Paper No.	*Paper Title*	*Author(s)*	*Date Published*	*Data Analyzed*	*Method(s) Used*	*Conclusions*
1	Sunday and Workday Variations in Photochemical Air Pollutants in New Jersey and New York	W. Cleveland, T. Graedel, B. Kleiner and J. Warner, Bell Laboratories	1974	May-Sept. 1972-73, Sunday and workday (Mon-Fri) NO, NO2, SO2, aldehydes, CO, THC, CH4, NMHC, aerosols, O3, visible solar radiation, UV solar radiation, wind speed, wind direction, mixing height, temperature, s.d. of vertical wind direction, s.d. of horizonal wind direction, and precipitation, averaged from 5 a.m. to 1 p.m. (except O3 is max hrly avg from 11 a.m. to 6 p.m. and 7 a.m. to 8 a.m.; precipitation is daily total; mixing height 7 a.m. reading; temperature daily max, min, and avg)	To compare distribution of Sunday values of a variable at a site with that of workday values. Quantile-quantile (Q-Q) plots.	Aldehydes and CH4 slightly lower on Sundays. SO2 no consistent pattern. O3 maxima slightly higher on Sundays; O3 averages much higher. Solar radiation, mixing height, and vertical sigma: higher Sunday quantiles; all other meteorological variables, workday and Sunday quantiles similar.
2	A Comparison of Weekend-Weekday O3 and HC Concentrations in	F. Lebron, Maryland Dept of Transportati	1975	June-Sept. 1972-73, hrly O3 from 11 EST for 8 hrs, avg 0600-0900	"Smog Index" = sum of squares of amount over 4pphm for each	No day of week has significantly higher "smog index". Weekend Index not different from weekdays.

	the Baltimore-Washington Metropolitan Area	on		HC, all 7 days.	hrly O3. Grouped weekday and weekend avgs. Kruskal-Wallis ANOVA tests equality of means. Linear regression of peak O3 on HC on afternoon of same day.	Weekdays HC higher than weekends HC. No relationship between O3 and HC. Thus control strategies based solely on reduction of 0600-0900 HC emissions may not effectively reduce O3.
3	Weekday-Weekend Pollutant and Meteorological Studies of the Los Angeles Basin	S. Levitt and D. Chock, General Motors Research Labs	1975	June-Sept., 1972 & 1973: Ox, NO, NO2, THC, CO, PM plus Solar Radiation, Rel. Humidity, and Temp.	Percentiles for each hour. Kolmogorov-Smirnov test for significant differences. Daily maxima.	All sites: NO2, PM, HC, NO, CO lower on weekend. Group 1: New(Lhall, Burbank, Reseda higher weekday Ox. Group 2: LA, WLA, Pasadena, Azusa, Pomona similar. Group 3: Lennox, Long Beach, Whittier higher weekend Ox. Lennox, L. Beach, Whittier have higher weekend daily maxima; all others indistinguishable.
4	Weekday-Weekend Pollutant Studies of the Los Angeles Basin	S. Levitt and D. Chock, General Motors Research Labs	1976	June-Sept., 1972 & 1973: Ox, NO, NO2, THC, CO, PM	Percentiles for each hour. Kolmogorov-Smirnov test for significant differences. Daily maxima.	All sites: Oxidant higher on weekends than weekdays prior to 0900 am, due to NO being an ozone scanvenger => not consistent w/ smog chamber results. North region (Newhall): weekday ox higher than weekends at 0.10 level; Central region (Los Angeles): low ox differs insignificantly; South region (Lennox): no difference.
5	Photochemical Air Pollution: Weekend-Weekday	B. Elkus and K. Wilson, Dept of	1977	Avg hrly concentrations of CO, NO, NO2,	Daily profile of CO, NO, NO2 and Ox. Hr by hr weekly	1) CO, NO, RHC high near midnight, drop early morning, then peak 8 AM on weekdays,

