

TRAVEL TIME REPORT

Casualty Actuarial Society Education Policy Committee
October 2003

Executive Summary

The attached report shows three separate sets of exhibits:

- Travel time by ACAS / FCAS class
- Exam progress statistics
- Travel time from employment date (Board definition).

The data on time from first employment, year beginning cohorts, is a valid measure of how long it takes to get to ACAS or FCAS. Median travel time to FCAS from employment date has plateaued at about 8.5 years; it has not been increasing from historical levels.

On the other hand, the travel time by ACAS / FCAS class, year ending cohorts, is not a valid measure of how long it takes to get to ACAS or FCAS. This measure is distorted by significant changes over time in the number of people entering the profession. The travel time by ACAS / FCAS class continues to increase or remain at record high levels under both the old and new definitions.

The exam progress statistics, give an indication of what has been happening recently; they are encouraging. For the last three sittings these statistics are at the highest levels reported over the last 20 years. This is due both to an increase in the average number of exams taken (due to the elimination of partitioned exams), and higher pass ratios.

The increase in exam progress statistics has yet to have an impact on the observed travel time. The current FCAS/ACAS classes were those hardest hit by partitioning, and most of those benefiting from the elimination of partitioned exams are not yet Associates. Many of the new ACAS's in 2004 and 2005, however, should have benefited from the changes, and we should begin to see a reduction in ACAS travel time. It will take longer, however, before we see a reduction in FCAS travel time.

We have now developed an extensive database containing the records of roughly 15,000 candidates. We have also obtained initial employment dates for two-thirds of Fellows and Associates. Over the coming year we will use this data to improve our insights into the causes for the changes in travel time.

Travel Time by ACAS/FCAS Class

Current travel times are still driven largely by the old (pre-2000) exam system because candidates recognized at both the Spring and Fall 2002 meetings had written most of their exams under the old system. We continue to see very long travel times with the partitioned exams, due, at least in part, to the fact that many candidates wrote only one part of an exam at any sitting.

The attached statistics provide two measures of the number of sittings to ACAS/FCAS. Under the "Old Calculation" the number of sittings required to obtain either ACAS or FCAS is set equal to the number of sittings available since the first CAS exam, plus two. The "Actual Number of Sittings" is determined by reviewing the records of both the CAS and SOA and adding all exam sittings (passed and failed). If a candidate wrote one or more exams at a sitting this is counted as one sitting, irrespective of whether or not the exam(s) in question were partitioned or not. The actual number of sittings for ACAS is higher than the number of sittings determined by the old calculation. Most of this difference is eliminated if the Fellowship exams are excluded. For Fellows, the actual number of sittings is lower than the number determined by the

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old calculation. This may be due to the fact that the new calculation does not count sessions where the candidate is unable to write an exam.

The actual number of sittings is a more accurate measure of travel time than the old calculation because it does not count exam sittings that were skipped for any reason. It also accounts for the complete history of joint exams. Starting with next year's report, we will no longer include travel time under the old calculation.

ACAS – The 108 new Associates recognized in the Fall of 2003 showed about the same average travel time as the previous year. Their travel times were 15.6 sittings (about 8 years) under the old calculation and 16.4 actual sittings (15.8 actual sittings excluding Fellowship Exams).

FCAS – The 128 new Fellows recognized in the Fall of 2003 also show an increase in average travel time with 20.2 sittings (about 10 years) under the old calculation and 18.8 actual number of sittings.

Travel Time: Exam Progress Statistics

Average Number of Exams Taken

The Exam Progress Statistics continue to show that the departmented exams starting in 2000 have increased the average candidate progress at each sitting. During the 1990's when some of our exams were partitioned, candidates were taking about 75-80% of an exam on average, making less progress towards membership qualification at each sitting. The average number of exams taken has returned to pre-partitioning levels.

Joint Exams – The average number of exams taken has consistently exceeded 1.00.

Pass Ratios for Exams

CAS Exams – The pass ratios for the Spring 2002 and 2003 exams were significantly higher than previous years.

