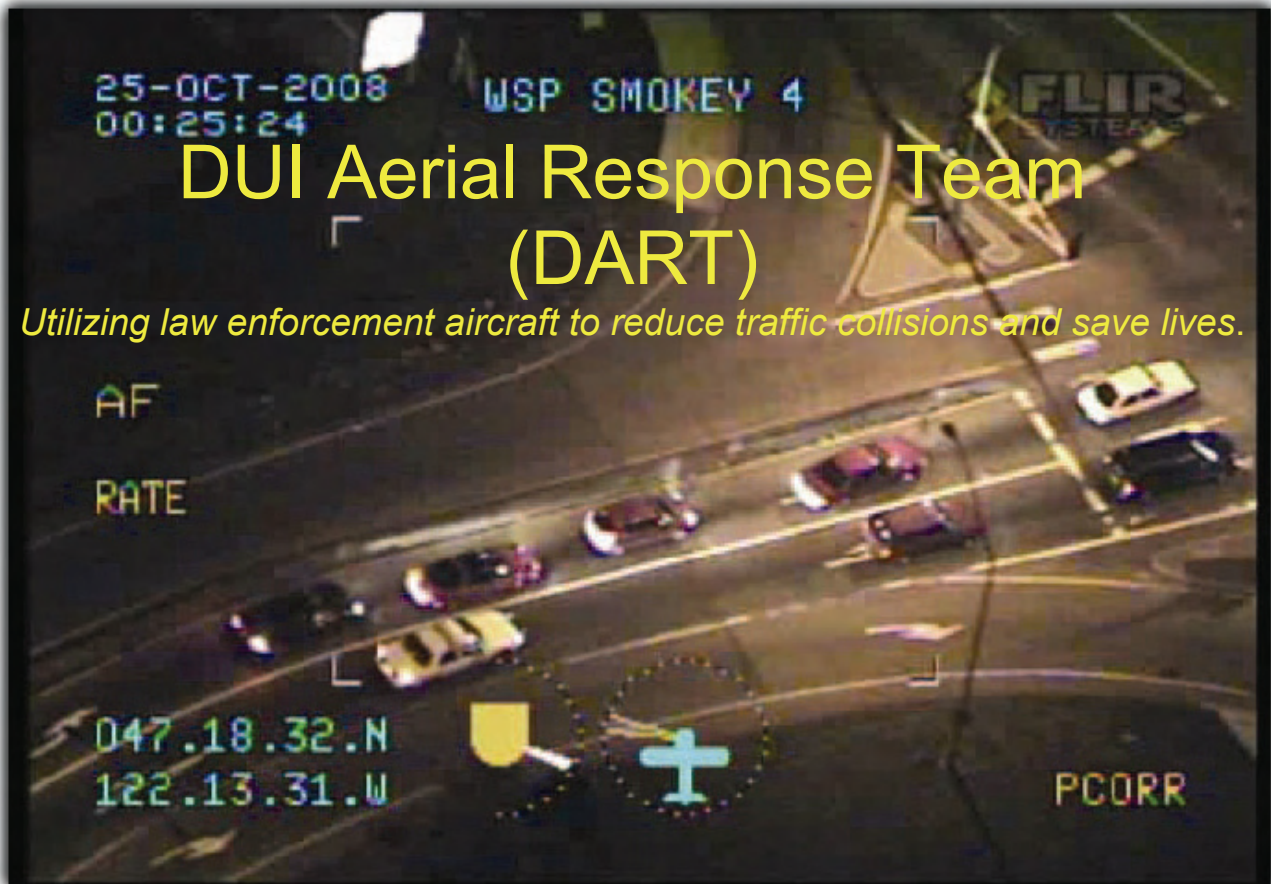


Washington State Patrol



Service With Humility



**2009 Herman Goldstein Award Submission
for
Excellence in Problem-Oriented Policing**



CHRISTINE O. GREGOIRE
Governor



JOHN R. BATISTE
Chief

STATE OF WASHINGTON
WASHINGTON STATE PATROL

General Administration Building • PO Box 42600 • Olympia, WA 98504-2600 • (360) 596-4000 • www.wsp.wa.gov

May 28, 2009

Rob T. Guerette, Ph.D.
School of Criminal Justice
Florida International University
University Park PCA 366B
11200 S.W. 8th Street
Miami, FL 33199

Dear Dr. Guerette:

It is with great pleasure that I submit the Washington State Patrol's "DUI Aerial Response Team (DART)" program for consideration for the 2009 Herman Goldstein Award for Excellence in Problem-Oriented Policing.

As outlined in the submission instructions, our project is submitted in electronic (PDF) format as an e-mail attachment.

By this letter, I attest to the program's methodology and verify that the program results are accurate and directly attributable to the DART program.

In addition to nominating this program for award consideration, I ask that it also be considered for presentation at the 2009 POP Conference.

If you have any questions about this project, please contact Lieutenant Tristan K. Atkins, Aviation Section, at (360) 753-6173.

Sincerely,

A handwritten signature in blue ink that reads "John R. Batiste".

CHIEF JOHN R. BATISTE

JRB:tka

cc: Lieutenant Tristan K. Atkins, Aviation Section
Captain Mark Couey, Special Operations Division
Assistant Chief Brian A. Ursino, Investigative Services Bureau

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Front cover: *The picture on the cover was taken by the Washington State Patrol's Forward-Looking Infrared (FLIR) stabilized video camera on October 25, 2008, from 2,000 feet above the ground. DART aircrew observed the red passenger car (behind the white car in the left lane) driving erratically on Interstate 5 near Tacoma. They followed the suspect's vehicle for over 12 miles into the city of Auburn while coordinating the stop with ground troopers (trooper's vehicle shown in bottom left of video image). Minutes after this video scene, a short vehicle pursuit ensued, followed by a 45-minute foot pursuit. The DART aircrew successfully tracked the suspect, resulting in his apprehension by troopers and Auburn Police Department K-9 units. The suspect was arrested for DUI, felony eluding, possession of cocaine, and reckless endangerment.*

Summary

Program Title

DUI Aerial Response Team (DART)

Scanning

The leading cause of traffic deaths in Washington State is driver impairment due to alcohol or drugs. In 2007, Washington State Patrol (WSP) Communications Centers in the Puget Sound metropolitan areas of Seattle, Tacoma, and Everett received 28,746 calls from citizens reporting erratically driven (possible DUI) vehicles. Initial estimates indicated that very few of these reported vehicles were contacted by law enforcement.

Analysis

A statistical baseline revealed that in the Puget Sound metropolitan area, less than 1 in 20—or approximately 4% of vehicles reported by citizens as erratically driven—were stopped by troopers. Of those 4% contacted by troopers, approximately 38% were arrested for Driving Under the Influence (DUI).

The WSP recognized that specially equipped aircraft were essential to the success of any aerial DUI program. Two existing WSP Cessna airplanes had been equipped with Forward-Looking Infrared (FLIR) cameras, and microwave downlink using post-9/11 federal homeland security funding. While these aircraft were not originally envisioned for DUI enforcement, their ability to enhance the agency's efforts to reduce traffic fatalities and collisions was readily apparent.

Response

In 2007, the WSP Aviation Section developed an innovative aerial traffic safety program called ***DUI Aerial Response Team (DART)***. DART is the first program in the nation to use FLIR-equipped airplanes to locate, track, and coordinate the apprehension of impaired, reckless, and aggressive drivers. DART effectively combines proactive aerial DUI patrols with a rapid air response to citizen reports of erratically driven vehicles (**Figure 1**, page 19).