	Differences	Chemistry, UC San Diego.		RHC (THC - methane), and Ox. 1965-1972, except for some sites, from LAAPCD; Traffic count data from Caltrans.	patterns of CO and Ox. 24-hr avg pollutant levels for each day of week at 10 stations. Avg daily hrly maximum for Ox. Autocorrelation (to test that measurements made 1 week apart are independent). Fractional change bet. WkDay and WkEnd = (WE - WD)/WD; then take median.	then rise again late afternoon. NO2 similar to NO & CO, except peak is later. Ox similar. 2) WkEnd and wkday structures for CO differ; Ox shows temporal pattern almost independent of day of week. 3) WkEnd drop in annual daily avg CO, NO, RHC, and NO2 while avg Ox levels rise on weekends. 4) Large fractional decrease of pollutants on weekends at 95% level (at most stations). 5) Significant increase in Ox on weekends at 95% level (at most stations), but decrease at inland stations. 6) Traffic is 20% lower on weekends than weekdays. Conclusion: Care must be taken when designing short-term Ox control strategies. Controls which mimic weekend emissions changes would be ineffective if applied to random days.
6*	Photochemistry of the “Sunday Effect”	T.E. Graedel, L.A.Farrow and T.A. Weber	1977			
7	Weekday-Weekend Ozone Concentrations in the Northeast United States	W. Cleveland and J. McRae, Bell Laboratories	1978	28 sites (NJ, NY, CT, MA): O3, May-Sept. 1974-75 at 21 sites, 73-75 at 6 sites, 70-75 at 1 site.	Empirical quantile-quantile (EQQ) plots. Upper quarter means. Time series with	O3 reduced on weekends and Monday, then gradually increased on Tues to Fri.; same for traffic patterns. (Possible) Traffic reduction causes Monday O3 reduction.

				10 sites: hrly CO, May-Sept. 1974-75. Traffic counts between NJ and NY, May-Sept. 1974-75.	periodic means, variances and autocorrelations (of square root daily maximum O3)	For weekend vs Tues-Fri: CT sites, large O3 reductions on weekend; MA sites, moderate to slight reductions; NY, NJ sites, little change.
8	Day of Week Variations of Photochemical Pollutants in the St. Louis Area	T. Karl, US EPA	1978	25 sites grouped into inner, transitional, and outer categories based on pollutant concentrations, distance from downtown and emission patterns of THC and NOx. Ox, NO, NO2, THC, surface temp., wind speed.	Descriptive statistics. Diurnal plots.	Difference in concentrations of NO, NO2, NMHC, and O3 from Sundays to workdays depended on distance of the measurement from the urban area. O3 decreased from Sundays to workdays inside the city. Meteorological conditions not responsible for these differences. (Possible) NO increase from Sunday to workdays lead to O3 decrease on workdays inside the city.
9*	On the Weekday-Weekend Oxidant Differences in the California South Coast Air Basin	D.P. Chock and D. M. Pierson, GM	1978			
10	Weekend/Weekday Differences in Oxidants and Their Precursors	Y. Horie, J. Cassmassi, L. Lai, and L. Gurtowski, Technology Service Corporation	1977	May-Sept. 1973-76, Washington D.C., Baltimore, Philadelphia, New York-Newark, and Boston. ambient pollutants at 22 sites (no rural); surface meteorological observations at 12	1) *normal* WE/WD: weekends as Sat, Sun; weekdays as Mon-Fri. 2) *Sunday* WE/WD: weekends as Sun; weekdays as Tues-Fri. t-test & visual test of box displays. Meteorological	Among 22, 3 sites show consistently significantly lower Ox on weekends. %change (WE-WD) larger for Sunday vs Tues-Fri than for Sat-Sun vs Mon-Fri. Most important meteorological variables to explain daily max Ox: daily max temp., visibility, wind direction, mixing height (using 'tree').