Joint Exams – The pass ratios for all of the joint exams continues to show an increase since Spring 2000. The pass ratio for CAS candidates was better than the pass ratios for all candidates for the Fall 2002 exams. For the Spring 2003 exams, the pass ratio for the CAS candidates was equal to the pass ratio for all candidates. Prior to the Fall 2002 exams, the CAS candidates had lower pass ratios than all candidates.

Exam Progress

As a result of higher pass ratios, and an increase in the average number of exams taken, the exam progress statistics are at an all time high.

Travel Time from Employment Date

At the Board's request, the Education Policy Committee is also tracking travel time from one's first date of employment in the property-casualty industry to Fellowship. This report shows travel time by year of initial employment. Since some candidates can take over 20 years to reach FCAS or ACAS, these figures are not

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complete for 1983 and later years. However, we believe that the data will not change significantly for years 1990 and prior. This analysis shows that travel time for Fellows has increased from 7 years in the early 1970's to 8.5 years in the late 1980's. Recent data indicates that travel time has stabilized at 8.5 years. For Associates, travel time has remained fairly stable at 6 years since the change in requirements in the mid 1970's. It should be noted that with the exception of a few years in the early 1970's, actual travel time has exceeded the Boards objective of a median travel time of 5 to 7 years. We currently have initial employment dates for two thirds of all Fellows and Associates. The Committee will continue to collect the employment dates for both candidates and members and make this a permanent part of the annual travel time report.

Travel Time by Class

— Actual Number of Sittings —

Associateship Class

<u>Class</u>	<u>ACAS Class Size</u>	<u>Old Calculation to Achieve ACAS</u>	<u>Actual Number of Sittings to ACAS</u>	<u>Actual Number of Sittings to ACAS Excluding Any Fellowship Exams</u>
Fall 2000	33	11.9	15.3	13.2
Spring 2001	33	14.6	17.4	16.1
Fall 2001	92	12.7	13.7	13.3
Spring 2002	38	15.2	16.7	15.7
Fall 2002	114	15.8	16.2	15.7
Spring 2003	38	15.7	16.3	15.8
Fall 2003	108	15.6	16.4	15.8

Fellowship Class

<u>Class</u>	<u>FCAS Class Size</u>	<u>Old Calculation to Achieve FCAS</u>	<u>Actual Number of Sittings to FCAS</u>
Fall 2000	135	17.6	16.8
Spring 2001	29	18.1	16.7
Fall 2001	116	19.2	18.1
Spring 2002	19	18.5	19.3
Fall 2002	145	19.5	18.2
Spring 2003	30	17.2	17.9
Fall 2003	128	20.2	18.8

Notes

- *Class* refers to the CAS meeting when members are recognized (i.e., six months after the exam sitting).
- *Old Calculation to Achieve ACAS/FCAS* refers to the method of tracking travel time prior to the implementation of the 2000 education and examinations structure. It will be included in this report for a few years in order to make comparisons with the old method. [The old method tracked the number of potential examination sessions from the first CAS-specific examination until achieving the designation. Sittings for Parts 1 & 2 (pre-2000) were included, but only for the successful examination session.]
- *Actual Number of Sittings to ACAS/FCAS* shows the average number of exam sessions that the candidates actually sat for examinations to achieve the specified designation.
- *Differences between the old and new calculations:* The old method was consistent but only listed CAS-specific exams and added two additional sittings to represent successful completion of old Parts 1 and 2. It demonstrated how many potential sittings there were from the “starting point” until the attainment of the designation regardless of whether the candidate actually sat for an exam every session. Old Parts 3A and 3C were not included in the count—nor was the old pre-partitioned Part 3. In preparing the new class statistics that will be used for the classes of 2000 and beyond, the CAS Office obtains the complete history of joint examinations for each person and adds it to the CAS database. This new statistics accurately reflect the number of exam sessions in which the candidate actually participated, including joint exams.