Summary

The goals of DART are:

- Decrease traffic fatalities and collisions.
- Enhance public education of the dangers of drunk driving.
- Increase citizen-reported DUI's contacted by a trooper from 4% to 25%.
- Of those contacted, increase DUI arrests from 38% to 50%.

Assessment

During a ten-month period (July 2008 – April 2009), fatality collisions decreased 25% and injury collisions decreased 21%, compared to the same period in 2007/2008. The following DART outcomes contributed to these decreases in collisions:

- Citizen-reported DUI's contacted by troopers increased from 4% to 28%.
- DUI arrests increased from 38% to 44%.
- Over 60 media stories were attributed to the DART program, resulting in a positive deterrent effect.

The success of DART has led to increased cooperation between regional law enforcement agencies, including joint DUI emphases utilizing WSP aircraft. Law enforcement officers across the region have embraced DART as a means to reduce collisions and save lives.

Description of Program: Scanning

Problem Definition

According to the Washington Traffic Safety Commission (WTSC), the number one factor contributing to traffic deaths in Washington State is driver impairment (**Figure 2**, page 19). In 2007, traffic collisions killed 571 people in Washington State. Drunk drivers accounted for 41% of total deaths in Washington State versus 32% nationwide.

In 2007, WSP Communications Centers received 37,588 calls from citizens reporting erratically driven (possible DUI's) vehicles statewide. Of those calls, 28,746 (or 76%) originated from the Puget Sound region. Less than 8% of erratic vehicles reported to the WSP statewide were stopped by troopers. In the Puget Sound metropolitan areas of Seattle, Tacoma, and Everett, only 4% were contacted by troopers. Of those 4% contacted, nearly 38% were arrested for DUI.

How Did We Become Aware of the Problem?

WTSC studies indicate over 50% of all traffic fatalities (**Figure 3**, page 20) and nearly 70% of impaired-driver-involved fatalities occur at night (**Figure 4**, page 20). While the WSP Aviation Section (**Photo 1**, page 24) was aware of this problem, agency aircraft were not equipped for nighttime tactical law enforcement missions. Historically, WSP pilots conducted aerial traffic enforcement and other public safety missions during *daylight* hours.

Starting in 2005, the WSP Aviation Section significantly enhanced its aerial public safety capabilities through federally funded day/night FLIR camera and microwave downlink systems. These technology upgrades allowed WSP Aviation Section personnel to better examine traffic safety problems and expand their missions into nighttime hours in support of agency missions and goals. These upgrades also added a new dimension to the Aviation Section's ability to effectively provide aerial law enforcement and public safety services.

Scanning

With over 50 years of aerial traffic enforcement history during the day, WSP pilots were convinced that with newly upgraded airplanes, they could proactively locate, track, and coordinate the apprehension of drunk drivers—day and night. Equally important, they were confident they could provide a rapid air response to citizen reports of erratically driven vehicles, significantly increasing the citizen-reported DUI apprehension rate. These initiatives, coupled with increased media coverage/public education, would save lives by decreasing traffic fatalities and collisions.

Analysis

Methods and Data Used to Analyze the Problem

First-hand observation and preliminary research conducted by the WSP Aviation Section indicated that troopers contact a small percentage (4%) of citizen-reported erratically driven vehicles. To better understand the problem, the Aviation Section conducted a “test of concept” aerial DUI emphasis with a media kick-off event over Memorial Day Weekend 2007.

The emphasis was considered a success, because it validated that a specially equipped airplane could effectively locate, track, and coordinate the apprehension of drunk drivers. The success was reinforced when aerial video from the emphasis aired on four of Seattle’s major television news stations. More importantly, analysis of the first aerial DUI emphasis led to the development of a statistical baseline and a commitment by the Aviation Section to move forward with a permanent aerial DUI program.

Statistical Baseline Established

Additional research by the WSP Communications Division in July 2007, using Bi-Web data from Computer-Aided Dispatch (CAD) software, established a statistical baseline that verified our initial estimate indicating that only a small percentage of citizen-reported erratically driven vehicles were contacted by law enforcement (**Table 1**, page 23).

The statistical baseline was derived from citizen reports of erratically driven vehicles received at eight WSP Communications Centers over a six-month period (January-June 2007). This baseline study provided the following data by each WSP district:

1. Number of citizen-reported erratically driven vehicles

2. Number of citizen-reported vehicles contacted by troopers

3. Number of drivers subsequently arrested for DUI

Analysis

The baseline revealed that statewide, less than 8% of citizen-reported vehicles were stopped by troopers. In the Puget Sound metropolitan area, the percent contacted by troopers was only 4%. However, of the 4% stopped, nearly 38% were arrested for DUI. It became evident that citizens were “getting it right” when reporting possible drunk drivers. The problem was a trooper not being in the vicinity to respond and take the “hand-off” from the citizen caller. WSP Aviation personnel wanted to close this gap and felt the solution lie in its specially equipped airplanes.

Stakeholders Identified and Input Solicited

Early in the process, funding requirements drove the identification and development of stakeholders. Initial funding was obtained as a result of an innovative partnership with Navy Region Northwest (NRNW), while subsequent federal funding was obtained from the Urban Area Security Initiative (UASI).

The WSP recognized early that specially equipped aircraft were essential to the success of any aerial DUI program (**Photos 2 and 3**, pages 24/25). A stabilized imaging system with Forward-Looking Infrared (FLIR) camera and zoom capabilities was a must. Since approximately 70% of impaired driver-involved fatalities in Washington State occurred at *night*, it was critical that these aircraft be configured for safe night tactical operations. This included the installation of a Terrain Awareness and Warning System (TAWS) and a radar altimeter in each DART airplane.

In 2005, using federal homeland security funding, two WSP airplanes were equipped with FLIR, microwave downlink, and digital video recorders. Additional federal funding in 2006-2008 was used to purchase TAWS, radar altimeters, Iridium satellite phones, and Global Positioning System (GPS) moving maps. While these specially equipped airplanes were not originally envisioned to conduct DUI enforcement, it quickly became apparent to WSP aircrews that they would be effective tools to help the agency address a core mission—DUI enforcement.

Analysis

Stakeholder input, involvement, and commitment were crucial to the successful implementation of the DART program. In fact, the concept of stakeholder involvement was integrated into the program's eventual name: DUI Aerial Response Team. The team of primary stakeholders consists of:

- WSP Aviation Section
- WSP Field Operations Bureau (FOB) district troopers
- WSP Communications Division
- Motorists armed with cellular phones

The four primary stakeholders had an integral role in day-to-day development of the DART program and provided the following resources:

- **WSP Aviation Section:** Aircraft, aircrews, and aircraft maintenance services.
- **WSP Communications:** Communications Officers, 911 call center, and CAD.
- **WSP FOB/Districts:** Line troopers trained to work with the aircraft to stop violators.
- **Motorists/Citizens:** "Eyes and ears" with cellular phones to report possible DUI's.

The WSP Aviation Section solicited input from the primary stakeholders often and early in the process. Primary stakeholder input, combined with lessons learned from "test of concept" and operational testing aerial DUI emphases led to the following assumptions:

- DART is most effective when the reporting citizen is kept on the line until the aircraft is overhead.
- Effectiveness is improved when aircrew communicate directly with the reporting citizen.
- Downlink of aerial video into WSP Communications Centers improved situational awareness.
- DUI emphases with an aircraft require prior coordination between aircrews, district, and communication (dispatch and 911) personnel.
- Written procedures reinforced with training were required prior to operational phase.

