

PR 97-02

ANALYSIS OF THE JULY 1997 EXAM

**Stephen P. Klein, Ph.D.
Roger Bolus, Ph.D.**

GANSK & ASSOCIATES

December 15, 1997

SUMMARY

The July 1997 exam had two sections: the Multistate Bar Examination (MBE), a 200-item multiple choice test; and a Written Examination composed of six essay questions and two Performance Test (PT) problems. There were 7678 applicants who completed both sections, 25% of whom had taken the GBX at least once before.

MBE raw scores (the number of questions answered correctly) were converted to scale scores that controlled for possible differences in average item difficulty from one administration of the exam to the next. Essay and PT answers were graded on a 40 to 100 point scale. Scores on this scale were assigned in 5-point intervals. Each PT score was then multiplied by 2 so that the maximum possible Written raw score was 1,000 points.

Written raw scores were converted to the same scale of measurement as was used on the MBE. This was done to adjust for possible differences over time in the difficulty of the questions asked and the leniency with which the answers to them are graded. An applicant's total score was computed using the formula below:

$$\text{Total Scale Score} = (.35)(\text{MBE Scale}) + (.65)(\text{Essay Scale})$$

A three-phased grading process was used to determine an applicant's pass/fail status. In Phase 1, the applicant was failed if the total scale score was less than 1390, passed if it was 1466 or higher, and placed in reread if it was at least 1390 but below 1466.

In Phase 2, applicants in the reread group had all of their essay and PT answers read a second time. At the end of this phase, applicants were: failed if their Total scores were below 1412, passed if their scores were 1440 or higher, and placed in reappraisal if their scores were in the 1412 - 1439.9999 range. Applicants also were placed in reappraisal if their Total score after the first reading was 1440 or higher (i.e., even if their average was less than 1412).

An applicant in the reappraisal group had all of his or her answers and scores reviewed as a set by a member of the Board of Reappraisers who then made a final pass/fail decision. Thus, an applicant's answers were read once, twice, or three times depending upon how close that applicant came to the pass/fail line of 1440.

The major findings with the applicants who had all of their answers read at least once and the group of 1505 applicants who had them read at least twice were as follows:

- After the first reading of all answers, 26% of the applicants failed and 54% passed. The total percent passing after the second reading and the reappraisal process were 61% and 63%, respectively.
- California applicants scored higher than the national average on all of the six MBE subjects.

- The reliability of the Written and Total scores (.75 and .89, respectively) was comparable to that of previous July exams.
- The correlation between MBE and Written scores (.68) was in the normal range for a July exam.
- The phased grading cutoff scores led to rereading and reappraising the answers of the applicants who were most likely to benefit from these additional reviews.
- Males tended to earn higher scale scores on the MBE than on the Written section. The reverse was true for females. Racial and ethnic minority applicants tended to earn the same scale scores on the MBE as they did on the Written section.

ANALYSIS OF THE JULY 1997 EXAM

TEST SECTIONS

The July 1997 exam had two sections: the Multistate Bar Examination (MBE), a 200-item multiple choice test; and a Written section composed of six (1-hour) essay questions and two (3-hour) Performance Test (PT) problems. The exam was administered over three consecutive days, with two 3-hour sessions per day. Day 1 consisted of essay questions 1 - 3 and PT problem A. Day 2 was devoted to the MBE. Day 3 consisted of essay questions 4 - 6 and PT problem B.

SCORING RULES, FORMULAS, AND PHASED GRADING

MBE raw scores (the number of MBE questions answered correctly) were converted by the American College Testing Program (ACT) to equated ("scaled") scores and then multiplied by 10 using the formula below. This procedure adjusts raw scores for possible differences in mean question difficulty from one administration of the MBE to another.

$$\text{MBE Scale} = (9.1263)(\text{MBE Raw}) + 293.3129$$

Each essay answer was graded in 5-point intervals on a 40 to 100-point scale. The same procedure was used to grade each PT answer. PT scores were then multiplied by 2 so that the maximum possible Written raw score was 1,000 points (6 essays at 100 points each plus 2 PT problems at 200 points each). Written raw scores were converted to a score distribution that had the same mean and standard deviation as the applicants' MBE scores. This scaling was done using the MBE and Written scores of the random sample of about 1,000 applicants who had their Written answers graded first. The formula used to convert written raw scores to scale scores was:

$$\text{Written Scale} = [154.265][(\text{Written Raw} - 658.26)/52.91] + 1487.0409$$