Travel Time by Class

— Old Calculation —

<u>Class</u>	<u>ACAS Class Size</u>	<u>FCAS Class Size</u>	<u>Potential Sittings to Achieve ACAS</u>	<u>Potential Sittings to Achieve FCAS</u>
Spring 1980	37	13	8.6	11.7
Fall 1980	19	25	9.5	12.8
Spring 1981	37	11	8.5	14.2
Fall 1981	16	32	7.6	12.6
Spring 1982	51	12	7.8	14.6
Fall 1982	17	51	9.9	13.1
Spring 1983	60	18	9.3	14.1
Fall 1983	6	28	9.5	12.8
Spring 1984	59	18	10.4	12.3
Fall 1984	7	35	9.6	13.5
Spring 1985	67	19	10.7	13.0
Fall 1985	9	28	11.5	13.9
Spring 1986	82	19	11.2	13.0
Fall 1986	24	34	10.0	13.4
Spring 1987	66	22	11.1	15.5
Fall 1987	24	39	9.9	14.1
Spring 1988	61	19	12.3	14.8
Fall 1988	26	41	10.2	13.0
Spring 1989	77	14	12.7	16.9
Fall 1989	34	52	10.0	14.2
Spring 1990	87	16	11.3	14.8
Fall 1990	54	54	10.4	14.1
Spring 1991	75	5	10.4	15.6
Fall 1991	64	59	11.3	13.4
Spring 1992	99	15	11.4	11.9
Fall 1992	41	62	12.1	14.7
Spring 1993	101	11	12.8	14.5
Fall 1993	60	85	12.2	14.7
Spring 1994	150	17	12.3	16.4
Fall 1994	75	86	12.3	16.7
Spring 1995	122	17	12.3	19.5
Fall 1995	78	97	13.0	15.9
Spring 1996	136	19	12.3	15.0
Fall 1996	83	104	12.6	16.7
Spring 1997	113	16	12.2	15.3
Fall 1997	95	109	13.5	18.3
Spring 1998	119	18	13.5	17.7
Fall 1998	58	126	14.7	17.2
Spring 1999	167	13	13.8	15.5
Fall 1999	55	124	14.2	18.3
Spring 2000	150	14	16.0	17.4
Fall 2000	33	135	11.9	17.6
Spring 2001	33	29	14.6	18.1
Fall 2001	92	116	12.7	19.2
Spring 2002	38	19	15.2	18.5
Fall 2002	114	145	15.8	19.5
Spring 2003	38	30	15.7	17.2
Fall 2003	108	128	15.6	20.2

“Class” refers to the CAS meeting when members are recognized. This report indicates the number of potential sittings to the CAS designation after taking the first CAS-specific examination. Sittings for Parts 1 & 2 (pre-2000) are included, but only for the successful examination session.

Travel Time: Exam Progress Statistics

— CAS-Specific Exams —

<u>CAS Examination</u>	<u>Exam Progress</u> ¹	<u>Pass Ratio</u> ²	<u>Average Number of Exams Taken</u> ³
Spring 1983	0.36	0.35	1.02
Fall 1983	0.29	0.29	1.01
Spring 1984	0.38	0.38	1.01
Fall 1984	0.35	0.35	1.01
Spring 1985	0.36	0.36	1.02
Fall 1985	0.40	0.39	1.02
Spring 1986	0.37	0.37	1.02
Fall 1986	0.38	0.37	1.01
Spring 1987	0.37	0.36	1.02
Fall 1987	0.35	0.35	1.01
Spring 1988	0.35	0.34	1.02
Fall 1988	0.36	0.36	1.01
Spring 1989	0.36	0.35	1.01
Fall 1989	0.39	0.39	1.01
Spring 1990	0.33	0.33	1.01
Fall 1990	0.26	0.34	0.76
Spring 1991	0.33	0.38	0.87
Fall 1991	0.28	0.36	0.77
Spring 1992	0.30	0.38	0.80
Fall 1992	0.30	0.38	0.81
Spring 1993	0.29	0.38	0.78
Fall 1993	0.30	0.38	0.78
Spring 1994	0.30	0.38	0.79
Fall 1994	0.30	0.39	0.76
Spring 1995	0.29	0.37	0.78
Fall 1995	0.27	0.36	0.76
Spring 1996	0.31	0.40	0.78
Fall 1996	0.29	0.40	0.74
Spring 1997	0.30	0.38	0.79
Fall 1997	0.24	0.33	0.73
Spring 1998	0.31	0.38	0.81
Fall 1998	0.24	0.34	0.73
Spring 1999	0.30	0.40	0.77
Fall 1999	0.29	0.40	0.73
Spring 2000	0.38	0.38	1.01
Fall 2000	0.38	0.38	1.01
Spring 2001	0.39	0.39	1.01
Fall 2001	0.38	0.38	1.00
Spring 2002	0.46	0.46	1.00
Fall 2002	0.42	0.42	1.00
Spring 2003	0.46	0.45	1.01