Analysis

While secondary stakeholders did not have a role in day-to-day development of the DART program, their input and resources were critical to attaining milestones. Secondary stakeholders provided the following resources:

- **Washington Traffic Safety Commission**
Traffic safety funding and program support.
- **WSP Information Technology Division (ITD)**
Remedy tracking software required to assess results.
- **Mothers Against Drunk Driving (MADD)**
Network of anti-drunk driving activists and infrastructure for public education efforts.
- **WSP Government and Media Relations (GMR)**
Media expertise and coordination efforts.
- **Snohomish County Department of Emergency Management (DEM)**
Facility with FLIR receiver to host media events and aerial DUI emphases.
- **Washington State Emergency Management Division (EMD)**
Provided technical expertise to view “real-time” video from DART missions on internet.

Response

Goals of the DUI Aerial Response Team (DART)

In an effort to reduce traffic fatalities and collisions, WSP Aviation developed an innovative aerial traffic safety program in 2007/08. The initiative, called the *DUI Aerial Response Team (DART)*, is the first program in the nation to use FLIR-equipped airplanes to locate, track, and coordinate the apprehension of impaired, reckless, and aggressive drivers.

The primary goals of DART are:

- Decrease traffic fatalities and collisions with specially equipped airplanes.
- Enhance public education of the dangers of drunk driving and discourage individuals who have been drinking from getting behind the wheel.

The secondary goals of DART are:

- Increase citizen-reported DUI's contacted by troopers from 4% to 25%.
- Of those contacted, increase DUI arrests from 38% to 50%.

Response Used to Resolve the Problem

DART was envisioned as a team effort comprised of citizens armed with cellular phones, WSP aircrews, ground troopers, and WSP Communications Officers to effectively combine proactive aerial DUI patrols with a rapid air response to citizen reports of erratically driven vehicles (**Figure 1**, page 19).

Based on analysis of aerial DUI emphases conducted in 2007, we learned that DART provides numerous advantages over the traditional method of responding to citizen reports of possible drunk drivers, including:

- **Rapid response:** Flying above traffic congestion at over 160 mph allows WSP aircrews to arrive over a citizen-reported erratically driven vehicle, typically in less than five minutes.

Response

- **Aerial view:** With an “Eye in the Sky” view (**Photo 4**, page 25), DART aircrews easily direct troopers to suspected drunk drivers while developing probable cause for a stop.
- **Improved officer safety:** After the stop, DART aircrews remain overhead—with the video running and ready to call for help—until the suspect is in custody.

While the most expensive technology required for a successful aerial DUI program—FLIR and microwave downlink systems—was purchased with federal homeland security grant monies in 2005, additional equipment was needed for effective night operations. Federal funding from the Urban Area Security Initiative (UASI) in 2007 and 2008 facilitated full implementation of the DART program. With UASI funding, two WSP Cessna 206 airplanes (known as Smokey 3 and Smokey 4) were configured for night tactical operations with a Terrain Awareness and Warning System (TAWS), radar altimeter, and GPS moving map systems.

The DART concept was tested over Memorial Day Weekend in May 2007 with a DUI emphasis and media kick-off event at the Snohomish County Emergency Operations Center (EOC) located in Everett. The emphasis resulted in 11 erratically driven vehicle contacts, including 1 reckless driving arrest, 1 open container, and 2 DUI arrests. Two Seattle television news stations covered the event live. The emphasis resulted in 15 media stories, including front page coverage in the *Everett Herald* [**Media (Public Education)**, page 26].

Operational testing began Labor Day Weekend, August 2007, with a highly publicized DUI emphasis in the Seattle metropolitan area. DART aircrews responded to three citizen-reported DUI's and coordinated the arrests of one reckless driver, two negligent drivers, and one felony eluding suspect. The *Everett Herald* covered an aggressive driving emphasis that led up to the evening DUI emphasis, and four Seattle television news stations provided live reports of this special emphasis.

Response

The Labor Day Weekend emphasis identified the need for aircrews to communicate directly with the reporting citizens following potentially drunk drivers. A previously approved UASI federal grant was modified to allow the purchase of two satellite phone systems, which were installed by WSP Aviation Section aircraft maintenance technicians in June 2008.

Following the Labor Day Weekend emphasis, tactics and techniques were further refined and written into published DART procedures (**DART Procedures**, page 31). With a written procedure in place, WSP Aviation Section personnel took on the task of training Communications Officers and commissioned supervisory personnel on the roles and responsibilities of WSP personnel during DART missions. The training included a PowerPoint presentation with embedded media videos from previous aerial DUI emphases.

In April 2008, a trooper was reassigned from the Field Operations Bureau to the Aviation Section to serve as a full-time Tactical Flight Officer (TFO). The TFO is an essential member of the DART aircrew and operates the stabilized FLIR camera/video, microwave downlink system, digital recorder, GPS moving map system, Mobile Communications Network (MCN) computer uplink/downlink, voice over video overlay system, satellite phone systems, and law enforcement radios.

With enhanced staffing, additional technology upgrades, and newly trained personnel, the DART program achieved full operational capability on July 1, 2008. DART flights were scheduled from 4 p.m. to 2 a.m., Wednesdays through Saturdays. Overtime funding from the WTSC provided the flexibility to extend shifts beyond 2 a.m., when needed.

Since 40% of the state's impaired-driving-related fatalities occurred in the metropolitan Puget Sound area (**Figure 5**, page 21), DART emphases and flights were conducted primarily in King,

Response

Pierce, Snohomish, and Thurston Counties. In the first ten months of scheduled DART flights, WSP aircrews conducted 161 missions and flew 736 hours over these counties.

Accountability Links and Target Dates

The WSP Aviation Section identified action items and established accountability links and target dates prior to implementing the response plan. Regular meetings with stakeholders were held to develop and track action items. The exchange of information during these meetings focused on task accomplishments, challenges, and milestones. The most critical actions items included:

- Conduct night “feasibility testing” utilizing FLIR aircraft.
 - Accountability link: WSP Aviation Section
 - Target dates: August 06 – May 07
- Upgrade FLIR aircraft technology to enhance night capabilities.
 - Accountability link: Aviation, State EMD, UASI grant committees
 - Target dates: April 07 – July 08
- Conduct “test of concept” aerial DUI emphases and public education (media events).
 - Accountability link: Aviation, GMR, FOB, Snohomish County DEM
 - Target dates: May 07 – Dec 07
- Refine DART techniques and procedures; conduct training.
 - Accountability link: Aviation, WSP Districts 1, 2, & 7, WSP Communications
 - Target dates: Sept 07 – July 08
- Fund temporary, full-time Tactical Flight Officer (TFO) positions.
 - Accountability link: Aviation, District 1, WSP Human Resource Division
 - Target dates: April 08 – July 08

Response

Difficulties Encountered During Implementation

Obtaining and managing federal grants was the most challenging obstacle encountered during implementation of the DART program. Five federal grants and one state grant funded:

- Upgrades for two WSP airplanes with FLIR and other technology.
- Installation of FLIR ground receivers with a fiber optics distribution infrastructure.
- Aircrew overtime.

Other difficulties overcome during implementation included:

- **Staffing:** No full-time Tactical Flight Officers (TFO) assigned to the Aviation Section.
 - **Partial Solution:** WSP Field Operations Bureau (FOB) provided temporary, full-time TFO.
- **Equipment:** Initially, no satellite phone systems installed in the FLIR airplanes.
 - **Solution:** Federal grant modified to fund purchase of Iridium satellite phone systems.
- **Viewing Video:** Initially, WSP District 1/Tacoma Communications could not control/view FLIR receiving antenna.
 - **Solution:** Link installed to allow D1/Tacoma to use receiver at Camp Murray.
- **Procedures/Techniques:** No “how-to” manual available (WSP wrote the “book”).
 - **Solution:** WSP Communications Division procedure written (**DART Procedures**, page 31).
- **DART Value Skeptics:** Troopers and Communications Officers skeptical—will it work?
 - **Solution:** Convincing video shown during training with district supervisors and Communications Officers.

