



New York State Office of the State Comptroller
Thomas P. DiNapoli

Division of State Government Accountability

Electronic Ticket Sales at the 2011 New York State Fair

Department of Agriculture and Markets



Report 2011-S-37

June 2012

Executive Summary

Purpose

To assess the accuracy and security of the electronic ticketing system used for Midway ride sales at the 2011 New York State Fair. The audit covers the period January 1, 2011 through October 27, 2011.

Background

The Department of Agriculture and Markets contracts with a private vendor – Strates Shows, Inc. (Strates) – to provide and operate Midway rides at the annual State Fair. In 2011, Strates debuted an electronic ticketing system that uses wireless devices to scan bar-coded cards and wristbands that patrons can purchase and refill at ticket booths. The system replaced the traditional rolls of paper tickets sold at the Fair, which had to be weighed and counted on a daily basis to reconcile reported revenues, and therefore were vulnerable to various types of fraud, including counterfeiting.

Key Findings

- The electronic ticketing system worked as intended, and was properly installed and operated by Strates to provide appropriate security over the system and the sensitive data it contained. Midway sales and related commissions due under the contract were also properly reported, calculated and paid to the Fair in a timely manner.
- Even though inclement weather from the remnants of Hurricanes Irene and Lee caused overall Fair attendance to decline by about 8 percent, Midway ride sales actually increased. For the 10 days when weather was not a factor, sales rose by \$250,000; an increase of over 13 percent.
- In our opinion, the increase in revenue is due in large part to the effectiveness of the new system in reducing opportunities for fraud and abuse.

Key Recommendations

- When contracting for amusement services such as the Midway rides at the Fair, require vendors use an electronic ticketing system.
- Analyze opportunities to implement similar electronic ticketing systems to reduce the risk of fraud and abuse associated with other events and activities held at the Fairgrounds.

Other Related Audits/Reports of Interest

[Department of Agriculture and Markets: Controls Over State Fair Revenues 2010-S-52](#)

[Office of Children and Family Services: Mobile Devices with Sensitive Information are Not Secure 2010-S-19](#)

[Industrial Exhibit Authority: Controls Over Trade Agreements 2008-S-91](#)

[Department of Agriculture and Markets: Controls Over State Fair Payroll 2007-S-130](#)

**State of New York
Office of the State Comptroller**

Division of State Government Accountability

June 20, 2012

Darrel J. Aubertine
Commissioner
NYS Department of Agriculture and Markets
10 Airline Drive
Albany, NY 12235

Dear Commissioner Aubertine:

The Office of the State Comptroller is committed to helping State agencies, public authorities and local government agencies manage government resources efficiently and effectively and, by so doing, providing accountability for tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of State agencies, public authorities and local government agencies, as well as their compliance with relevant statutes and their observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations. Audits can also identify strategies for reducing costs and strengthening controls that are intended to safeguard assets.

The following is a report of our audit of *Electronic Ticket Sales at the 2011 New York State Fair*. This audit was performed pursuant to the State Comptroller's authority under Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

This audit's results and recommendations are resources for you to use in effectively managing your operations and in meeting the expectations of taxpayers. If you have any questions about this report, please feel free to contact us.

Respectfully submitted,

*Office of the State Comptroller
Division of State Government Accountability*

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This report is also available on our website at: www.osc.state.ny.us

Background

The Fair is a division of the Department of Agriculture and Markets, whose mission is to promote and highlight New York State and its agriculture, commerce, arts and sciences through presentations at the Great New York State Fair, which dates back to 1841. Strates Shows Inc. (Strates) is a private contracted vendor responsible for operating the Fair's Midway rides, a portion of the revenues from which are paid to the Fair. The Fair also offers a wide variety of exhibits, attractions, competitions and concerts. The Fairgrounds sit on 375 acres consisting of eight primary facilities with temporary RV parking sites, parking and shuttle services for 23,000 vehicles. The Fairgrounds hosts events, performances and expositions throughout the year, including the Fair. More than two million people attend these events each year, including almost one million visitors to the Fair.

In past years, Fair patrons purchased paper tickets from Strates' ticket booths that were valid for admission to the various Midway rides. At the start of each day, ticket booth attendants would receive rolls of tickets to sell, which were initially weighed to establish accountability. At the end of the day, sales receipts were matched against the weight of unsold tickets, as well as the weight of used tickets collected by ride operators. As a result, it could sometimes take all night to complete the revenue reconciliation and there was still considerable margin for error.

A paper ticketing process, which is not only labor intensive and inefficient, is also vulnerable to several types of fraudulent activities. For example, it is common for counterfeit tickets to be found in such a system, since the paper tickets are not unique and only distinguishable by the color chosen for the day; the choice of which is limited. While some patrons may pass off their own counterfeit tickets, they can also be introduced by other parties ranging from ticket booth attendants to outside fraudsters selling fake tickets in the parking lot. Further, because of the very slight weight of the individual tickets, the revenue reconciliation can also be manipulated by acts as simple as wetting the unsold tickets to make it appear that fewer items were sold.

