2	50
T102	HITS	0	1	5	2	75
	MISSES	4	10	5	2	43
T37	HITS	3	5	7	5	32
	MISSES	1	6	3	0	86
T53	HITS	1	4	7	5	98
	MISSES	3	7	3	0	20

BASE 13

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T42	HITS	1	7	9	5	91
	MISSES	3	4	1	0	27
T72	HITS	1	7	8	5	79
	MISSES	3	4	2	0	39
T60	HITS	1	6	5	4	85
	MISSES	3	5	5	1	33
T34	HITS	1	2	5	4	86
	MISSES	3	9	5	1	32
T123	HITS	1	2	6	5	77
	MISSES	3	9	4	0	41

BASE 14

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T84	HITS	1	4	7	4	85
	MISSES	3	7	3	1	33
T147	HITS	2	10	5	5	48
	MISSES	2	1	5	0	70
T143	HITS	3	6	1	5	81
	MISSES	1	5	5	5	57

ULTRA SONIC

BASE 14

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T151	HITS	2	2	2	2	85
	MISSES	2	5	8	2	25
T32	HITS	1	7	4	2	66
	MISSES	3	4	6	3	52
T150	HITS	1	8	5	4	43
	MISSES	3	3	5	1	75
T8	HITS	0	3	2	5	79
	MISSES	4	8	7	5	39
T94	HITS	1	1	1	2	85
	MISSES	3	10	5	5	29

BASE 15

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T96	HITS	2	7	7	5	115
	MISSES	2	4	3	0	3
T48	HITS	0	5	8	3	98
	MISSES	4	6	2	0	20
T127	HITS	0	5	4	3	87
	MISSES	4	6	6	2	31
T71	HITS	0	1	3	1	88
	MISSES	4	10	7	4	30
T136	HITS	3	4	6	0	71
	MISSES	1	7	4	5	47
T5	HITS	2	1	3	1	89
	MISSES	2	10	7	4	29

BASE 16

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T131	HITS	0	3	6	3	113
	MISSES	4	8	4	2	5
T62	HITS	1	2	1	2	98
	MISSES	3	5	5	3	20

FILE: BASE1 DATA A1 NAVAL POSTGRADUATE SCHOOL

ULTRA SONIC		BASE 16				
T82		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	0	4	4	4	67
	MISSES	4	7	6	1	51
T139		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	0	3	4	3	78
	MISSES	4	8	6	2	40
T63		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	0	1	2	2	98
	MISSES	4	10	8	3	20

EDDY CURRENT		BASE 1				
T109	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	11	6	4	113
		3	0	0	0	4
T140	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	7	6	4	114
		4	4	0	0	3
T4	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	6	6	4	114
		4	5	0	0	3
T73	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	10	6	4	108
		6	1	0	0	5
T101	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	5	5	4	113
		7	6	1	0	4
T128	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	8	11	6	4	86
		2	0	0	0	31
T33	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	7	6	4	104
		6	4	0	0	13
T116	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	7	5	0	88
		8	4	1	4	29
T3	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	10	5	4	82
		4	1	1	0	55
T115	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	7	4	4	85
		8	4	2	0	32
T54	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	7	1	4	94
		9	4	5	0	23
T129	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	5	6	4	79
		9	6	0	0	38
T12	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	5	4	1	87
		5	6	2	3	50
T112	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	9	10	5	4	23
		1	1	1	0	94
T79	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	8	10	5	4	7
		2	1	1	0	110

APPENDIX V

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EEEEEEEEEEEE CCCCCC CC CCCCCC YY YY YY
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CCCCC      LL      LU      RRRRRR      RRRRRR      EEEEEEEE NN      NN      TTTTTT
CC          C      UL      LU      RR      R      RR      R      EEEEEEE NN      NN      T
CC          C      UL      LU      RR      R      RR      R      EEEEE  NN      NN      T
CC          C      UL      LU      RR      R      RR      R      EEEEE  NN      NN      T
CC          C      UL      LU      RR      R      RR      R      EEEEE  NN      NN      T
CC          C      UL      LU      RR      R      RR      R      EEEEE  NN      NN      T
CCCCC      C      U      UU      RR      R      RR      R      EEEEEEEEE NN      NN      T