Assessment

Results (Outcomes)

During a ten-month period (July 2008-April 2009), DART missions were analyzed to determine outcomes. The analysis demonstrated that WSP DART missions significantly increased trooper contacts of citizen-reported vehicles. Specific DART outcomes included:

Citizen-reported DUI's contacted by troopers increased from 4% to 28%

DUI arrests increased from 38% to 44%

Results (Outputs)

With the assistance of the WSP Information Technology Division (ITD), the Aviation Section's computerized data system (Remedy) was modified to track DART outputs (**Figure 6**, page 21). These outputs were tracked and reported monthly at command-level accountability briefings. The most significant outputs for the ten-month period are listed below. These include citizen-initiated call for service contacts and proactive WSP aircrew contacts.

- **151 erratically driven vehicle responses**
- **84 possible DUI's tracked from the air**
- **67 possible DUI's contacted**
- **37 DUI's arrested**
- **29 reckless driving arrests**
- **182 aggressive driving arrests**
- **19 vehicle pursuits safely managed from the air**
- **112 suspect searches/containments**
- **375 officer safety assists**
- **9 stolen vehicle recoveries**
- **461 total traffic and criminal violations**
- **1,687 traffic congestion responses**

Assessment

Results (Public Education)

The DART program increased public awareness of the dangers of drunk driving. During the first ten months of the DART program, more than 60 stories were reported in various media format [Media (Public Education), page 26]. These included newspapers, magazines, newsletters, television, radio, and internet. These stories served as a positive deterrent by discouraging some individuals from drinking and driving.

DUI and other traffic safety emphases that previously attracted little media interest now received priority media coverage whenever a DART aircrew was involved. Traffic safety stories that may have gone unnoticed were suddenly newsworthy once the media was provided with aerial video of a dramatic pursuit or other extreme driving behavior.

Media coverage attributed to the DART program has significantly advanced the Patrol's traffic safety education efforts. The WSP Aviation Section is allotted less than 1% of the agency's personnel and resources; however, in the last six months of 2008, over 15% of all WSP traffic safety DUI-related media stories in the Puget Sound region were attributed to the DART program. WSP Government and Media Relations (GMR) recently recognized the WSP Aviation Section and DART as the most effective new public safety program for disseminating the agency's traffic safety message.

Impact on the Problem

From July 2008 – April 2009, troopers in the DART target area investigated 25% fewer fatal collisions and 21% fewer injury collisions than in the same period in 2007/2008. We know that in 2007, DART had limited impact during its infancy. With the start of consistent DART shifts in July 2008, the increase in the apprehension of reported drunk drivers, coupled with enhanced public education, contributed toward the following decreases in fatality and injury collisions:

Assessment

- Fatality collisions July 2008 – April 2009 compared to the same period 2007/2008:

— King County/Seattle:	0% decrease	
— Pierce County/Tacoma and Thurston County:	36% decrease	↓
— Snohomish County/Everett:	46% decrease	↓
— Overall average:	25% decrease	↓

- Injury collisions July 2008 – April 2009 compared to the same period 2007/2008:

— King County/Seattle:	21% decrease	↓
— Pierce County/Tacoma and Thurston County:	8% decrease	↓
— Snohomish County/Everett:	28% decrease	↓
— Overall average:	21% decrease	↓

We know DART contributed to these reductions because of the significantly higher number of arrests in the following areas:

- Citizen-reported DUI's
- Aggressive drivers
- Reckless drivers
- Erratic drivers

All of the above were contacted by troopers working in concert with DART aircrews. These outcomes and the deterrent impact of the positive traffic safety media stories are certainly linked to the reduction of collisions in the DART target area.

Methods of Evaluation

A unique flight sheet was developed specifically for DART missions. DART aircrews recorded all activity on the flight sheet, which served as a permanent historical document. Flight sheet activity was then entered into the Remedy tracking system at the conclusion of each mission.

Assessment

Remedy reports were reviewed weekly by Aviation Section management and supervisory personnel to ensure objectives and goals were being achieved (**Figure 7**, page 22). The Aviation Section worked closely with ITD personnel to modify Remedy applications in order to meet evolving tracking and reporting requirements.

The statistics provided by Remedy were then translated into usable results that were used to measure the increase in the arrests of citizen-reported DUI's. The following mathematical formulas were then applied to the citizen-reported DUI statistics provided by Remedy:

- $\text{DUI's contacted} / \text{DUI responses} =$
 $\text{\% of citizen-reported DUI's contacted}$

**43 DUI's contacted /
151 DUI responses = 28.5%**

- $\text{DUI's arrested} / \text{DUI contacted} =$
 \% arrested

**19 DUI's arrested /
43 contacted = 44.2%**

The above percentages, based on ten months of DART flights, were then compared to the original six-month statistical baseline (4% contacted / 38% arrested). Computer-Aided Dispatch (CAD) Bi-Web data was used to obtain the year-to-year comparisons of collision data to determine the DART program's impact on fatality and injury collisions in target areas.

Conclusion

The DART program is an exceptional example of utilizing airborne law enforcement resources to bring about a reduction in traffic fatalities and injury collisions by more effectively responding to citizen-reported erratically driven vehicles.

Internationally, thousands of law enforcement agencies operate aircraft. Public safety agencies are increasingly equipping these aircraft with FLIR and other crime-fighting technology. Like the WSP, most of these agencies may not have originally envisioned utilizing these aircraft for DUI, reckless, and aggressive driving enforcement. The WSP DART program serves as a blueprint to other agencies looking for an innovative and effective approach to reducing traffic fatalities and collisions.

Agency and Officer Information

Key Project Team Members

The DART program was implemented and administered primarily by WSP Aviation Section managers, pilots, tactical flight officers, aircraft maintenance technicians, and administrative staff.

Management Personnel

Captain Mark Couey, Special Operations Division Commander
Lieutenant Tristan K. Atkins, Aviation Section Commander

Pilots and Tactical Flight Officers

Sergeant Jim Nobach, Chief Pilot
Trooper Paul Speckmaier, Command Pilot
Trooper Scott Sborov, Command Pilot
Trooper Jeff Hatteberg, Command Pilot
Trooper Scott Sweeney, Pilot
Trooper Troy Davis, Pilot
Trooper Dwayne Korthuis-Smith, Pilot
Trooper Jonathan Ames, Tactical Flight Officer

Aircraft Maintenance Technicians

Mr. Jim Beins, Aircraft Maintenance Supervisor
Mr. Gary Bade, Aircraft Maintenance Technician
Mr. Brian Lord, Aircraft Maintenance Technician
Mr. Shannon Franciso, Aircraft Maintenance Technician

Administrative Support

Ms. Aloha Watson, Administrative Assistant

Non-Aviation Section Key Project Team Members

Sergeant Kirk Rudeen, Public Information Officer (PIO)
Ms. Julie Parkin, WSP Information Technology Division (ITD) / Remedy Program Manager
Ms. Jo Baumgartner, WSP Communications Division/District 2 Station Manager
Ms. Laurie Langlois, WSP Communications Division/District 1 Station Manager
Mr. Mark Wilton, WSP Communications Division/Assistant Administrator
Mr. Mario Badua, Washington State Emergency Management Division (EMD)
Mr. Rick Kammerer, Snohomish County Department of Emergency Management (DEM)

Program Contact

Brian Ursino
Assistant Chief
Investigative Services Bureau
Washington State Patrol
P.O. Box 42600
Olympia, WA 98504-2600