¹ The number of full examination equivalents passed per candidate. (This is a product of the second and third columns.)

² The number of full examination equivalents passed per exam equivalent taken.

³ The number of full examination equivalents taken per candidate.

Notes

- A. This report was revised in March 1999 to reflect only CAS-specific examinations, not exams jointly administered with the SoA. In the past, only pass information was consistently recorded for joint exams; most unsuccessful attempts were not included. The revised statistics reflect consistent data from sitting to sitting.
- B. Partitioning of examinations began in Spring 1987 with Part 3 when it was partitioned into Parts 3a, 3b and 3c. In 1990, the CAS introduced Part 3B; Part 3b was replaced with CAS Part 5B. Part 4 was partitioned into Parts 4A and 4B beginning in Spring 1992. Parts 5A and 5B were not offered in Spring prior to Spring 1994.
- C. A new education and examination structure was implemented in Spring 2000. Data consistently reflects CAS-specific examinations.

Travel Time: Exam Progress Statistics

— Joint Exams —

All Candidates

<u>CAS/SoA Examination</u>	<u>Exam Progress</u> ¹	<u>Pass Ratio</u> ²	<u>Average Number of Exams Taken</u> ³
Spring 2000	0.28	0.27	1.03
Fall 2000	0.35	0.34	1.03
Spring 2001	0.37	0.36	1.04
Fall 2001	0.40	0.38	1.05
Spring 2002	0.44	0.42	1.07
Fall 2002	0.45	0.43	1.06
Spring 2003	0.41	0.39	1.06

CAS Candidates

<u>CAS/SoA Examination</u>	<u>Exam Progress</u> ¹	<u>Pass Ratio</u> ²	<u>Average Number of Exams Taken</u> ³
Spring 2000	0.23	0.23	1.02
Fall 2000	0.28	0.27	1.01
Spring 2001	0.28	0.27	1.01
Fall 2001	0.34	0.33	1.03
Spring 2002	0.37	0.36	1.04
Fall 2002	0.49	0.47	1.04
Spring 2003	0.41	0.39	1.04

¹ The number of full examination equivalents passed per candidate. (This is a product of the second and third columns.)

² The number of full examination equivalents passed per exam equivalent taken.

³ The number of full examination equivalents taken per candidate.

Note

The Exam Progress Statistics for exams jointly administered by the CAS and SoA are presented separately because the two societies maintain independent databases with different candidate identification numbers. This first chart provides statistics for all candidates who took joint Exams 1-4; the second chart represents only those candidates who indicate on their application forms that they work in the property-casualty industry.