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THE ATTACHED PAGES LIST ALL THE TECHNICIANS WHO PARTICIPATED IN THE EDDY CURRENT PROFICIENCY TEST, BY NAME, FOR EACH BASE. THE PERFORMANCE OF EACH TECHNICIAN IS DESCRIBED BY NUMBER OF HITS AND MISSES HE SCORED, FOR THE FOUR DIFFERENT FLAW SIZES AND FOR THE UNFLAWED HOLES (THE COLUMN MARKED NONE; IN THIS COLUMN A HIT MEANS HE DID NOT MARK THE SITE).

EDDY CURRENT		BASE 2				
T1C	HITS MISSES	SMALL 4 6	MEDIUM 6 5	LARGE 5 1	XLARGE 4 0	NONE 113 4
T1E	HITS MISSES	SMALL 4 6	MEDIUM 6 5	LARGE 4 2	XLARGE 1 3	NONE 102 15
T2C	HITS MISSES	SMALL 5 5	MEDIUM 6 5	LARGE 6 0	XLARGE 4 0	NONE 100 17
T2S	HITS MISSES	SMALL 4 6	MEDIUM 7 4	LARGE 6 0	XLARGE 4 0	NONE 107 10
T122	HITS MISSES	SMALL 2 8	MEDIUM 7 4	LARGE 6 0	XLARGE 4 0	NONE 113 4
T144	HITS MISSES	SMALL 3 7	MEDIUM 5 6	LARGE 6 0	XLARGE 4 0	NONE 117 0
T148	HITS MISSES	SMALL 9 1	MEDIUM 10 1	LARGE 6 0	XLARGE 4 0	NONE 89 28
T9C	HITS MISSES	SMALL 6 4	MEDIUM 11 0	LARGE 6 0	XLARGE 4 0	NONE 114 5
T1C0	HITS MISSES	SMALL 6 4	MEDIUM 11 0	LARGE 5 1	XLARGE 4 0	NONE 115 2
T135	HITS MISSES	SMALL 8 2	MEDIUM 11 0	LARGE 6 0	XLARGE 4 0	NONE 111 0
T4E	HITS MISSES	SMALL 6 4	MEDIUM 10 1	LARGE 6 0	XLARGE 4 0	NONE 114 3
T3E	HITS MISSES	SMALL 5 5	MEDIUM 6 3	LARGE 6 0	XLARGE 4 0	NONE 117 0
T11	HITS MISSES	SMALL 9 1	MEDIUM 10 1	LARGE 5 1	XLARGE 3 1	NONE 107 10
T152	HITS MISSES	SMALL 4 6	MEDIUM 9 2	LARGE 6 0	XLARGE 4 0	NONE 113 4
T142	HITS MISSES	SMALL 9 1	MEDIUM 10 1	LARGE 6 0	XLARGE 4 0	NONE 105 12
T133	HITS MISSES	SMALL 9 1	MEDIUM 10 1	LARGE 6 0	XLARGE 4 0	NONE 105 12

ECY CURRENT

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T41	HITS	2	5	6	4	113
	MISSES	8	2	0	0	4
T145	HITS	6	7	6	4	108
	MISSES	4	4	0	0	9
T134	HITS	2	8	5	4	116
	MISSES	8	3	1	0	1
T59	HITS	5	10	6	4	113
	MISSES	5	1	0	0	4
T43	HITS	7	11	6	4	113
	MISSES	3	0	0	0	4
T117	HITS	6	11	6	4	115
	MISSES	4	0	0	0	2
T121	HITS	6	11	6	4	94
	MISSES	4	0	0	0	23
T16	HITS	6	10	6	4	99
	MISSES	4	1	0	0	18