Tel: (360) 704-2979
Fax: (360) 586-1628
E-mail: Brian.Ursino@wsp.wa.gov

Appendices - Figures



Figure 1: "Eye in the Sky" graphic (DART step-by-step)

Driver Errors in Washington Fatal Crashes, 1998-2007

By Percent of All Drivers in Fatal Crashes (N=8,263)

As identified by collision investigators

Source: FARS

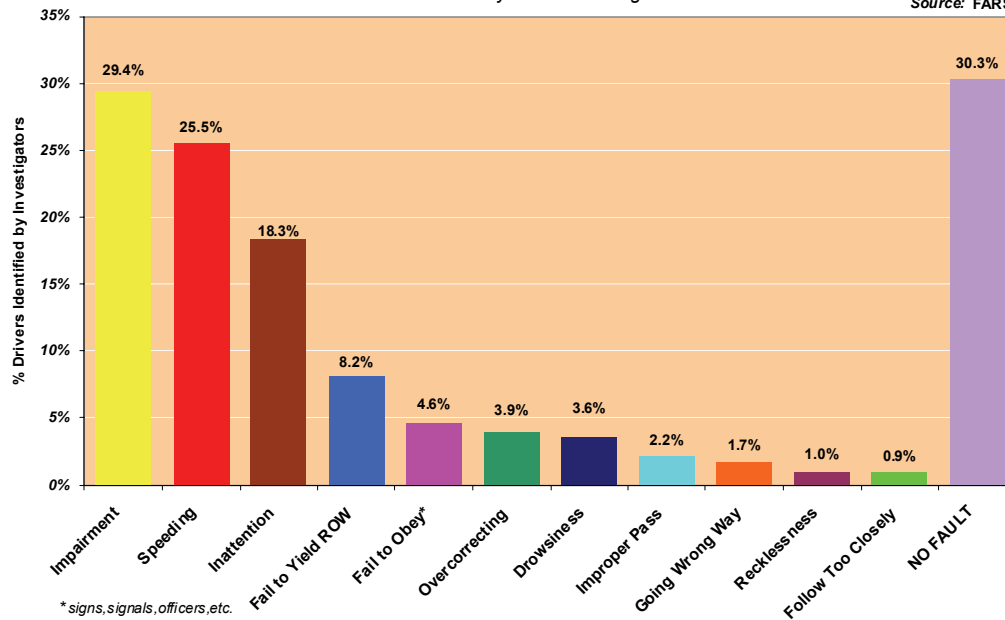


Figure 2: Driver Errors in Washington State Fatal Crashes, 1998-2007 (WTSC)

Appendices - Figures

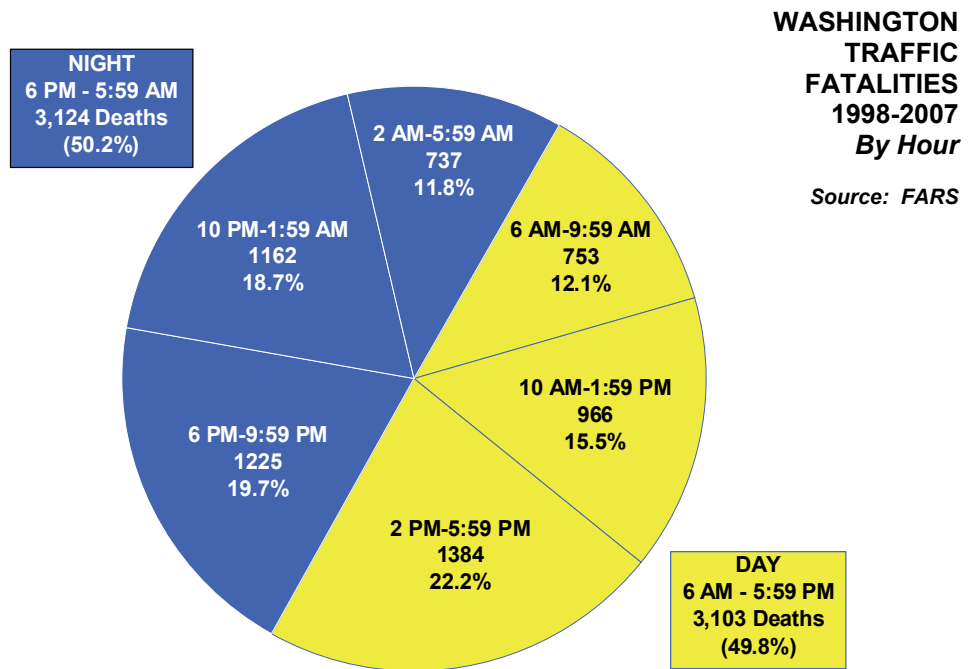


Figure 3: Washington State Traffic Fatalities, 1998-2007 (By Hour)

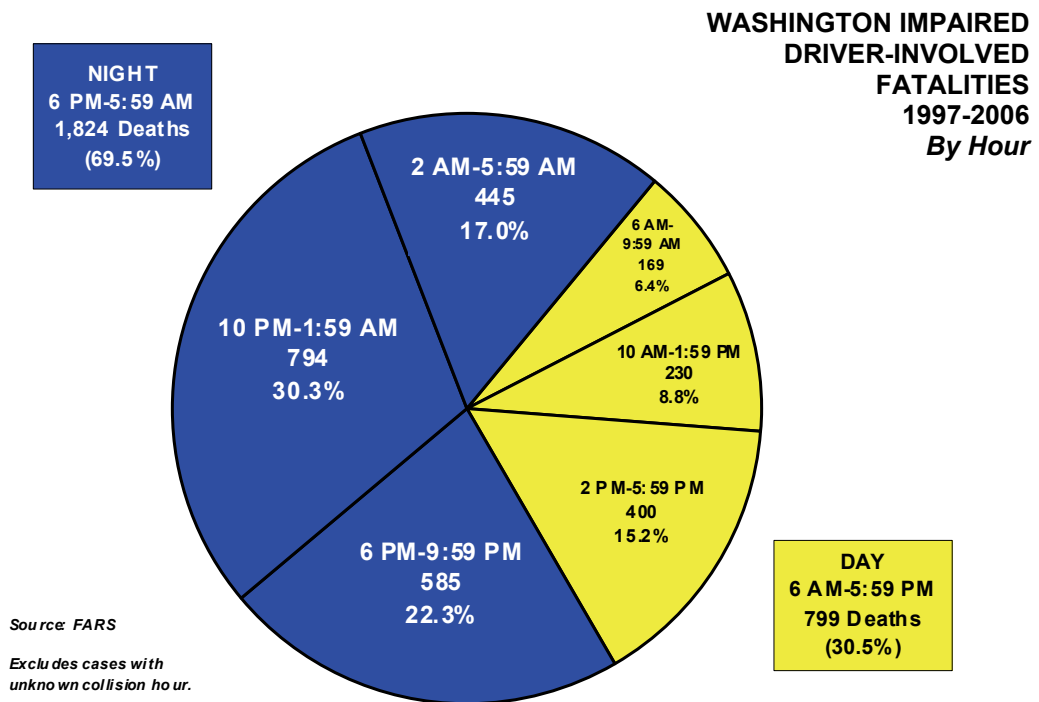


Figure 4: Washington State Impaired Driver-Involved Fatalities, 1997-2006 (By Hour)