As a ride operator in business since 1923, Strates officials recognize the vulnerabilities and limitations of the traditional paper system. To combat these risks, over the past several years the company has begun implementing an electronic ticketing system at some of the smaller venues it serves, including several county fairs. The system was purchased from a third party that provides real-time backup and support when the system is used. To go on a ride, patrons purchase a "Fun Card," or sometimes a wristband, that is embossed with a unique barcode. Fairgoers present the card or band to a ride operator who swipes it with a wireless handheld reader. The barcode is verified against a central database to ensure that it is authentic and contains enough credits to pay for the ride. The scanner then shows either a green or red light to indicate if the card's balance is adequate. If so, the amount of the ride is deducted from the card's balance stored in the database. The Fun Cards can be replenished with ride credits at a ticket booth by a Strates attendant.

Strates officials indicated that their testing of the new electronic system at smaller venues has not only been more efficient, but has also resulted in significant increases in reported sales, even after accounting for other variables such as weather conditions or the length of the fairs. They

believe much of this increase is instead due to a reduction in fraud, noting that they did not find it coincidental that several of their seasonal staff failed to return for subsequent employment once these new controls were put in place. Faced with these promising results, the Department allowed Strates to begin using its electronic ticketing system to manage the Midway rides at the 2011 State Fair. If successful, electronic ticketing systems such as this could have applications across other Fair events and revenue sources.

Audit Findings and Recommendations

Overall, we found the electronic ticketing system employed for the Midway rides worked as intended and was properly installed and operated to provide appropriate security over the system and the data it contained. Midway sales and related commissions due under the contract were also properly reported, calculated and paid to the Fair in a timely manner. Although the Fair reported attendance was off by about 8 percent when compared to 2010 due to inclement weather, on-site Midway ride sales for the 12-day Fair were still up by almost one percent. For the 10 days when weather was not a factor, sales rose by \$250,000; an increase of over 13 percent. We concluded that much of the increase was due to the electronic system and its effectiveness in reducing the risk of fraudulent ticketing activities.

Controls Over the Midway Rides and Ticketing System

Electronic ticketing systems rely on a central database that is constantly updated to reflect new sales and use of ride credits. Because there is no paper trail with which to recreate transactions, emergency backup provisions are critical. Management also needs assurance not only that the system properly processes the transactions, but that it is also safeguarded to prevent unauthorized access or changes to the data. In an outdoor environment like the Fair, contingency planning is critical to protect equipment from the elements and deal with situations like power outages or flooding.

We examined Strates' efforts to mitigate each of these risks during the 2011 Fair and concluded there was minimal risk that the data could be compromised. We observed several ticket sellers and ride operators at multiple times and locations to verify that they were appropriately handling duties ranging from entering sales and issuing receipts, to scanning barcodes before admission. We also traced specific purchases and uses of ride credits at various locations and times throughout the Fair and found all transactions were processed accurately in the database. Controls were also in place to limit access to the database, and any efforts to modify or delete data were properly recorded and restricted. Further, all wireless communication was also encrypted, thereby lowering the risk of any unauthorized access to data being communicated between the database and the rides or ticket booths. Where our tests identified residual risks that could cause a disruption to the electronic ticket system, or some component thereof, the vendor has established and tested a sufficient backup plan to reduce the impact of such an incident.

We concluded the system was properly secured and functioning as intended, and that management can be reasonably assured that the information is accurate and complete for the purposes of calculating revenues and payments due under the contract. Our tests did identify certain opportunities where security controls could be improved further and these were shared with Department officials. Department officials have since indicated they have begun to address these improvements. Although the specific results of our electronic testing were shared with Department officials during our audit, the details of those findings and our suggested improvement opportunities are not included here due to the sensitivity of the information and potential risk associated with its publication.

Revenue Reporting and Impact on Fraud Risks

After the Fair concluded, we reviewed and analyzed the Fair's reconciliation of Midway revenues, including sale of pre-paid Fun Cards through third-party vendors, and found no discrepancies. We examined daily revenue figures reported by Strates, as well as final totals reconciled by the Fair, for the 2010 and 2011 Fairs. These reports include revenues from pre-paid Fun Cards sold by various retail outlets. We also verified that the revenues received from Strates were properly recorded by the Fair and deposited into appropriate accounts. We tested the accuracy of the revenue reports by downloading two days of data from Strates system and reconciling the expected revenue. We also observed ride operators, tested the proper use of Fun Cards and Wrist bands, and checked our observations and tests against Strates system to verify the transactions were accurately recorded in the system. By tracing the revenue and verifying the accuracy of the revenue reports and the system, we determined appropriate controls were in place to ensure the accuracy of the Midway revenues received by the Fair.

