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Macalester College Energy Data June 16, 1987 - May 15, 1988

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MACALESTER COLLEGE

ENERGY DATA

JUNE 16, 1987 - MAY 15, 1988

- o CONSUMPTION
DATA

- o PIE CHART
CONDENSATE/ELECTRICITY

- o CONDENSATE
DATA

- o ELECTRICITY
DATA

- o COMPARATIVE
REPORT

- o NEW LIBRARY
CONSUMPTION

- o DEGREE DAY
COMPARISON

- o HISTORICAL DATA
BY YEAR

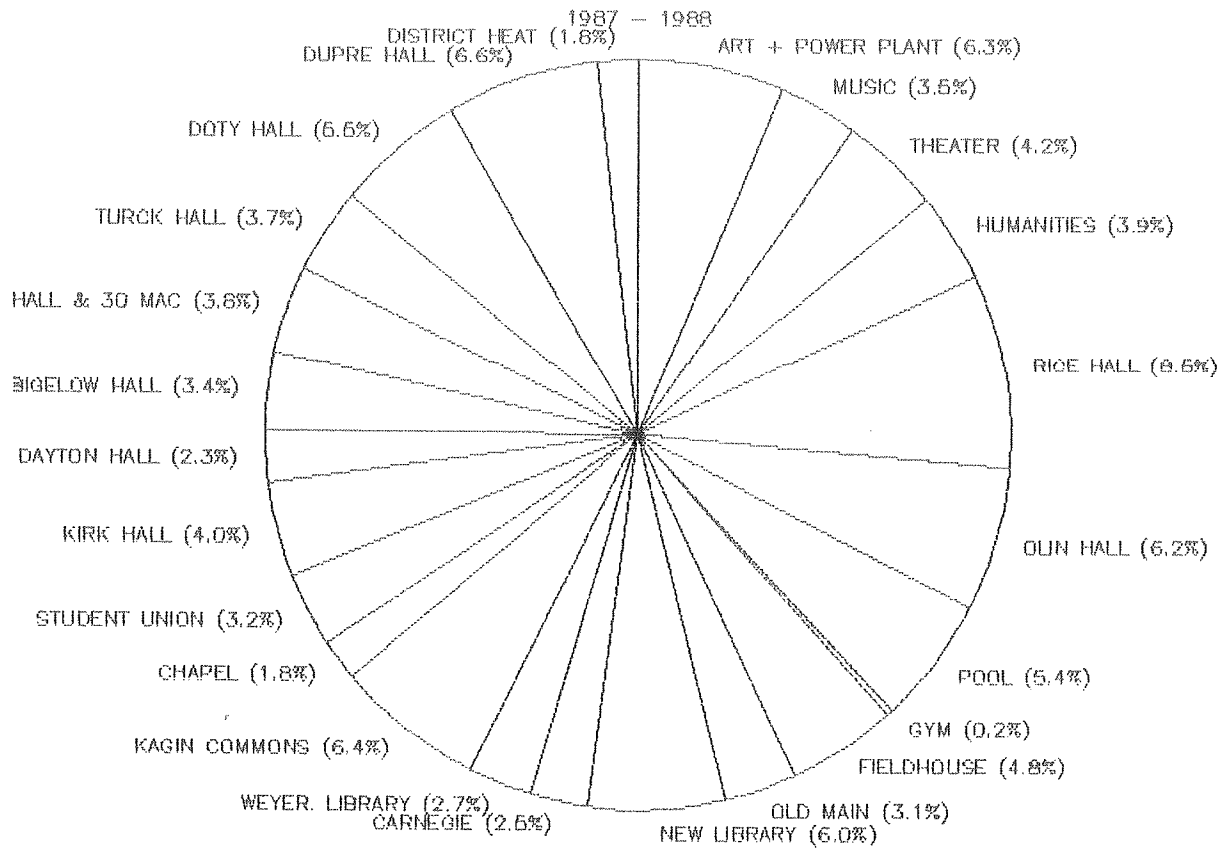
- o HISTORICAL DATA
BY MONTH

1987-88 FUEL AND ELECTRICITY CONSUMPTION

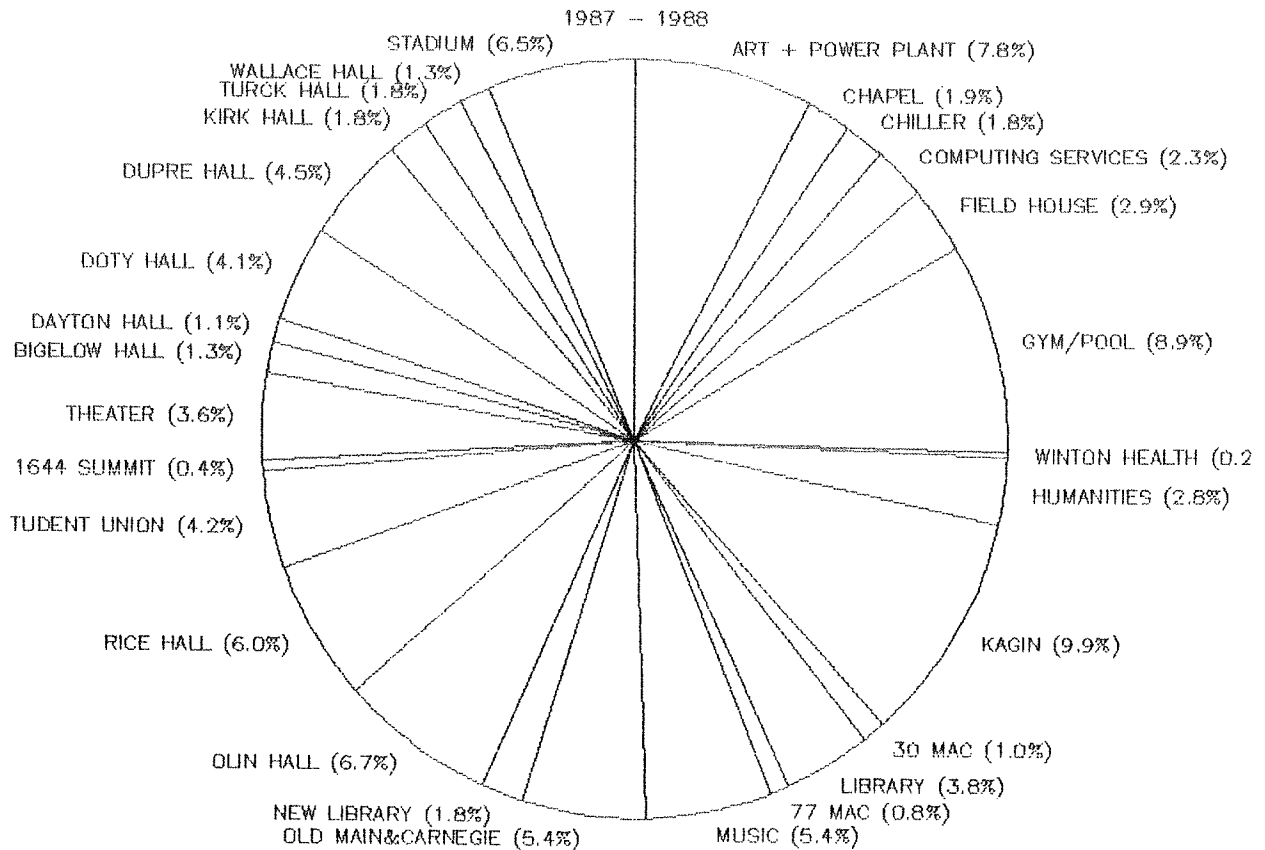
	MAY JUNE	JUNE JULY	JULY AUGUST	AUGUST SEPT.	SEPT. OCT.	OCT. NOV.
GAS	QUANTITY-CCF 10,250	4,390	5,260	19,710	46,190	99,480
	COST-\$	\$980.68	\$1,115.12	\$5,420.25	\$12,702.25	\$21,033.00
	UNIT COST	0.212	0.212	0.275	0.275	0.225
OIL	QUANTITY-GAL 0	0	0	0	0	0
	COST-\$					
	UNIT COST					
TOTAL BTU CONSUMPTION (*1,000)	1,025,000	499,000	526,000	1,971,000	4,619,000	9,348,000
ELECTRICITY	QUANTITY-KWH 549,600	784,800	700,800	619,200	712,800	732,200
	# BILLING DAYS	28	29	30	28	29