Appendices - Figures

Impaired Driving Related Fatalities, 2001-2007

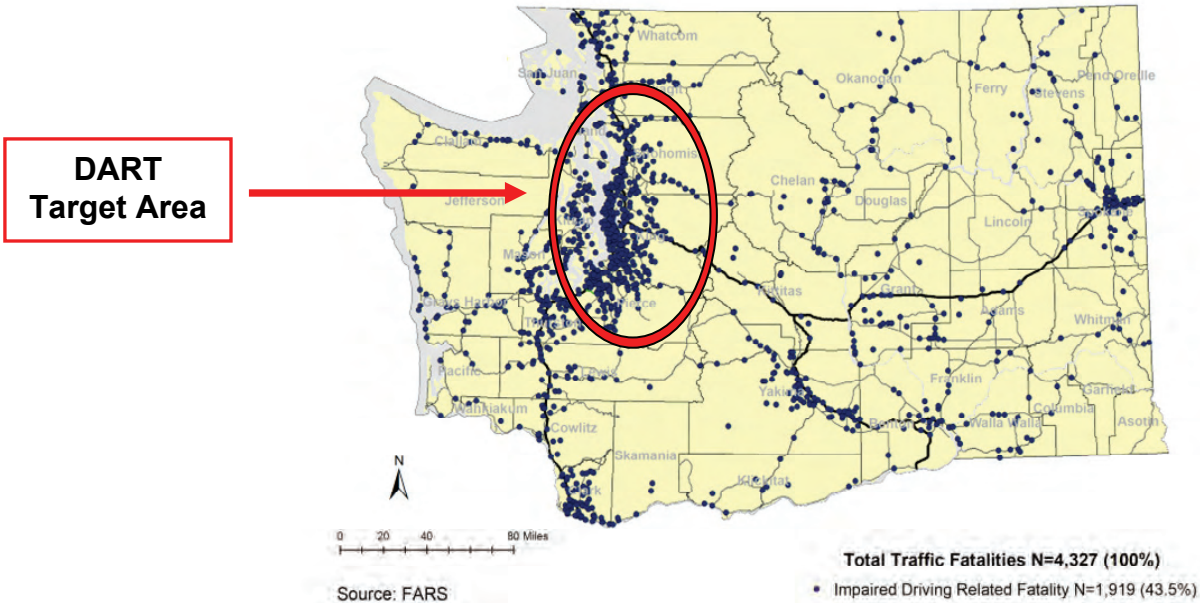


Figure 5: Impaired-Driving-Related Fatalities Map, 2001-2007

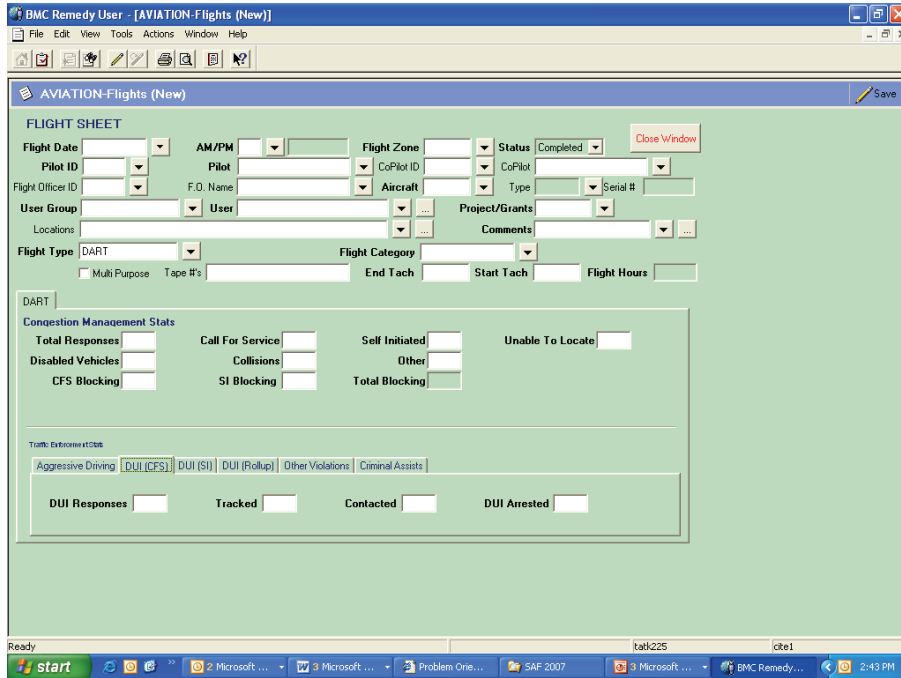


Figure 6: The WSP Aviation Section’s computerized data system (Remedy)

Appendices - Figures

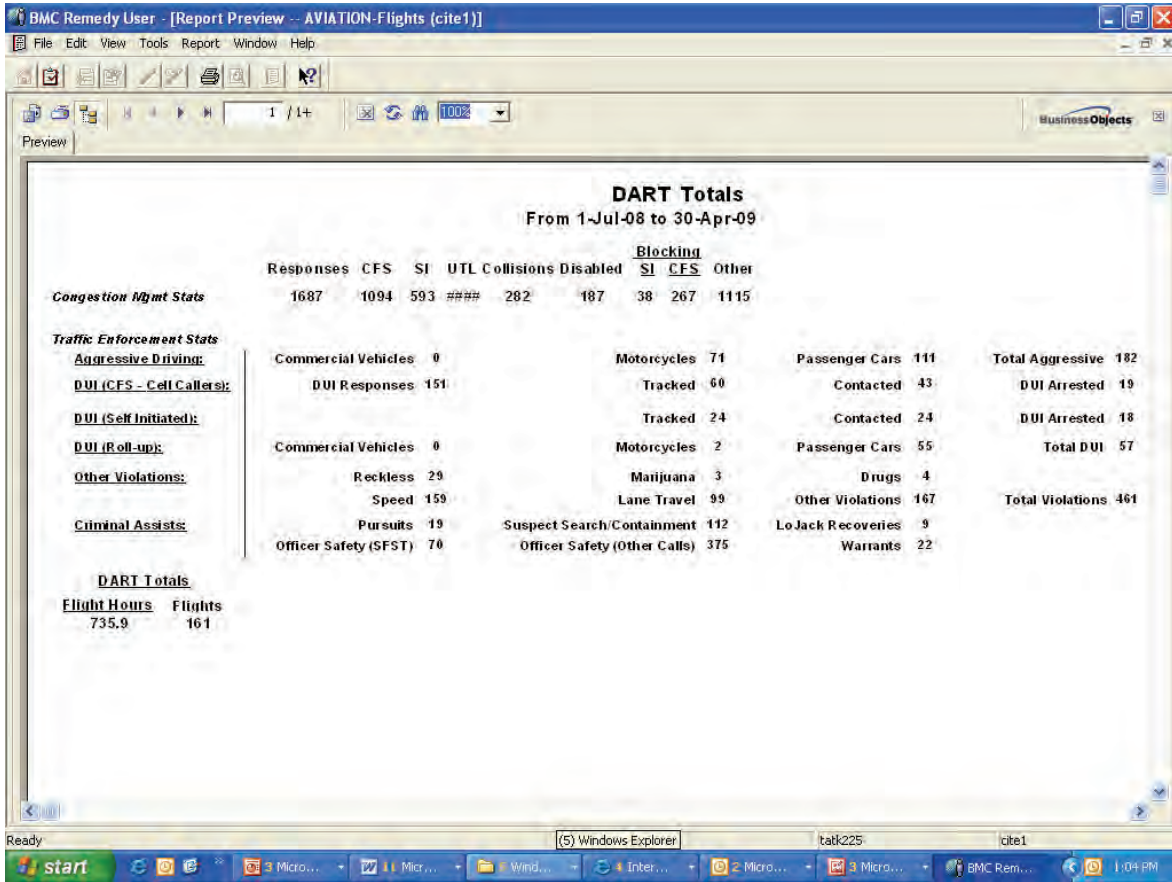


Figure 7: DART Remedy Report

Appendices - Tables

Citizen Reports of DUI's (1/1/07- 6/30/07)					
	<u>DUI Reports Total Contacted</u>		<u>% Contacted</u>	<u>Total DUIs</u>	<u>% Contacted DUI</u>
District 1	3031	113	3.73%	36	31.86%
District 2	4676	187	4.00%	91	48.66%
District 3	1185	213	17.97%	55	25.82%
District 4	289	93	32.18%	62	66.67%
District 5	997	180	18.05%	75	41.67%
District 6	691	133	19.25%	32	24.06%
District 7	5510	297	5.39%	99	33.33%
District 8	1021	166	16.26%	61	36.75%
Agency Total	17400	1382	7.94%	511	36.98%