An applicant's Total scale score was a weighted combination of that applicant's MBE and Written scale scores. The formula for computing Total scale scores was:

$$\text{Total Scale Score} = (.35)(\text{MBE Scale}) + (.65)(\text{Written Scale})$$

A three-phased grading process was used to determine an applicant's pass/fail status. In Phase 1, applicants failed if their total scale score was less than 1390, passed if it was 1466 or higher, and placed in reread if it was at least 1390 but below 1466.0. In Phase 2, the applicants in reread had all of their essay and PT answers read a second time. The second reader on an answer was a different grader than the first reader and the second reader did not know the score assigned by the first reader. The scores assigned on the first and second readings were averaged and a new total computed using the formulas above. At the end of Phase 2, applicants failed if the new total was below 1412, passed if it was 1440 or higher, and placed in reappraisal if it was above 1411.9999 but below 1440.

Applicants also were placed in reappraisal if their total scale score on the first reading was 1440 or higher even if their mean total after two readings was below 1412. An applicant in the reappraisal group had all of his or her answers and scores reviewed as a set by a member of the Board of Reappraisers who then made a final pass/fail decision. Thus, an applicant's answers were read once, twice, or three times depending upon how close that applicant was to the pass/fail line of 1440.

SAMPLE

Analyses were conducted with the 7678 applicants who had both an MBE and a Written score. This sample contained 5796 applicants who were taking the exam for the first time and 1882 repeaters. The percentage of applicants from ABA approved, California Accredited, and Nonaccredited schools were 71, 15, and 4, respectively. The remaining applicants were not assigned to a school.

MULTISTATE BAR EXAMINATION (MBE)

Table 1 shows California applicants scored higher than the national average on all six MBE subtests. California's mean total raw score (the average number of questions answered correctly) was about 4 points higher than the national average (which included California scores).

Table 1 - NATIONAL AND CALIFORNIA MEAN MBE SCORES
AND THE DIFFERENCE BETWEEN THESE MEANS

Test Score	Number of Items	National Mean	California Mean	Difference
Constitutional Law	33	23.25	23.98	0.63
Contracts	34	20.66	21.64	0.98
Criminal Law	33	19.69	20.45	0.76
Evidence	33	20.27	20.74	0.47
Real Property	33	19.78	20.28	0.50
Torts	34	21.93	22.75	0.82
Total Raw	200	125.57	129.84	4.16
NCBE/ACT Scale	200	143.92	147.84	3.92

WRITTEN SECTION

There were 1505 applicants who had their answers read at least twice. On the average, an applicant's total written raw score on the first reading was 1.2 points higher than it was on the second reading. The correlation between these scores was .42. This value underestimates the true degree of agreement between readers because reread was limited to applicants near the pass/fail line. Table 2 shows the means and standard deviations on each question after all readings.

Table 2 - SUMMARY STATISTICAL DATA ON THE WRITTEN SECTION AFTER ALL READINGS

Question Number	Essay Content Area(s) and PT Tasks	Mean Score	Standard Deviation
1	Evidence	66.78	11.06
2	Constitutional Law	66.29	7.94
3	Professional Responsibility	65.49	9.07
4	Civil Procedure	63.84	8.46
5	Corporations	64.36	7.88
6	Criminal Law	65.68	6.36
PT-1	Draft memo to partner	132.50	13.88
PT-2	Draft persuasive arbitration brief and memo explaining settlement agreement	130.46	15.31

SUMMARY STATISTICS

Table 3 presents summary statistical data on each section after all readings. There was a .68 correlation between MBE and Written scores. Law School Admission Test (LSAT) scores correlated .57, .56, and .61 with MBE, Written, and Total Scale scores, respectively. There were 7158 applicants with useable LSAT scores.

Table 3 - SUMMARY TEST STATISTICS AFTER ALL READINGS

Test Statistic	MBE Scale	Written Raw	Total Scale
Mean Score	1478.37	655.44	1478.63
Standard Deviation	150.99	50.41	137.09
Reliability	.87	.75	.89

The MBE's reliability was computed by ACT using national data.

SUBGROUP ANALYSES

On the average, women scored 23 points higher on the Written section than on the MBE whereas there was a 28 point average differential in the opposite direction for male applicants (Table 4). On the average, racial and ethnic minority groups scored about as highly on the Written section as they did on the MBE.