	KWH PER DAY	19,629	24,166	20,640	25,457	25,248
	COST-\$	\$27,229.10	\$34,042.47	\$29,469.82	\$28,950.70	\$28,253.00
	UNIT COST	0.050	0.049	0.048	0.041	0.039
# STEAM GENERATED	427,100	946,500	491,100	1,867,800	4,382,600	9,046,100
BOILER EFFICIENCY (BTU STEAM/BTU FUEL)	0.846	0.803	0.812	0.824	0.825	0.842
HEATING DEGREE DAY - ACTUAL (MAC)	0	51	2	40	393	653
COOLING DEGREE DAY - ACTUAL (MAC)	305	230	391	80	17	0
HOURS CHILLER OPERATION	204	35	341	17	3	0
1986-87 GAS (CCF)	16,447	11,780	7,164	24,785	11,461	3,820
1986-87 OIL (GAL)	3,900	6,400	6,600	0	31,600	68,100
1986-87 ELEC (KWH)	559,200	720,000	568,800	573,600	710,400	696,400
# DAYS	29	30	29	30	28	29
KWH/DAY	19,283	24,000	19,614	17,382	25,371	24,083
1986-87 # STEAM GENERATED	1,997,900	2,099,000	1,604,400	2,224,100	5,555,300	9,961,500
1986-87 BTU CONSUMPTION (*1,000)	2,229,700	2,137,981	1,706,368	2,478,500	5,886,100	10,582,000
1986-87 HEATING DEGREE DAY	81	0	0	111	247	752
11 YR AVG ELEC CONSUMP (75/76-85/86)	412,800	511,400	469,140	540,240	577,440	615,120
11 YR AVG BTU CONSUMP (GAS/OIL*1,000)	1,666,300	2,494,100	2,188,400	2,069,000	5,057,600	11,581,700