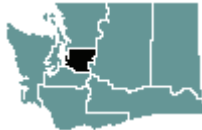
District 1/Tacoma: 3.7%	District 2/Seattle: 4%	District 7/Everett: 5.4%
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Table 1: Statistical baseline of Citizen-Reported DUI's, January – June 2007

WSP Field Operations Bureau (FOB) Districts Participating in the DART Program



District 1: Pierce and Thurston Counties
Major City: Tacoma



District 2: King County
Major City: Seattle



District 7: Includes Snohomish County
Major City: Everett



Appendices - Photographs



Photo 1: WSP Aviation Section, Olympia Regional Airport



Photo 2: Trooper Jon Ames (TFO) with WSP specially equipped FLIR airplane

Appendices - Photographs



Photo 3: Trooper Jon Ames (TFO) operating FLIR from rear seat of WSP airplane



Photo 4: Eye in the Sky view to track possible DUI's from 3,000 feet above

Appendices - Media (Public Education)

Example newspaper story from Memorial Day Weekend 2007 DART Emphasis:



The Herald - Everett, Wash. - www.HeraldNet.com

Published: Friday, May 25, 2007

Police planes to hunt DUIs Troopers overhead will track impaired drivers

By Jackson Holtz
Herald Writer



New technology may make Snohomish County a particularly bad place to drink and drive this weekend.

Police plan to be watching from the sky with sophisticated video. They're asking drivers to keep an eye out from the ground and to use cell phones to report suspected drunken drivers.

They hope the partnership will prevent accidents and fatalities during one of the year's busiest travel times.

"The bottom line for us is public safety," Washington State Patrol trooper Kirk Rudeen said. "We're trying to make the roads safe. The more impaired drivers we remove from the roadways, the safer the roadways are going to be."

The Memorial Day crackdown marks the first time that police anywhere in the U.S. have decided to use an airplane equipped with heat-seeking cameras in cooperation with the public to nab drunken drivers, Rudeen said.

Troopers want people to call 911 - if they can do so safely -when they see someone they suspect is driving impaired. People should look for erratic lane changes, a driver going too fast or too slow, he said.

"The first thing they think is, 'Wow, that guy's drunk,' " Rudeen said.

Dispatchers who field a drunken driving complaint will radio the aircraft. Travelling at 150 mph, it can be anywhere in the county in a matter of minutes, Rudeen said.

The airplane will use sophisticated video to lock in on the suspected drunken driver, capturing a record of how and where the person is driving. The video, known as Forward Looking Infrared Radar or FLIR, can record images in the dark and through cloud cover, Rudeen said.

The video feed and other information will be relayed to troopers on the ground. Suspected drunken drivers will be stopped, and if they're deemed to be under the influence, arrested. "We can hopefully get another impaired driver off the roadway," Rudeen said.

Appendices - Media (Public Education)

Troopers plan to work with the county's Department of Emergency Management to access a video receiver that can pick up transmissions from aircraft up to 50 miles away.

The receiver, purchased using federal Homeland Security grant money, can provide officials with real-time video information during a disaster, such as last winter's flooding, said county Emergency Management director John Pennington.

The receiver can be used during floods to monitor rivers and levees, capturing images beamed by FLIR-equipped helicopters and planes operated by the State Patrol or the Snohomish County Sheriff's Office.

This weekend, troopers plan to use the big-screen monitors at the county's Emergency Operations Center to monitor the airborne effort to track drunken drivers.

Police want to repeat last year's record of no traffic fatalities in Snohomish County during Memorial Day weekend, Rudeen said. In 2005, three people died and five were injured on I-5 in Marysville in a five-car crash on Memorial Day.

In the last year, troopers have stepped up enforcement on drunken drivers, using special patrols at night and around holidays or events notorious for drinking. Since January, troopers have pulled over 1,117 suspected drunken drivers in the county, 23 percent more than the same time last year, Rudeen said.

With warm, sunny weather forecast all weekend, people should enjoy the holiday and not worry about drunks, he said. "We're in the business of saving lives and that's what we're going to do by removing impaired drivers."

Example TV News story from Memorial Day Weekend 2007 DART Emphasis:



WSP To Use New Technique To Bust Drunken Drivers

POSTED: 7:18 am PDT May 25, 2007
UPDATED: 10:05 am PDT May 25, 2007

EVERETT, Wash. -- The Washington State Patrol said it will be using a new technique to crack down on drunken drivers this weekend. Authorities said the technique has never been used before.

Using aircraft equipped with Forward Looking Infrared Radar, police can see real-time live video of cars on the ground. Police said specially equipped airplanes, video feed and troopers on the ground will all work in tandem Memorial Day weekend to help stop people from driving under the influence.

The State Patrol showed KIRO 7 Eyewitness News the FLIR in action last month.

Appendices - Media (Public Education)

Authorities said the public plays an important role in DUI crackdown and encouraged drivers to call 911 if they think they see an impaired driver.

Police said information received about possible drunken drivers will be relayed to troopers in a plane who will then track the driver and send live video to a command center. Troopers on the ground can then move in to make an arrest if necessary.

The emphasis patrol will be on Interstate 5 in Snohomish County. The State Patrol said they hope the program will result in no fatality crashes this weekend.

Example TV News story from Memorial Day Weekend 2007 DART Emphasis:



Eye in the sky on the lookout for drunk drivers

Story Published: May 26, 2007 at 11:39 AM PDT

Story Updated: May 26, 2007 at 11:47 AM PDT

For the first time ever a nighttime drunk driving emphasis patrol is using a bear in the air. It is a specially equipped State Patrol airplane that sees in the dark with radar imaging.

And they're counting on drivers to help them by calling on their cell phones alerting them to suspected drivers. They'll take it from there.

The command post is at the Snohomish County Emergency Management center. The folks there are taking in the signal from the bear in the air that's on the prowl for drunk drivers.

You've seen the state patrol airplanes at work in the daytime cracking down on speeders and other law violators. But now for the first time anywhere in the country the state patrol is in the air at night looking through its thermal imaging camera. They are sensing the heat off the vehicles and sensing the drunks behind the wheel.

"The great thing about this equipment is it's an extension of someone's cellular phone," said Capt. Mark Couey of Washington State Patrol. "If they get on the cell phone and call 911 we now have a trooper in the air and can immediately respond to whatever that citizen observes."

The patrol says oftentimes drivers will call in with a DUI tip, but they can't get a trooper there in time. Now they can call on the airplane to get there in a hurry and watch the suspect, videotape the driving and direct the troopers on the ground to move in and make the arrest.

"We've been mainly using it in the daytime for aggressive driving enforcement, traffic enforcement, for some homeland security missions, but now we're going to give it a try and see how well it does on DUI enforcement at night," said Lt. Tristan Atkins of Washington State Patrol.

Appendices - Media (Public Education)

The planes are getting more sophisticated in their capabilities with high-powered cameras that send the signal in real time right to the authorities on the ground.

