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## Memorandum

**To**:     James E. Johnson, New Jersey Advisory Committee on Police Standards
**From**: Jeffrey Fagan
            Geoffrey Alpert
            Richard Brooks
            Christopher Winship
**Re**:     Lamberth-Kadane Report on New Jersey State Police Stop Activity on the
            Southern End of the New Jersey Turnpike
**Date**:   April 10, 2007

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We completed the review of the report by John Lamberth and Jay Kadane (LK) submitted on behalf of the American Civil Liberties Union, pursuant to the Consent Decree between the U.S. Department of Justice and the State of New Jersey (*CIVIL NO. 99-5970(MLC)*) following *State v. Soto* (324 N.J. Super. 66, 351 (1996)).  We also reviewed their February 22, 2007 letter to the Committee that responded to questions raised by our committee.  We begin with a summary and then discuss data and design issues that influence the validity of its conclusions.

### *LK Design and Conclusions*

LK conducted studies to determine the population of motorists who violated traffic laws on the New Jersey Turnpike (NJT) between Exit 7A and Exit 1 during August-September 2005.  In the first study, conducted between 8/16 and 8/28, survey vehicles operated at four miles per hour above the speed limit for 25 trips at randomly selected times, locations and directions on the NJT.  Observers recorded the race/ethnicity of drivers and also whether the vehicle was a "violator."  A second survey used radar technology to record the speeds of drivers who exceeded the speed limit through 40 trips at randomly selected times and days and in randomly selected portions of the corridor between the two Exits.  This study took place between 8/27 and 9/23.  To adjust for "speed bias" in the estimates in the radar survey, they weighted the data and re-estimated the proportion of violators (speeders) who are Black.  In addition, LK computed a weighted estimate for egregious speeders (those traveling more than 15 miles per hour above the speed limit).

LK summarized the results in Table 2. The weighted and unweighted estimates in the radar survey are quite close, and both of these estimates are close to the estimate in the first survey of 19.0% for Black motorists who are violators.  The standard deviations in the weighted estimates are small.

Data on these race-specific estimates of drivers and violators were compared to aggregate data on race-specific stops recorded by New Jersey State Police (NJSP) troopers. The NJSP data do not report the specific locations, dates, or patrol units that conducted the stops. LK report that 30.8% of the motorists stopped by NJSP troopers between January 1, 2000 and April 30, 2005 were Black. This is the index they used to determine the racial proportionality of race-specific stops.

The results suggest that Black drivers are disproportionately stopped on this section of the NJT. LK computed odds ratios to better communicate the extent of the disparity. They report that the odds ratio is 2.08 for all drivers and 1.87 for egregious violators. To summarize, Black drivers are about twice as likely to be stopped for violations as other drivers.

*Design and Measurement Issues*

There are several limitations in the study that should be kept in mind in evaluation the study's conclusions. Their research question is simple: are Black motorists stopped in roughly equal proportion to their rate of violation of relevant traffic laws? To answer this question two figures must be determined. First, what is the percentage of motorists who are stopped who are Black; and second, what proportion of traffic violators are Black. Our comments therefore focus on LK's efforts to give empirical content to these figures.

Unfortunately, there was much we didn't know about the distribution of the universe of violators who were stopped. The estimates of the number of Black motorists stopped were based on data made available by the NJSP to LK. From these records, aggregate data for stops by race made by NJSP troopers assigned to the Moorestown station were used by LK to estimate this figure. These data were contained in 11 semi-annual reports published by the NJSP as part of the consent decree. None overlapped the period in which LK conducted their surveys of violators. Moreover, the NJSP aggregate reports contained no information about the type of violation (moving versus non-moving, speeding versus other moving violation), the speed of those stopped, whether the stops were made by special patrol units or regular patrols, or the reasons for non-moving violation stops.

We were able to narrow the uncertainty on the time periods by analyzing data on stops made available to the review team by the NJSP. These were stops made by troopers assigned to the Mooretown station. The data included information on whether the stop was made for a moving versus a non-moving violation, and the race of the driver. Regrettably, other information – such as the speed of the driver stopped and markers for non-speeding moving violations – was not included. We narrowed the time frame for the NJSP data by matching it to the time periods of the two LK surveys. The attached table shows that during this time, a total of 3,013 stops were recorded, most for moving violations. About one in three (32.0%) of those stopped were Black motorists – 37.5% of those stopped for non-moving violations and 31.7% of those stopped for moving violations. Accordingly, we can dismiss concerns about whether the time period used by LK was representative of the stop patterns for the period of their surveys.