NOV. DEC.	DEC. JAN.	JAN. FEB.	FEB. MARCH	MARCH APRIL	APRIL MAY	YEAR END TOTAL
132,960	179,260	203,640	137,900	66,280	42,360	941,680
\$34,303.68	\$41,504.07	\$47,759.69	\$32,130.70	\$15,443.24	\$9,446.28	\$223,961.96
0.233	0.232	0.235	0.233	0.233	0.223	0.233
0	2,800	0	0	26,800	11,200	40,800
	\$1,088.08			\$7,466.48	\$3,120.32	\$11,674.88
	0.3886			0.2786	0.2786	0.3153
19,296,000	17,926,000	20,364,000	13,790,000	8,851,293	5,916,000	98,071,293
912,000	787,200	844,800	768,000	871,200	612,000	8,894,600
33	34	30	28	32	28	362
27,636	29,153	28,160	27,429	27,225	21,857	294,381
\$33,335.07	\$31,392.00	\$33,759.58	\$31,247.16	\$34,282.97	\$27,818.05	\$376,024.74
0.037	0.040	0.040	0.041	0.039	0.045	0.043
12,644,600	17,492,000	19,422,000	13,158,600	10,173,900	5,642,500	95,694,800
0.827	0.829	0.829	0.830	0.831	0.829	0.827
977	1,483	1,605	994	671	269	7,138
0	0	0	0	0	24	1,047
0	0	0	0	0	6	606
9,220	71,740	144,830	105,880	8,025	2,897	418,049
84,700	34,400	0	0	0	0	235,700
900,000	729,600	729,600	744,000	729,600	744,000	8,407,200
33	35	29	30	31	30	366
27,273	20,846	25,159	24,800	23,535	23,535	22,970
12,972,900	11,619,100	13,557,200	10,069,000	7,672,400	2,324,205	81,657,005
13,627,922	12,314,000	14,483,000	10,588,000	8,025,000	2,897,000	86,955,571
1,160	1,068	1,264	820	602	133	6,236
716,400	620,400	656,400	622,320	607,290	554,771	6,903,721
17,014,800	22,297,600	14,060,800	12,042,100	9,431,500	5,751,400	105,655,300

CONDENSATE CONSUMPTION (GALLONS)