"I think that we're breaking new ground here," Couey said.

The emergency management folks say the other good use of this technology is during floods. They can keep an eye on floods at night and get people out of harms way

Example newspaper story from October 2007 DART Emphasis:



KING COUNTY: First driver of Ferrari arrested, second driver of Ferrari arrested

THE NEWS TRIBUNE

Published: October 29th, 2007 01:00 AM

A Washington State Patrol airplane helped catch a suspected drunken driver in a Ferrari on Friday, the agency said in a statement released Sunday.

While on routine patrol on Highway 520 near Interstate 405 in King County, troopers in the plane spotted a 2005 Ferrari F430 (which retails for \$170,000 and up) weaving through traffic. They radioed to cars on the ground that they were having a hard time keeping up.

The car got off Interstate 5 at Mercer Street, where it was stopped by troopers and pulled over at a self-storage facility. The driver, a 35-year-old Monroe man, was arrested on suspicion of DUI and reckless driving.

The owner of the car also was inside. He asked that the car, which had a special clear engine hood, not be impounded. Since it was parked on private property, it was left with the owner, who was supposed to make arrangements to move it, according to the State Patrol statement.

A tow truck arrived, but not seeing any troopers in the area any longer, the owner sent it away and got behind the wheel. He didn't notice that the State Patrol airplane was still overhead.

The car was stopped again, and the owner was arrested on suspicion of DUI and obstructing police. He reportedly registered a 0.12 on the breath-alcohol test.

The Ferrari was impounded.

Example newspaper story following DART full implementation in July 2008:



Published August 30, 2008

DUI tracking takes to the air

BY STEVEN POWELL

The Washington State Patrol is going high-tech to catch law-breaking drivers at night.

A State Patrol airplane observed a white Cadillac Escalade driving erratically north on Interstate 5 from Olympia early Friday morning.

Using a stabilized aerial video camera with thermal imaging, the troopers videotaped the sport utility vehicle as the driver passed other cars, going faster than 110 miles per hour.

A ground trooper stopped the driver just north of the Nisqually River Bridge in Pierce County, near the Thurston County line.

The driver, a 24-year-old man from Tacoma, was taken into custody on suspicion of DUI and a felony drug warrant about 12:38 Friday and booked into Pierce County Jail.

Starting this month, State Patrol began routinely using specially equipped airplanes to assist with DUI enforcement. The new program is called DART, or DUI Aerial Response Team.

DART uses "forward-looking infrared-equipped" airplanes to find and coordinate apprehension of impaired and reckless drivers, according to the State Patrol. The program involves residents armed with cellular phones, State Patrol air crews, troopers and communication officers, the State Patrol says.

"We believe that DART will improve the apprehension rate of drunk drivers reported by concerned citizens via cell phones," Capt. Mark Couey with the Special Operations Division said.



CHAPTER 4: RADIO PROCEDURES SECTION 00:

Procedure #: 4.00.013-A, Aircraft DUI Enforcement (DART)

Effective Date: July 1, 2008

Supersedes:

See Also: 4.00.13, S, T, & U

Applies to: Communication Division and FOB Personnel in District 1, 2, & 7 and Aviation Section

CALEA:

I. PROCEDURES

- A.** DUI Aerial Response Team (DART) is a first-in-the nation program to use FLIR (Forward Looking Infrared) equipped airplanes to locate, track, and coordinate the apprehension of impaired, reckless, and aggressive drivers. DART is a team effort by citizens armed with cellular telephones, State Patrol aircrews, line-troopers, and State Patrol Communication Officers to effectively combine proactive DUI aerial patrols with a rapid air response to citizen reports of erratically driven vehicles.

Situations, Implementation / Utilization

1. When a State Patrol aircraft is available and conducting Metro (aerial traffic congestion management) or a DUI Aerial Response Team (DART) emphasis in District 1, 2 or 7.
2. And upon receipt of a citizen cellular call to Communications/911 of a possible DUI or erratically driven vehicle with a likelihood of DUI.
3. And the reporting party is in a position to safely observe the vehicle and receive a phone call from the aircrew and is willing to accept a call from the pilot.

B. COMMUNICATIONS

1. Keep the reporting party on the line until verified that the aircraft is working Metro or DART in the area/district and will be responding.
2. Broadcast erratically driven vehicle/possible DUI report on the appropriate "area" frequencies.
3. Inform the State Patrol aircrew via area frequency that the reporting party is on the line.
4. If the aircrew reports they are en route with an ETA, the Communications Officer shall inform the reporting party that a State Patrol aircraft is en route and that a pilot will be contacting them via cell phone if the reporting party is willing to accept a call from the pilot and will be continuing on the same roadway as the suspect.
5. Provide the aircrew with the Reporting Party's name, description of RP's vehicle and RP's cell phone number via MCN or call the aircraft's satellite cellular number (provided to Communications by the aircrew).

Appendices - DART Procedures

6. Advise the aircrew if a ground unit is en route and ETA. The aircrew will report when over the suspect's vehicle, downlink video of the suspect's vehicle to Communications (D1 and D2 only), and monitor/report the suspect's driving.
7. Receive and forward to the ground unit (if needed) updates on the suspect's location until a ground unit arrives.

Inform the reporting party they are not expected to pursue or drive aggressively to keep up with the erratically driven vehicle being reported

C. AVIATION SECTION AIRCREW

1. When advised by Communications of a possible DUI (or erratically driven vehicle) and the reporting party is on the line, the pilot shall inform Communications of their location and ETA.
2. The aircrew will establish communications with the reporting party.
3. Once the aircraft is overhead, the aircrew will request that the reporting party make a lane change and/or activate 4-way hazard lights (or other legal and safe action) to assist the pilot with verifying the location of the suspect's vehicle.
4. Advise Communications when overhead, location, begin/continue down linking video (when possible).
5. Advise the reporting party that the suspect vehicle has been identified and that their assistance is no longer required.
6. Once the vehicle has been identified, confirm that a ground unit is en route and monitor the suspect's driving to develop probable cause for a traffic stop.
7. Continue to track the suspect's vehicle and report observations to Communications (as the situation dictates) until a ground unit arrives.
8. Advise the ground unit of observations. Clearly communicate with the ground unit that you have or have not developed probable cause for a traffic stop. Do not state that the suspect's driving "looks fine" or that the ground unit can disregard (this is the ground unit's decision...not the pilots).
9. For officer safety reasons and when possible, remain overhead (recording video and down linking) until the suspect is in custody (unless told to disregard by a ground unit).
10. *Coordinate (MCN, cell phone, or e-mail) with the line trooper to provide a copy of the video tape in DVD format.*

D. LINE TROOPERS

1. Intercepts the possible DUI (reckless or aggressive driver) and takes appropriate action
 - a. Sign en route if available.
 - b. Communicate with the pilot for updates on suspect's location and observed violations (the pilot will report violations observed such as speed, lane travel, following too-close, etc.).
 - c. The pilot will clearly communicate to the ground unit if they have or have not developed probable cause for a traffic stop. The pilot will not report that "the suspect's driving looks fine" or that the ground unit can disregard (this is their decision, not the pilot's). The pilot will only report observed facts, violations, and if they have developed probable cause for the stop.
2. Communication with the pilot is recorded and overlaid onto the video.

Appendices - DART Procedures

3. The pilot will remain overhead (recording video and down-linking) until the suspect is in custody (unless the ground unit tells the pilot to disregard). For officer safety reasons it is recommend that the line trooper inform the suspect that he/she is being taped from the air.
4. Keep Communications in the loop when coordinating directly with the pilot.
5. Coordinate (MCN, cell phone, or e-mail) with the pilot to obtain a copy of the video tape in DVD format.