BASE 3

		SMALL	MEDIUM	LARGE	XLARGE	NONE
T103	HITS	6	11	6	4	114
	MISSES	4	0	0	0	3
T9	HITS	10	10	4	1	104
	MISSES	0	1	2	3	13
T105	HITS	6	10	6	4	114
	MISSES	4	1	0	0	3
T118	HITS	5	11	6	4	112
	MISSES	5	0	0	0	5
T39	HITS	3	9	5	4	117
	MISSES	7	2	1	0	0
T120	HITS	4	11	5	4	114
	MISSES	6	0	1	0	3

EDDY CURRENT

BASE 3

T6E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	5	5	4	117
		10	2	1	0	0
T7E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	7	4	2	107
		7	4	2	2	10
T22	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	9	10	6	4	100
		1	1	0	0	17
T5E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	9	10	6	4	98
		1	1	0	0	19
T57	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	11	4	4	109
		6	0	2	0	8
T8C	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	11	5	4	91
		3	0	1	0	26
T27	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	6	4	4	96
		8	5	2	0	21
T1E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	6	1	1	96
		5	5	5	3	21
T9E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	10	6	4	88
		5	1	0	0	29
T149	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	7	4	4	81
		7	4	2	0	30
T5C	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	8	4	4	83
		5	3	2	0	54

BASE 4

T3C	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	9	10	5	4	115
		1	1	1	0	2
T1E	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	6	5	3	101
		6	5	1	1	16
T1E8	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	9	5	3	93
		4	2	1	1	24
T126	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	8	5	2	98
		4	3	1	2	19

EDDY CURRENT

T124		SMALL	MEDIUM	LARGE	XLARGE	BASE 4
	HITS	2	4	4	4	NONE
	MISSES	8	7	2	0	95
						22

BASE 5

T52	HITS	SMALL 9	MEDIUM 11	LARGE 6	XLARGE 4	NONE
	MISSES	1	0	0	0	116
						1
T78	HITS	SMALL 8	MEDIUM 6	LARGE 6	XLARGE 4	NONE
	MISSES	2	5	0	0	117
						0
T110	HITS	SMALL 9	MEDIUM 8	LARGE 6	XLARGE 4	NONE
	MISSES	1	3	0	0	109
						8
T120	HITS	SMALL 6	MEDIUM 3	LARGE 4	XLARGE 1	NONE
	MISSES	4	8	2	3	109
						8
T114	HITS	SMALL 7	MEDIUM 5	LARGE 6	XLARGE 4	NONE
	MISSES	3	2	0	0	110
						7
T127	HITS	SMALL 7	MEDIUM 7	LARGE 6	XLARGE 4	NONE
	MISSES	3	4	0	0	102
						15
T45	HITS	SMALL 7	MEDIUM 6	LARGE 6	XLARGE 4	NONE
	MISSES	3	5	0	0	111
						0
T70	HITS	SMALL 6	MEDIUM 6	LARGE 6	XLARGE 4	NONE
	MISSES	4	3	0	0	71
						40

BASE 6

T47	HITS	SMALL 6	MEDIUM 6	LARGE 6	XLARGE 4	NONE
	MISSES	4	5	0	0	116
						1
T146	HITS	SMALL 8	MEDIUM 10	LARGE 6	XLARGE 4	NONE
	MISSES	2	1	0	0	107
						10
T23	HITS	SMALL 4	MEDIUM 8	LARGE 6	XLARGE 4	NONE
	MISSES	6	3	0	0	111
						0
T107	HITS	SMALL 2	MEDIUM 7	LARGE 5	XLARGE 4	NONE
	MISSES	8	4	1	0	92
						25

EDGE CURRENT

BASE 6

T36		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	3	4	5	4	98
	MISSES	7	7	1	0	19
T141		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	5	9	6	3	72
	MISSES	5	2	0	1	45
T81		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	6	5	5	4	58
	MISSES	4	6	1	0	59

BASE 7

T74		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	9	6	4	116
	MISSES	3	2	0	0	1
T91		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	5	9	6	4	112
	MISSES	5	2	0	0	5
T106		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	1	7	6	4	117
	MISSES	5	4	0	0	0
T92		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	3	5	6	4	116
	MISSES	7	6	0	0	1
T111		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	2	10	6	4	111
	MISSES	8	1	0	0	6
T51		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	9	5	4	110
	MISSES	6	2	1	0	7
T64		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	9	6	4	108
	MISSES	6	2	0	0	9
T132		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	7	6	4	100
	MISSES	3	4	0	0	11
T17		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	8	7	6	4	102
	MISSES	2	4	0	0	15
T85		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	3	8	5	4	85
	MISSES	7	1	1	0	32