ELECTRICITY CONSUMPTION



ELECTRICITY CONSUMPTION BY BUILDING
1957 - 1988

BUILDING	MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC		JAN		FEB		MARCH		APRIL		MAY		TOTAL
	MAY	JUNE	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	NOV	DEC	JAN	FEB	
AT + POWER PLANT	41,250	65,630	82,900	45,000	58,940	64,120	63,750	60,260	61,000	65,620	58,950	48,450	710,570														
CAFETERIA	17,430	17,550	22,950	14,070	11,790	11,970	13,380	11,790	18,140	12,210	12,990	12,690	171,960														
CHILLER	19,890	51,930	72,974	14,210	1,850	0	0	0	0	0	0	0	160,894														
COMPUTING SERVICES	15,800	16,050	17,880	17,450	16,600	17,060	20,170	19,410	15,590	16,070	17,370	15,750	205,800														
FIELD HOUSE	17,100	20,700	21,900	19,900	21,030	22,050	25,380	22,530	22,090	24,360	23,550	22,440	261,230														
GYM/POOL	52,900	50,100	53,200	56,500	57,100	73,400	88,100	72,600	75,700	77,800	77,600	58,300	812,500														
KANTON HEALTH	1,395	1,268	1,545	1,898	1,703	1,748	2,190	1,815	1,830	1,853	1,755	1,920	20,920														
HUMANITIES	15,750	20,070	15,930	18,510	22,860	23,790	28,410	22,350	23,010	23,640	21,540	20,310	256,170														
MSGIN	75,480	118,800	98,520	86,520	71,040	63,960	76,380	50,920	61,140	63,780	63,300	65,220	901,060														
31 HSC	6,473	6,068	7,268	7,185	7,808	8,423	9,938	8,303	8,670	8,550	8,370	8,020	95,076														
LIBRARY	22,320	21,500	24,600	24,680	33,400	32,340	38,260	39,840	39,420	39,800	30,240	34,980	349,180														
72 HSC	7,200	10,440	10,960	4,600	4,040	3,940	4,400	4,520	4,680	4,280	5,000	4,440	73,611														
MUSIC	36,660	39,240	39,140	34,740	37,100	39,380	48,140	40,980	43,200	44,340	48,760	43,840	497,320														
OLD MAIN/CORNERST	41,400	44,250	53,700	43,280	40,050	39,510	45,930	42,330	45,180	43,650	43,540	13,540	496,460														
NEW LIBRARY	-	-	19,929	4,665	5,315	3,348	23,950	24,520	23,705	15,812	21,475	24,000	166,739														
QUIN HALL	36,680	43,000	42,880	40,880	52,360	55,320	64,960	50,600	54,520	57,280	59,200	55,200	614,680														
RICE HALL	35,700	39,900	35,800	38,200	49,500	50,200	57,500	47,600	48,700	48,600	50,500	47,300	549,600														
STUDENT UNION	24,560	25,360	28,000	28,600	33,080	33,120	38,720	26,840	34,180	38,560	34,720	35,720	379,440														
1442 SUMMIT	2,673	3,588	4,461	3,243	3,293	3,438	3,592	3,031	3,310	3,489	3,211	3,342	40,671														
THEATER	17,040	20,640	16,420	19,480	29,000	32,140	36,900	30,120	31,860	32,160	34,240	32,500	332,520														
REGGIE HALL	6,240	6,720	5,040	8,280	11,460	11,760	14,280	8,760	10,920	11,400	11,520	11,580	117,950														
DAYTON HALL	7,815	8,505	7,815	8,475	9,945	10,095	6,113	5,470	9,255	9,210	9,385	9,060	100,743														
CITY HALL	31,550	31,140	35,790	28,710	30,960	31,380	35,320	25,170	28,350	29,940	30,950	33,690	372,330														
OPPER HALL	24,440	21,280	20,640	28,120	37,280	40,800	49,920	34,960	38,760	39,320	38,800	35,040	410,580														
KARR HALL	17,520	13,060	12,340	13,440	13,400	14,080	17,240	9,800	13,420	14,000	14,020	15,120	167,440														
TRUCK HALL	15,180	18,915	16,875	13,005	11,505	11,535	15,675	9,495	11,565	12,255	11,700	12,240	160,245														
WALLACE HALL	7,770	6,885	9,518	8,707	10,620	11,303	13,605	7,608	10,530	10,830	10,605	10,780	118,951														
STADIUM	12,800	7,500	6,900	19,100	40,500	65,300	94,800	90,900	105,600	74,700	51,600	22,300	592,400														
TOTAL KWH CONSUMED	614,556	729,939	784,075	650,668	728,539	775,710	936,903	756,522	832,305	816,329	794,331	712,342	9,137,630														

COMPARATIVE CONSUMPTION REPORT
1986/87 VS. 1987/88

CONSUMPTION	GAS (CCF)	OIL (GAL)	TOTAL BTUs (X 1,000)	ELEC (KWH)
1986/87	418,049	235,700	86,955,571	8,407,200
1987/88	941,680	40,800	98,071,293	8,894,600