Overall attendance at the 2011 Fair was down by about 82,000 people, or 8 percent, compared to 2010. Yet, Midway ride sales actually increased by one percent. The drop in attendance was wholly attributable to two days – Sunday, August 29 and Labor Day, September 6 – where attendance was significantly impacted by weather; specifically the remnants of Hurricanes Irene and Lee, respectively. Fair attendance on these two days was less than half the levels recorded in 2010 and Midway ride revenues were off by almost \$230,000. Still, even with the lower attendance, Strates' Midway sales for the entire Fair increased by almost \$20,000 (one percent) even though ticket prices were unchanged. For the 10 days of the Fair when weather was not a factor, Midway sales were \$250,000 higher than the prior year; an increase of over 13 percent. In our opinion, much of this increase can be attributed to the new electronic ticketing system and its effectiveness in reducing the risk of fraud and abuse.

Recommendations

1. When contracting for amusement services such as the Midway rides at the Fair, require vendors use an electronic ticketing system.
2. Consider opportunities to implement similar electronic ticketing systems to reduce the risk of fraud and abuse associated with other events and activities held at the Fairgrounds.

Audit Scope and Methodology

We reviewed selected aspects of the controls in place over electronic ticket sales for Midway rides at the 2011 New York State Fair. Our objectives were to determine whether the system was appropriately secure and functioning as intended and whether reported revenues were accurate. As part of our review, we interviewed vendor employees and reviewed the actions taken to prepare for any potential data-related incidents. We also assessed the access controls established over the revenue data, both while it was stored and communicated. We assessed the physical security controls in place over the servers where the revenue data resides, as well as the

cables and wireless access points used to connect the different components of the information system, and the booths where electronic tickets are sold and activated. Finally, we reviewed the contract between the Fair and Strates to identify specific deliverables; observed vendor employees making sales and operating rides; reviewed, tested and analyzed sales and usage data; and verified reported revenue.

We conducted our performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained during our audit provides a reasonable basis for our findings and conclusions based on our audit objectives.

In addition to being the State Auditor, the Comptroller performs certain other constitutionally and statutorily mandated duties as the chief fiscal officer of New York State. These include operating the State's accounting system; preparing the State's financial statements; and approving State contracts, refunds, and other payments. In addition, the Comptroller appoints members to certain boards, commissions and public authorities, some of whom have minority voting rights. These duties may be considered management functions for purposes of evaluating organizational independence under generally accepted government auditing standards. In our opinion, these functions do not affect our ability to conduct independent audits of program performance.

Authority

We did this audit according to the State Comptroller's authority defined in Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law.

Reporting Requirements

A draft copy of this report was provided to Department officials for their review and comment. Their comments were considered in preparing this report. Department officials agreed with our recommendations and indicated they are considering adopting a similar electronic ticketing system for general admission to the 2013 State Fair. Their complete response is attached at the end of this report.

Within 90 days of the final release of this report, as required by Section 170 of the Executive Law, the Commissioner of the Department of Agriculture and Markets shall report to the Governor, the State Comptroller, and the leaders of the Legislature and fiscal committees, advising what steps were taken to implement the recommendations contained herein, and where recommendations were not implemented, the reasons therefor.

Contributors to This Report

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Vision

A team of accountability experts respected for providing information that decision makers value.

Mission

To improve government operations by conducting independent audits, reviews and evaluations of New York State and New York City taxpayer financed programs.

Agency Comments



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Andrew M. Cuomo
Governor

Darrel J. Aubertine
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May 25, 2012

Mr. John F. Buyce, CPA, CIA, CGFM
Office of the State Comptroller
Division of State Government Accountability
110 State Street, 11th Floor
Albany, New York 12236

Dear Mr. Buyce:

We have reviewed the draft audit report issued by the Comptroller's Office regarding Electronic Ticket Sales at the 2011 New York State Fair (2011-S-37). The Comptroller's Office audited the electronic ticketing system during its first year of use at the State Fair. The Department found the timely audit to be exceptionally helpful so that we could address any findings and weaknesses during the onset of this transformation.

As the audit report indicates, the introduction of technology to the Midway operation was extremely successful. The Department will indeed be exploring opportunities to implement similar electronic ticketing systems to other events and activities held at the Fairgrounds. We are currently considering the upgrade of the admission gates to an electronic ticketing system for the 2013 Fair.

Please contact Ms. Tracy Robbins, the Department's Director of Internal Audit, if you have any questions regarding our response or require any additional information or documentation. Ms. Robbins can be reached at (518) 457-1179.

Sincerely,

A handwritten signature in black ink, appearing to read "Darrel J. Aubertine".

Darrel J. Aubertine
Commissioner