EDDY CURRENT		BASE 8				
T14	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	2	6	3	3	82
		8	5	3	1	35
T97	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	10	11	6	4	112
		0	0	0	0	5
T99	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	8	10	6	4	113
		2	1	0	0	4
T125	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	10	6	4	112
		3	1	0	0	5
T76	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	4	9	6	4	114
		6	2	0	0	3
T40	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	10	6	3	104
		3	1	0	1	13
T25	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	0	6	6	4	114
		10	5	0	0	3
T65	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	10	6	4	97
		4	1	0	0	20
T35	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	8	6	4	101
		5	3	0	0	16
T86	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	7	6	3	103
		5	4	0	1	14
T83	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	9	11	6	4	72
		1	0	0	0	45
T88	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	10	11	6	4	77
		0	0	0	0	40
T28	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	10	6	4	88
		5	1	0	0	29
T89	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	4	5	4	99
		9	7	1	0	18

EDDY CURRENT		BASE 10				
T7		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	8	11	6	4	113
	MISSES	2	0	0	0	4
T55		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	5	4	1	116
	MISSES	3	6	2	3	1
T24		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	5	4	4	2	89
	MISSES	5	7	2	2	26

		BASE 11				
T69		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	6	5	6	3	97
	MISSES	4	2	0	1	20
T119		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	3	5	5	3	89
	MISSES	7	6	1	1	28

		BASE 12				
T37		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	8	11	6	2	117
	MISSES	2	0	0	1	0
T67		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	11	6	4	117
	MISSES	3	0	0	0	0
T102		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	8	11	6	4	110
	MISSES	2	0	0	0	7
T6		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	10	11	5	4	98
	MISSES	0	0	1	0	19
T53		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	11	6	4	88
	MISSES	3	0	0	0	29

		BASE 13				
T42		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	9	11	6	4	111
	MISSES	1	0	0	0	0
T34		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	6	5	5	4	107
	MISSES	4	2	1	0	10

EDDY CURRENT

		BASE 13				
T72	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	5	6	3	104
		3	2	0	1	13
T60	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	10	6	4	95
		4	1	0	0	22
T123	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	8	11	6	4	72
		2	0	0	0	45

BASE 14

T84	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	5	4	1	109
		5	5	2	2	8
T32	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	8	6	4	101
		4	3	0	0	10
T143	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	7	5	3	113
		4	4	1	1	4
T94	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	1	4	5	4	109
		9	7	1	0	8
T8	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	7	5	4	82
		4	4	1	0	35
T151	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	6	4	3	95
		7	5	2	1	22
T147	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	3	8	5	3	43
		7	5	1	1	74
T150	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	5	4	5	1	52
		5	7	1	3	65

BASE 15

T96	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	7	11	6	4	117
		3	0	0	0	0
T48	HITS	SMALL	MEDIUM	LARGE	XLARGE	NONE
	MISSES	6	9	6	4	110
		4	2	0	0	1

EDDY CURRENT

BASE 15

T5		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	5	6	4	113
	MISSES	6	2	0	0	4
T71		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	6	6	4	116
	MISSES	6	5	0	0	1
T127		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	6	10	6	4	99
	MISSES	4	1	0	0	18
T136		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	6	5	5	1	92
	MISSES	4	6	1	3	25

BASE 16

T82		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	10	6	4	106
	MISSES	6	1	0	0	11
T131		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	7	5	5	1	98
	MISSES	3	2	1	1	21
T139		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	2	5	5	4	57
	MISSES	8	2	1	0	60
T62		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	4	4	5	2	77
	MISSES	6	7	5	2	40
T63		SMALL	MEDIUM	LARGE	XLARGE	NONE
	HITS	3	5	5	1	85
	MISSES	7	5	5	1	32

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