EXPENDITURE	GAS+OIL COSTS	\$/BTU (1,000 BTUs)	ELECTRICITY COSTS	\$/KWH
1986/87	\$143,791.76	0.0017	\$246,550.42	0.029
1987/88	\$235,636.84	0.0024	\$376,024.74	0.043
DIFFERENCE	(\$91,845.08)		(\$129,474.32)	

TOTAL 87/88
VARIANCE
FROM 86/87 (\$221,319.40)

FUEL VARIANCE	\$18,381.22	DUE TO CONSUMPTION
	\$73,463.86	DUE TO PRICE

ELEC VARIANCE	\$14,293.54	DUE TO CONSUMPTION
	\$115,180.78	DUE TO PRICE

NEW LIBRARY CONSTRUCTION - UTILITY CONSUMPTION DATA

1987/88 MONTH	# STEAM	COST	KWH	COST
MAY/JUNE	-	-	-	-
JUNE/JULY	-	-	-	-
JULY/AUG	-	-	19,929	\$968.08
AUG/SEPT	-	-	4,885	\$232.49
SEPT/OCT	-	-	5,315	\$215.87
OCT/NOV	-	-	3,348	\$129.22
NOV/DEC	987,600	\$2,726.76	23,949	\$875.37
DEC/JAN	1,083,100	\$2,990.44	24,324	\$972.96
JAN/FEB	1,600,390	\$4,417.08	23,705	\$948.20
FEB/MARCH	819,150	\$2,260.85	15,812	\$632.48
MAR/APRIL	463,650	\$1,279.67	21,475	\$859.00
APRIL/MAY	244,530	\$674.90	24,000	\$960.00
YEAR TO DATE TOTAL	5,198,420	\$14,349.71	166,742	\$6,793.68
TOTAL COSTS		\$21,143.39		

NOTE: NO STEAM DATA AVAILABLE PRIOR TO NOVEMBER/DECEMBER
BECAUSE NO METER WAS INSTALLED.

ELECTRIC DATA FROM JULY/AUGUST IS THE TOTAL USE FROM
THE BEGINNING OF THE JOB AND MONTHLY READINGS SINCE.

DEGREE DAY COMPARISON
1986/87 VS. 1987/88

DEGREE DAYS	NUMBER OF DAYS						
	OCTOBER 86/87 87/88	NOVEMBER 86/87 87/88	DECEMBER 86/87 87/88	JANUARY 86/87 87/88	FEBRUARY 86/87 87/88	MARCH 86/87 87/88	
0-9	2 10	- 1	- -	- -	- -	1 -	-
10-19	13 14	2 9	- -	- -	- -	7 0	0
20-29	16 7	8 7	- 5	2 1	11 3	11 16	16
30-39		10 12	23 20	16 5	14 6	10 9	9
40-49		7 1	5 5	8 7	3 6	2 6	6
50-59		3 -	2 1	3 8	6 6	- -	-
60-69			1 -	2 9	8 8		8
70-79				- 1	- 1		1

MACALESTER COLLEGE
ENERGY CONSUMPTION

YEAR	ACTUAL D. DAY	MCF GAS CONSUMED	GALLONS OIL CONSUMED	BTUs CONSUMED x100,000	KWH CONSUMED
74-75	7,989	67,595	246,150	110,769	6,468,000
75-76	7,164	51,326	361,503	107,587	6,201,600
76-77	8,125	51,103	408,907	114,191	6,389,400
77-78	8,797	62,161	338,056	113,709	6,062,400
78-79	9,088	47,116	447,725	118,299	6,256,800
79-80	7,617	76,710	111,607	95,864	6,050,400
80-81	7,058	88,585	52,979	96,558	6,640,800
81-82	8,010	56,682	293,415	103,563	7,197,600
82-83	7,293	24,334	481,125	97,945	7,507,200
83-84	8,286	74,636	198,885	107,096	7,993,623
84-85	7,632	100,149	0	100,516	8,767,200
85-86	7,852	37,124	364,850	91,852	8,611,200
86-87	6,238	51,612	235,700	86,956	8,407,200
87-88	7,138	94,168	40,800	98,071,293	8,894,600

BTU CONSUMPTION - OIL AND GAS COMBINED (x 100,000)