Table 4 - MEAN SCALE SCORES WITHIN RACIAL/ETHNIC AND GENDER GROUPS AND THE NUMBER OF APPLICANTS AND PERCENTAGE OF MALES WITHIN EACH GROUP*

Test	Racial/Ethnic Group				Gender	
	Anglo	Asian	Black	Hispanic	Female	Male
Written	1498	1469	1379	1439	1496	1465
MBE	1499	1467	1384	1436	1463	1492
Total	1498	1468	1381	1438	1484	1474
N	4790	1020	511	620	3468	4147
% Male	56%	49%	48%	54%	0%	100%

* There were 674 applicants who did not fall in one of the four largest racial/ethnic groups and 63 applicants who did not provide all demographic data.

PHASED GRADING

A three-phased grading process was used to focus reader time on the applicants who were near the pass/fail line. Table 5 presents the number and percentage of applicants in each of the exam's pass/fail categories. Overall, 4852 (63.2%) of the applicants passed.

Table 5 - NUMBER AND PERCENTAGE OF APPLICANTS WHO PASSED AND FAILED IN EACH PHASE OF THE MULTIPHASED GRADING PROCESS

Phase	Fail		Pass		Total	
	Number	Percent	Number	Percent	Number	Percent
1	2014	26.2	4159	54.2	6173	80.4
2	435	5.7	563	7.3	998	13.0
3	377	4.9	130	1.7	507	6.6
Total	2826	36.8	4852	63.2	7678	100.0

Table 6 shows the number of Phase 2 applicants who passed and failed relative to their Phase 1 scores. This table illustrates the strong relationship between Phase 1 scores and final pass/fail status. These data also indicate that the width of the Phase 2 reread band (1390 - 1466) was about right in that almost all the applicants with relatively high scores on the first reading passed and almost all with low initial scores failed.

Table 6 - NUMBER OF REREAD APPLICANTS WHO PASSED AND FAILED RELATIVE TO THEIR TOTAL SCORES AFTER THE FIRST READING

Score After the First Reading	Number of Applicants			Percent Passing
	Fail	Pass	Total	
1450 - 1466	52	324	376	86
1435 - 1449	96	188	284	66
1420 - 1434	197	115	312	37
1405 - 1419	244	48	292	16
1390 - 1404	223	18	241	7
Total	812	693	1505	46

The higher an applicant's score at the end of Phase 2, the greater the likelihood that applicant passed as a result of reappraisal (Table 7). The lower limit of the reappraisal band (1412) appears to be appropriate because none of the applicants with Phase 2 Total scores below 1415 passed as a result of reappraisal.

Table 7 - NUMBER OF APPLICANTS IN REAPPRAISAL WHO PASSED AND FAILED RELATIVE TO THEIR TOTAL SCORES AFTER REREAD

Total Score After Reread	Number of Applicants			Percent Passing
	Fail	Pass	Total	
1435 - 1439	30	57	87	66
1430 - 1434	53	34	87	39
1425 - 1429	90	25	115	22
1420 - 1424	81	10	91	11
1415 - 1419	72	4	76	5
< 1415	51	0	51	0
Total	377	130	507	26

APPENDIX A: SUMMARY TEST STATISTICS ON FEBRUARY EXAMS

Exam	N	Percent Passing	Mean MBE Scale Score	Written Raw Score		
				Mean	Reliability	Correlation with MBE
1991	3685	51	1430	667	.68	.58
1992	3907	51	1432	663	.69	.60
1993	3682	45	1418	666	.73	.59
1994	3638	44	1421	657	.68	.59
1995	3488	42	1412	653	.74	.60
1996	3834	44	1417	646	.67	.58
1997	4103	49	1434	651	.66	.59

APPENDIX B: SUMMARY TEST STATISTICS ON JULY EXAMS

Exam	N	Percent Passing	Mean MBE Scale Score	Written Raw Score		
				Mean	Reliability	Correlation with MBE
1990	6963	58	1451	684	.76	.67
1991	7219	55	1454	674	.75	.67
1992	7108	60	1464	674	.71	.64
1993	7018	59	1465	671	.77	.68
1994	7027	64	1482	672	.76	.70
1995	7109	60	1471	660	.75	.68
1996	7445	56	1458	667	.76	.70
1997	7678	62	1478	655	.75	.68