				sites; upper-air meteorological measurements at 3 sites.	adjustments using tree classifications. Ox, precursors NO, NO2, NO2/NOx, NMHC, THC. 95% CI for median. Wilcoxin rank sum test for NO2/NOx ratio difference.	Among 8, 5 sites show significantly lower 6-9a.m. avg NO on weekends. Among 4, 2 sites sign. lower 6-9a.m. NMHC and THC weekends under *Sunday* WE/WD definition; all sign. lower weekend level under *normal* WE/WD definition. (Possible) Simultaneous control of NOx and NMHC less effective than HC control.
11*	Response to: A statistically tested short-term oxidant control strategy	D.P. Chock and D.M. Pierson	1980			
12	Weekday/Weekend Differences in Diurnal Variation in CO, NO2, and Ozone - Implications for Control Strategies	M. Hoggan, M. Hsu, M. Kahn, and T. Call, SCAQMD	1989	Diurnal: CO, NO2, O3, SO2, NMHC, NO for 1985-87, 82-84, 78-80. Day of Week: PM10.	t-tests for equality of Saturday vs. M-F means and Sunday vs. M-F means of daily max 1-hr average and 24-hr average, using Bonferroni adjusted significance levels. Mean #exceedances of AAQS by day of week for diurnal concentrations of criteria pollutants.	CO and NO2: mean #exceedances of AAQS for Sat and Sun lower than for Mon-Fri. O3: though NOx and NMHC lower on weekends, O3 slightly higher on weekends for most sites, sensitive to precursor concentrations, their spatial and temporal distributions, HC/NOx ratios, and sunlight intensity by PM10. Need further study. Traffic data suggests time and place of controls on pollutant emissions are important.
13	An Analysis of Weekend/Weekday Differences in the South Coast Air	M. Zeldin, Y. Horie, and v. Mirabella, Southern	1989	May-Oct. 1984-86, daily max 1-hr avg O3, avg 0500-0800 hrly NO2 and	t-tests for differences between Sat, Sun, Mon and 'typical'	Coastal and Metro: O3 higher on Sat and Sun. S. Gabriel Valley: O3 highest on Sat, Sun differ from weekday.

	Basin of California	California Edison		NOx.	weekday (Wed, Thurs) Carryover effect: NO2/NOx ratio. Basin divided into 6 geographic regions: Coastal, Metro, San Gabriel Valley, Inland, Inland Valley, and Mountain.	Inland: O3 insignificantly higher on Sat. Inland Valley and Mountain: improved O3 on Sun., lower O3 on weekends. Thus O3 results consistent with airshed models. Coastal and Metro: lower NOx on weekends. NO2/NOx ratios: highest on Sundays, about same on Sat and weekdays.
14*	Analysis of ozone air quality over the New York metropolitan area	S.T. Rao, G. Sistla, K. Schere and J. Godowitch	1991			
15	Weekday vs. Weekend Ambient Ozone Concentrations: Discussion and Hypotheses with Focus on Northern California	S.L. Altshuler, T.D. Arcado and D.R. Lawson	1995	Mean hourly ozone, NO2, and CO: 1981, 1982, 1991, 1992. Emission inventory of ROG, NOx: 1980, 1990.	Diurnal plots. Percent change in emissions. EKMA diagrams.	In Northern CA, weekend effect is stronger in the 1990s than in the 1980s. Weekend effect combined w/ changes in emissions could provide a clue to whether an area is Nox or ROG limited wrt ozone formation.
16*	Effect of alternative boundary conditions on predicted ozone control strategy performance: a case study in the Los Angeles Area	D.A. Winner, G.R. Cass, and R.A. Harley	1995			
17*	Characterization of ozone episodes in SCAB: Effects of air parcel residence time and we/wd	W. Blier, A.M. Winer, D. Hansen and N. Verma	1996			