YEAR	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	TOTAL (x100,000)
1971-72	5,876	5,550	1,311	5,092	7,998	15,809	19,964	24,273	21,819	17,873	12,976	5,240	144,781
1972-73	4,076	4,088	1,126	4,379	11,306	14,564	21,408	20,827	18,470	14,269	9,782	5,990	130,285
1973-74	4,801	5,158	3,929	4,747	7,442	12,524	13,625	17,434	14,390	13,156	9,134	5,487	110,827
1974-75	4,055	6,146	2,454	4,435	7,492	10,588	13,679	17,421	15,386	14,451	10,813	3,849	110,789
1975-76	1,953	2,696	1,978	3,125	5,240	10,845	20,954	22,125	9,489	15,613	8,151	5,518	107,587
1976-77	3,500	3,179	2,717	3,631	8,514	15,042	16,712	26,847	9,806	10,864	8,898	4,381	114,191
1977-78	1,559	3,366	2,804	2,069	3,999	11,482	18,349	24,038	17,532	9,901	10,820	7,270	113,709
1978-79	1,625	2,931	2,774	2,960	4,045	14,515	17,221	24,873	18,306	10,114	9,538	5,296	116,299
1979-80	2,215	3,459	2,370	1,784	3,673	9,047	13,734	20,738	13,026	11,615	10,583	3,620	93,864
1980-81	1,413	2,271	2,004	1,895	6,890	11,175	13,513	18,330	14,380	12,136	7,636	6,115	96,358
1981-82	1,542	1,647	1,094	1,385	3,852	7,700	13,738	29,446	16,071	10,333	11,735	5,020	103,563
1982-83	836	1,736	1,662	1,656	3,357	17,322	14,826	16,027	14,321	14,440	6,708	5,954	97,345
1983-84	1,059	1,645	1,847	2,167	5,692	8,436	28,989	20,584	10,897	11,327	10,462	5,991	107,096
1984-85	954	1,984	2,641	2,036	5,327	10,326	14,366	18,338	17,352	14,157	9,760	3,265	100,516
1985-86	1,858	2,463	1,935	1,855	5,497	7,322	15,855	16,270	15,520	10,104	7,832	5,841	91,852
1986-87	2,230	2,138	1,706	2,479	5,886	10,592	13,528	12,314	14,483	10,588	8,025	2,897	86,956
1987-88	1,025	439	526	1,971	4,615	9,348	13,295	17,926	20,364	13,790	8,951	5,916	98,071
17 YR AVG.	2,387	2,995	2,052	2,686	5,990	11,556	16,568	20,459	15,248	12,631	9,459	5,516	107,586

KILOWATT-HOURS CONSUMPTION - (ELECTRICITY)

1971-72	396,000	396,000	396,000	405,600	542,400	532,800	669,600	578,400	626,400	561,600	571,200	525,600	8,476,800
1972-73	348,000	415,200	424,800	525,600	525,600	686,400	669,600	595,200	590,400	561,600	554,400	492,000	8,268,000
1973-74	362,400	446,400	352,800	475,200	412,800	489,600	840,000	508,800	592,800	568,800	520,800	492,000	8,187,400
1974-75	333,600	444,000	345,600	506,400	482,400	568,800	669,600	564,000	708,000	537,600	602,400	494,400	8,256,800
1975-76	343,200	446,400	360,000	436,800	506,400	554,400	664,800	559,200	590,400	576,000	494,400	518,400	8,050,400
1976-77	446,400	482,400	448,800	532,800	515,000	582,200	780,800	616,800	600,000	595,200	590,400	528,000	8,640,800
1977-78	475,200	501,600	556,800	580,800	561,600	590,400	749,800	628,800	708,000	657,600	633,600	583,200	8,507,200
1978-79	463,200	645,600	585,600	612,000	748,800	650,400	650,400	691,200	602,400	645,600	672,000	540,000	8,507,200
1979-80	513,600	708,000	657,600	655,200	379,200	729,600	753,200	676,800	708,000	741,600	684,914	651,109	7,993,623
1980-81	550,000	741,200	598,000	686,400	806,400	765,600	787,200	784,800	840,000	777,600	748,800	722,400	8,767,200
1981-82	559,200	720,000	569,600	573,600	732,000	727,200	866,400	708,000	789,600	772,800	705,600	744,000	8,611,200
1982-83	549,600	784,800	700,800	619,200	712,800	732,200	912,000	787,200	844,800	768,000	871,200	612,000	8,894,600
13 YR AVG	445,138	566,185	505,846	582,646	587,446	639,154	757,109	648,369	686,954	654,462	644,563	568,285	7,306,156