CAS Examination Pass Statistics

Exam		S 2000	F 2000	S2001	F2001	S2002	F2002	S2003											
1	Exams Taken	2667	2526	3498	3508	4860	4740	5398											
	Passed	618	857	1167	1178	2096	1713	2057											
	Raw Pass Ratio	23.2	33.9	33.4	33.6	43.1	36.1	38.1											
	Effective Pass Ratio	26.3	36.7	37.4	37.9	46.5	41.5	41.3											
2	Exams Taken	1903	1952	2115	2115	2549	2758	2710											
	Passed	509	629	676	860	949	1360	961											
	Raw Pass Ratio	26.7	32.2	32.0	40.7	37.2	49.3	35.5											
	Effective Pass Ratio	29.4	33.6	35.2	43.0	40.1	51.8	37.6											
3	Exams Taken	1375	1466	1526	1450	1776	1765	2077											
	Passed	438	528	651	605	745	705	820											
	Raw Pass Ratio	31.9	36.0	42.7	41.7	41.9	39.9	39.5											
	Effective Pass Ratio	36.5	39.3	46.2	45.6	46.4	43.4	42.8											
4	Exams Taken	913	963	1008	1149	1272	1283	1215											
	Passed	309	356	409	491	564	739	613											
	Raw Pass Ratio	33.8	37.0	40.6	42.7	44.3	57.6	50.5											
	Effective Pass Ratio	37.3	41.0	43.3	46.5	47.7	60.3	51.8											
5	Exams Taken	606	n/a	524	n/a	458	n/a	497											
	Passed	216	n/a	190	n/a	199	n/a	214											
	Raw Pass Ratio	35.6	n/a	36.3	n/a	43.4	n/a	43.1											
	Effective Pass Ratio	42.9	n/a	43.7	n/a	49.4	n/a	46.1											
6	Exams Taken	n/a	623	n/a	596	n/a	543	n/a											
	Passed	n/a	189	n/a	208	n/a	217	n/a											
	Raw Pass Ratio	n/a	30.3	n/a	34.9	n/a	40.0	n/a											
	Effective Pass Ratio	n/a	40.6	n/a	44.7	n/a	48.0	n/a											
7-CN	Exams Taken	40	n/a	48	n/a	47	n/a	58											
	Passed	18	n/a	19	n/a	19	n/a	23											
	Raw Pass Ratio	45.0	n/a	39.6	n/a	40.4	n/a	39.7											
	Effective Pass Ratio	46.2	n/a	41.3	n/a	43.2	n/a	42.6											
7-US	Exams Taken	516	n/a	494	n/a	442	n/a	378											
	Passed	202	n/a	203	n/a	207	n/a	164											
	Raw Pass Ratio	39.1	n/a	41.1	n/a	46.8	n/a	43.4											
	Effective Pass Ratio	46.9	n/a	45.0	n/a	50.2	n/a	44.8											