	differences					
18	An analysis of the weekday-weekend behavior of ambient concentrations of ozone and its precursors	H.Tran, L.C. Larsen and J. Austin	1996	(draft manuscript, superseded by Austin and Tran, 1999)		
19	Day of week contrasts for ozone, NOx and CO	M.W. Hemphill and D.W. Sullivan	1997	(draft to be sent later)		
20*	PAMS Data Analysis: An investigation of local meteorological effects on ozone during OTAG 1995 episode and wd/we differences in the Northeast Corridor	F. Vukovich	1997			
21	A fuel-based inventory for heavy-duty diesel truck emissions	D.B. Dreher and R.A. Harley	1998	Daily traffic (W.I.M.) counts by vehicle class (light-duty vehicles and diesel trucks)	Ratio of daily total to weekly avg traffic counts by vehicle class, for each day of week. Hourly count as a percentage of total daily count.	HD vehicle travel declined from weekdays to weekends. Decreases on off-road mobile source and stationary source activity may contribute to differences. Changes in exhaust emissions due to reduced diesel truck activity may lead to lower fine PM on weekends. Lower fine PM emissions from diesel trucks may lead to increased photolysis rates and ozone formation on weekends.
22*	Seasonal and weekly pattern of ozone over the	R.B. Husar	1998			

	OTAG region					
23	A preliminary study of the weekday/weekeend differences in ozone and its precursors in large urban regions and their implications toward control strategies	F. Vukovich, H. Jeffries, and D. Guinnup	1998 Draft	Hourly O3, NOx, VOC, NMHC: weekday vs weekend. June-July, 1995. Washington DC, Philadelphia, New York, Houston	Sum of 3 hourly values. Average across sites. Diurnal profiles. Exceedances.	Weekend O3 higher on weekend than weekday while NOx higher on weekdays. Reductions in NOx and VOC may have a localized disbenefit effect on ozone, especially on ozone-conducive days. Differences in emission inventory between wd and wk day must be quantified in order to evaluate air quality models.
24	Analysis of Weekend-Weekday Differences in Ozone and Ozone Precursors in the South Coast (Los Angeles) Air Basin	T. Stoeckenius, A. Taylor, G. Yarwood, and K. Lee, ENVIRON	1998	(see response, item #25, below)		
25	Response to Environ's Report	ARB	1998			The simultaneous occurrence of higher ozone on weekend and lower NOx emissions do not prove the disbenefit of control strategies, given the reduction in ozone on all days of week.
26	Evaluation of recent NO2 and ozone levels in Southern California on weekdays and weekends using EPA AIRS data: Implications for the LEV II proposal	T. Darlington and D. Kahlbaum, Air Improvement Resource, Report to Navistar	1998	Trends in HC and Nox inventories, SC. Trends in O3 and NO2: weekdays & weekends, 1986-1998. Vehicle activity by day of week, to assess correlation with changes in O3 and NO2.	Avg max 1-hour ozone and NO2; 8-hour avg O3. By day of week.	1. Ambient NO2 and ozone down since late 1980s. 2. MV program reduced ambient HC significantly. 3. Ozone increased on weekends, showing a region is at a lower VOC/NOx ratio. 4. Ambient NO2 reduction appears to cause the O3 increase during weekends. 5. Further reduction in Nox and NO2 w/o reductions in ambient

						HC will make it more difficult to lower ozone.
27*	Analysis of weekday/weekend differences in air quality and meteorology in SCAB	W. Blier, and A.M. Winer	1998			
28	A characterization of the weekday-weekend behavior of ambient ozone concentrations in California	J. Austin and H. Tran	1999	Daily max 1-hour ozone, May 17 - October 15, 1992-1998. South Coast Air Basin, San Francisco Bay Air Basin, and Sacramento Valley.	Adjust for effects of meteorology and outliers: fit smooth curves and analyze residuals (adjusted concentrations). Use principal components to view results and categorize behavior. Test for significant day-to-day changes in ozone at 5% level.	1. Typical pattern for weekend effect: increase from Friday to Saturday, slight increase from Saturday to Sunday, then decrease on Monday. 2. Weekend effect strong at urban sites in South Coast and San Francisco Bay, less prominent at sites far downwind from emission sources; stronger post-CBG (1996-1998) compared to pre-CBG (1992-1994 or 1995) 3. It does not exist in Sacramento Valley.

* paper not yet summarized.