Still, other questions remain. We don't know the percentage of those stopped by the NJSP who were *egregious* violators, nor those whose violations fell into the range where discretion is broadest – between 5 and 10 miles per hour over the speed limit. LK used the same NJSP numerator to compare all violators and egregious speeders. In their reply to our questions dated February 22, 2007, LK report that the weighted percentage of Blacks who were violators driving 4-10 miles per hour is similar (17.0%) to the percentage who were traveling 11-15 miles per hour above the speed limit (19.2%). The supply of Black motorists at these thresholds is similar to the overall rate of violators, including egregious violators.

This strengthens the LK position – even if all the stops were concentrated in the gray area of 5-15 miles per hour above the speed limit, the percentage of Black violators in that range remains fairly stable and below 20%. What we don't know is the rate of stops of Black versus other drivers who travel over 15 miles per hour above the speed limit. Additional information missing from both the NJSP and the LK data include information about the type (make, model) of car, state of registration, or the number and race of passengers. We also don't have details about time of day or other conditions when stops take place, factors that might affect the ability of LK researchers to classify motorists by race or the preferences of NJSP Troopers to stop a speeding vehicle in the more discretionary range of speeding violations.

Second, there are some limitations to the LK estimates of the number of Black motorists who were speeding, i.e., the supply of violators available for stops. We wonder whether the observation method – the use of a pace car – might introduce a test effect that would retard the speed of some drivers or otherwise influence the flow of traffic. Drivers exceeding the speed of a flow of clustered cars could be selected for stops at one speed threshold, but might be less likely to be stopped if they are embedded in a cluster of similarly speeding cars.

We also don't know the rate at which LK observers could not record the race or ethnicity of the driver due to obstructed views (from other vehicles, tinted windows, or weather conditions), or how they were trained to make decisions under all such conditions of uncertainty. Similarly, LK do not discuss the decision rules that their observers used to record race when the driver may be bi- or multi-racial, or the frequency at which these circumstances arose. [Ideally the observers would see and code "race" the same way troopers do.] Nor do we know how often racial non-identification took place, and how those cases were handled in the data. Finally, there was no effort to validate racial classifications using photographic evidence or multiple raters. Accordingly, there are some doubts about both the estimate of the number of violators of any race, and the reliability of the estimate. Nevertheless, the convergence of the estimates in the two LK surveys does provide some evidence of reliability in the estimates, and at the least, rules out method as a source of error in estimating the race-specific violator pool. The primary question for this study, though, is whether those error rates and selection-omission effects varied by race of the driver. We have no reason to believe that they did.

*Conclusions*

It is unlikely that the measurement and design limitations of the study undermine the reliability of the LK conclusions.  These limitations may influence the effect size – measured either as the racial disparity or the odds ratio – but they are unlikely to reduce the disparity to the point where it is meaningless.  Even if LK erred by 33 percent in their estimate of disparity, the odds ratios will still be quite high.  We noted that the stop rates for Blacks are slightly higher when we examine NJSP data for stops by race in the identical 2005 time interval, thereby eliminating one source of concern.  Also, supplemental information provided by LK show that violation rates for Blacks are stable across different intervals of excess speed, suggesting that the risks of excess stops of Blacks are likely to be observed at any threshold of violation.  Accordingly, limitations in the NJSP data on the speed of drivers stopped do not appear to undermine the LK conclusions.  Even if the other limitations in design and measurement introduced uncertainty in the estimates computed by LK, a plausible range of estimates of violation rates by Blacks (i.e., a confidence interval) would still suggest that stop rates for Blacks are disproportionate to their violation rates and disproportionate to the rates for drivers of other races.

**Race of Driver Stopped, NJSP Moorestown Station,**
**August 16 – September 23, 2005, by Type of Violation (N, Percent)**

| | Violation | | |
| --- | --- | --- | --- |
| **Race of Driver** | *Non-Moving* | *Moving* | *Total* |
| American Indian | 0 | 16 | 16 |
| | (0) | (0.6) | (0.5) |
| Asian – Indian | 0 | 92 | 92 |
| | (0) | (3.2) | (3.1) |
| Black | 51 | 912 | 963 |
| | (37.5) | (31.7) | (32.0) |
| Hispanic | 16 | 337 | 353 |
| | (11.8) | (11.7) | (11.7) |
| Other Asian | 6 | 147 | 153 |
| | (4.4) | (5.1) | (5.1) |
| Other | 2 | 6 | 8 |
| | (1.5) | (0.2) | (.3) |
| White | 61 | 1367 | 1428 |
| | (44.9) | (47.5) | (47.4) |
| Total | 136 | 2877 | 3013 |