CAS Examination Pass Statistics

Exam		S 2000	F 2000	S2001	F2001	S2002	F2002	S2003											
8	Exams Taken	319	n/a	310	n/a	349	n/a	331											
	Passed	129	n/a	124	n/a	175	n/a	170											
	Raw Pass Ratio	40.4	n/a	40.0	n/a	50.1	n/a	51.4											
	Effective Pass Ratio	45.4	n/a	44.6	n/a	54.3	n/a	53.6											
9	Exams Taken	n/a	324	n/a	308	n/a	299	n/a											
	Passed	n/a	126	n/a	135	n/a	138	n/a											
	Raw Pass Ratio	n/a	38.9	n/a	43.8	n/a	46.2	n/a											
	Effective Pass Ratio	n/a	45.8	n/a	49.3	n/a	50.4	n/a											
Part		S 1991	F 1991	S 1992	S 1992	S 1993	F1993	S 1994	F 1994	S 1995	F 1995	S 1996	F 1996	S 1997	F 1997	S 1998	F1998	S1999	F1999
3B	Exams Taken	610	773	611	611	533	498	441	438	375	422	352	354	347	216	87	143	68	49
	Passed	261	335	252	252	223	210	186	192	160	162	153	153	145	88	26	51	28	23
	Raw Pass Ratio	42.8	43.3	41.2	41.2	41.8	42.2	42.2	43.8	42.7	38.3	43.5	43.2	41.8	40.7	29.9	35.7	41.2	46.9
	Effective Pass Ratio	47.6	50.3	47.5	47.5	48.3	49.8	48.2	49.1	49.4	44.3	48.6	48.1	47.9	49.2	38.2	41.1	50	54.8
4A	Exams Taken	778	n/a	892	892	704	522	486	451	448	413	384	363	356	482	428	463	448	401
	Passed	278	n/a	316	316	243	236	211	166	177	135	141	125	125	176	170	120	159	182
	Raw Pass Ratio	35.7	n/a	35.4	35.4	34.5	45.2	43.4	36.8	39.5	32.6	36.7	34.4	35.1	36.5	39.7	25.9	35.5	45.4
	Effective Pass Ratio	43.3	n/a	43.5	43.5	43.5	52.4	53.3	45.7	47.3	43.8	41.9	42.7	45.1	45.0	49.7	33.8	43.6	54
4B	Exams Taken	778	n/a	878	878	798	695	888	853	900	718	830	722	747	952	939	1052	1200	1188
	Passed	278	n/a	339	339	258	231	311	392	321	219	328	346	272	247	337	307	421	479
	Raw Pass Ratio	35.7	n/a	38.6	38.6	32.3	33.2	35	46	35.7	30.5	39.5	47.9	36.4	26	35.9	29.2	35.1	40.3
	Effective Pass Ratio	43.3	n/a	48.7	48.7	39	40.5	42.6	54.3	40.6	40.7	44.7	53.2	44.6	35.5	44.1	40.3	44.1	50.9
5A	Exams Taken	n/a	464	n/a	n/a	n/a	472	359	397	361	368	320	316	331	282	140	141	109	85
	Passed	n/a	186	n/a	n/a	n/a	152	135	136	120	130	127	115	116	96	60	45	40	33
	Raw Pass Ratio	n/a	40.1	n/a	n/a	n/a	32.2	37.6	34.3	33.2	34.7	39.6	36.4	35.1	34	42.9	31.9	36.7	38.8
	Effective Pass Ratio	n/a	44.3	n/a	n/a	n/a	40.2	43.3	41.5	40.1	41.4	46.1	41.2	42.7	41.2	50.4	50	45.5	51.6
5B	Exams Taken	n/a	10	n/a	n/a	n/a	389	343	402	372	402	359	379	368	356	288	376	296	251
	Passed	n/a	7	n/a	n/a	n/a	128	126	150	149	142	160	151	167	140	95	133	111	103
	Raw Pass Ratio	n/a	70	n/a	n/a	n/a	32.9	36.7	37.3	40.1	35.3	44.5	39.8	45.4	39.3	33	35.4	37.5	41
	Effective Pass Ratio	n/a	70	n/a	n/a	n/a	38.4	43	44	45.7	41.9	49.5	44.7	50.3	47.8	42.2	43.9	47.8	49.8

CAS Examination Pass Statistics

Part		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999								
6	Exams Taken	434	490	555	725	628	629	622	592	863	602								
	Passed	141	177	196	244	233	229	246	217	316	265								
	Raw Pass Ratio	32.5	36.1	35.3	33.7	37.1	36.4	39.5	36.7	36.6	44								
	Effective Pass Ratio	39.6	40.7	42	38.1	40.8	41.7	43.4	42.1	43.7	49.8								
7	Exams Taken	421	511	540	601	627	626	598	589	651	588								
	Passed	140	159	175	240	215	212	198	171	235	189								
	Raw Pass Ratio	33.3	31.1	32.4	39.9	34.2	33.8	33.1	29	36.1	32.1								
	Effective Pass Ratio	38	36.9	38.2	44.7	39.7	40.8	41.5	36.2	46	42.8								
8	Exams Taken	202	258	250	303	334	334	351	352	383	322								
	Passed	73	104	97	146	129	124	145	135	172	154								
	Raw Pass Ratio	36.1	40.3	38.8	48.2	38.6	37.1	41.3	38.4	44.9	47.8								
	Effective Pass Ratio	39.5	42.1	43.3	54.3	42.6	39.6	45.7	41.9	49.6	51.5								
9	Exams Taken	238	271	254	299	382	355	376	385	344	393								
	Passed	84	118	106	117	167	155	171	166	139	183								
	Raw Pass Ratio	35.3	43.5	41.7	39.1	43.7	43.6	45.5	43.1	40.4	46.6								
	Effective Pass Ratio	39	49	50	42.5	48.7	47.2	49.7	49.3	45.9	51.1								
10	Exams Taken	177	190	227	244	297	335	335	373	383	443								
	Passed	66	74	91	111	100	129	130	147	136	165								
	Raw Pass Ratio	37.3	38.9	40.1	45.5	33.7	38.5	38.8	39.4	35.5	37.2								
	Effective Pass Ratio	39.3	42.3	44	53.9	37.7	42.2	46.9	42.2	39.2	42.9								
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	10 July 2003																		

Memo

To: CAS Education Policy Committee – Travel Time Subcommittee
From: Arlie Proctor, Travel Time Data Consultant
CC: Tom Downey, CAS Office
James Norris, Travel Time Data Consultant
Date: 10/16/2003
Re: Travel Time Statistics

This memo summarizes relevant statistics drawn from the CAS Candidate Database as of 17 June 2003. The information herein should supplement the 2003 travel time report to be delivered to the CAS Board of Directors. This memo contains the following data sets:

1. Number of exam records contained in the database as of 17 June 2003;
2. Number of unique candidates represented in the database as of 17 June 2003 by year of first recorded exam sitting;
3. Number of Associates and number of Fellows represented in the database as of 17 June 2003;
4. Number of Candidates, Associates, and Fellows with identified initial employment dates as of 17 June 2003.
5. Mean and median travel times for Fellows and Associates with identified initial employment dates as of 17 June 2003, grouped by year of initial employment.

Each data set includes a brief description and relevant assumptions/methods applied to the raw data.

It is important that the final report to the board note the importance of these data sets in drawing conclusions about travel time trends. Research over the past year has concluded that median travel time to FCAS has historically been around eight years throughout the period for which reliable exam histories exist for CAS students (these statistics are consistent with similarly created figures from the SoA for their candidates). The statistics traditionally used by the board to gauge travel time trends have relied on median travel times grouped by the year in which candidates complete Associate or Fellow designations. These statistics have created a perception that travel times have been increasing dramatically, with recent graduating classes having median times more than 10 years. The apparent increase is a natural outgrowth of the statistics themselves, akin to increasing calendar-year loss ratios that result from under-reserving of early accident years combined with growth in volume. While accident-year loss ratios remain constant, calendar-year ratios steadily climb and eventually exceed accident-year ratios. Only in a steady state will calendar-year ratios and accident-year ratios track closely. The CAS candidate population has not, and probably will not reach such a steady state, rendering the traditional statistics by graduating cohort of limited value.

1. Number of Exam Records in CAS Database

The CAS candidate database contained 156,299 exam records as of 17 June 2003.

2. Number of Candidates in CAS Database

The CAS candidate database contained 14,739 unique candidates as of 17 June 2003.

3. Number of Credentialed Actuaries in CAS Database

The CAS candidate database contained 2,238 Fellows and 1,261 Associates as of 17 June 2003.

4. Number of Credentialed Actuaries with Identified Initial Employment Dates

The CAS candidate database contained dates of initial employment for 1,600 Fellows and 767 Associates as of 17 June 2003.

5. Mean and Median Travel Times

For those Fellows and Associates having identified dates of initial employment, I have calculated mean and median travel times. For each candidate, I defined start date to be year of initial employment plus month of initial employment divided by twelve. Likewise, I defined completion date to be the year of designation plus month of designation divided by twelve. The difference between the two is the travel time for each candidate.

Travel Time to Associateship

The table below contains travel time data for all Fellows and Associates with identified dates of initial employment. The statistics below represent the time required from date of first employment to the date of the meeting at which Associateship was conferred. Note that travel times for recent periods are truncated. Cells shaded in gray have not yet passed the truncation age.

Associates:

Year of Initial Employment	Number Candidates In Sample	Mean Travel Time	Median Travel Time	Maximum Travel Time	Median Truncated @ 10 yrs	Median Truncated @ 15 yrs
1970	23	5.15	3.42	28.33	3.29	3.33
1971	35	4.54	3.58	26.17	3.42	3.50
1972	42	3.77	2.92	18.00	2.92	2.92
1973	53	4.20	3.00	19.50	2.92	2.96
1974	44	6.71	5.13	27.83	4.67	4.83
1975	41	5.42	4.58	20.25	4.17	4.17
1976	57	6.31	4.83	21.42	4.50	4.75
1977	60	7.17	5.96	25.33	4.92	5.92
1978	68	6.84	5.83	20.58	5.08	5.58
1979	74	7.42	6.54	20.50	5.88	6.38
1980	64	6.77	6.42	17.75	6.08	6.38
1981	51	7.35	6.92	21.17	6.00	6.92
1982	54	6.08	5.63	15.50	5.46	5.58
1983	64	7.21	6.54	19.42	5.83	6.25
1984	63	7.11	6.25	18.17	5.83	6.17
1985	60	6.25	5.83	14.50	5.46	5.83
1986	100	7.09	6.63	14.58	5.92	6.63
1987	137	7.00	6.42	15.75	5.83	6.29
1988	106	6.44	5.92	13.00	5.83	5.92
1989	135	6.10	5.75	13.42	5.42	5.75
1990	156	5.81	5.58	12.42	5.42	5.58
1991	129	5.60	5.42	11.92	5.08	5.42
1992	128	5.52	5.42	10.92	5.25	5.42
1993	122	5.09	4.71	10.00	4.71	4.71
1994	130	4.89	4.83	8.92	4.83	4.83
1995	86	4.87	4.63	8.00	4.63	4.63
1996	87	4.35	4.42	7.33	4.42	4.42
1997	75	3.90	4.17	6.25	4.17	4.17
1998	58	3.47	3.83	5.42	3.83	3.83
1999	26	2.80	3.17	4.33	3.17	3.17
2000	8	2.41	2.42	2.92	2.42	2.42
2002	1	-3.67	-3.67	-3.67	-3.67	-3.67

Fellows:

Year of Initial Employment	Number Candidates In Sample	Mean Travel Time	Median Travel Time	Maximum Travel Time	Median Truncated @ 10 yrs	Median Truncated @ 15 yrs
1970	20	9.45	6.42	31.33	6.04	6.33
1971	32	8.06	7.58	13.58	6.46	7.58
1972	33	7.74	6.92	18.17	5.92	6.50
1973	43	7.49	6.42	16.33	5.96	6.38
1974	33	8.87	7.67	28.83	7.00	7.42
1975	33	7.83	7.42	23.25	7.25	7.42
1976	45	8.57	7.17	26.42	6.58	6.83
1977	42	9.39	9.38	20.17	6.00	8.42
1978	55	9.10	8.17	22.58	6.38	7.50
1979	60	10.12	9.71	23.25	6.83	8.63
1980	53	9.83	9.33	17.67	8.00	8.96
1981	36	9.27	9.17	20.42	6.46	8.92
1982	40	8.48	7.46	20.67	6.83	7.42
1983	44	8.61	8.50	14.25	7.42	8.50
1984	46	9.16	8.63	18.75	6.42	8.33
1985	42	9.20	8.63	17.83	7.25	8.42
1986	65	9.69	9.17	16.42	6.92	8.50
1987	87	8.76	8.42	15.92	7.00	8.42
1988	73	8.85	8.42	14.67	6.88	8.42
1989	92	8.19	8.46	13.50	6.63	8.46
1990	115	8.26	8.42	13.33	7.42	8.42
1991	82	7.89	7.88	11.58	7.42	7.88
1992	77	7.48	7.42	11.00	7.33	7.42
1993	74	6.88	7.21	9.75	7.21	7.21
1994	80	6.24	6.42	9.25	6.42	6.42
1995	47	6.05	6.00	8.25	6.00	6.00
1996	45	5.30	5.42	7.25	5.42	5.42
1997	36	4.11	4.83	5.83	4.83	4.83
1998	34	4.01	4.42	5.00	4.42	4.42
1999	7	3.40	3.42	3.67	3.42	3.42
2000	2	2.29	2.29	2.33	2.29	2.29