

Oakland Police Department
Controlled Equipment Impact Report



Item(s): Robots

Applicable Use Policy: DGO I-26, Remoted Controlled Ground Systems (Robots) and Pole Cameras

Description and Purpose

ICOR Mini Caliber	
Description	An unmanned machine guided and remotely controlled by an officer. The ICOR Mini Caliber is ground operated and has several attachments which can assist in opening doors, delivery of items and or the ability to demobilize vehicle's tires, break glass or bypass locks or destroy packages.
Manufacturer's Product Description	Designed for rapid tactical missions, the robot is simple to operate and quick to deploy for searching rooms, hallways, stairwells and confined spaces. With rubber tracks and articulating front and rear flippers, the Mini-CALIBER effortlessly climbs stairs. It also includes an extendible rotating claw arm that simplifies opening door handles.
How the item works	The robot is controlled by remote controllers. Operators will utilize the remote controller to direct the robot to climb stairs, move in all angles and control the robotic arm.
Expected lifespan	Not listed with manufacturer or website; with care can last several years. Batteries have shorter life spans as they gradually deteriorate due to normal usage
Quantity	1 owned
Purpose and intended uses and/or effects	Understanding that real time intelligence can provide officers safety and tactical advantages, robots are beneficial in providing a ground level perspective of interior, or exterior, locations during barricaded incidents. The usage of robots is in line with the mission of de-escalation and places officers at a safe distance. This allows for the safe resolution of critical incidents and mitigates use of force incidents.

Axon Sigyn Mkl sUGV Recon System	
Description	An unmanned machine guided and remotely controlled by an officer. The Axon Sigyn Mkl is a rugged, lightweight, throwable small uncrewed ground vehicle (sUGV) designed for short-range

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	reconnaissance in obstacle-rich environments and GPS- and cellular-denied areas.
Manufacturer's Product Description	The Axon Sigyn Mkl is a rugged, lightweight and throwable small uncrewed ground vehicle (sUGV) purpose-built to collect and transmit real-time audio/video intelligence. Ideal for short-range reconnaissance missions in obstacle-rich environments and GPS and cellular-denied areas. The Sigyn Mkl includes front and rear wide-angle, low-light cameras, and eight controllable IR LEDs to enhance the safety and success of tactical missions.
How the item works	The Sigyn Mkl is controlled via the Sky-Hero GCS MkII tactical handheld controller using AES-256 encrypted communications. Operators direct the sUGV to drive, turn in place, or right itself if overturned (when no payloads are attached). The unit transmits real-time audio and video to the controller or a paired tactical wearable monitor. The platform supports assisted drive modes via embedded inertial motion sensors and can be hand-thrown into spaces to gather intelligence.
Expected lifespan	Not listed with manufacturer; with proper care can last several years. Quick-swap batteries are replaceable in under 30 seconds and have shorter life spans as they gradually deteriorate due to normal usage.
Quantity	0 owned
Purpose and intended uses and/or effects	Understanding that real time intelligence can provide officers safety and tactical advantages, robots are beneficial in providing a ground level perspective of interior, or exterior, locations during barricaded incidents. The usage of robots is in line with the mission of de-escalation and places officers at a safe distance. This allows for the safe resolution of critical incidents and mitigates use of force incidents. The Sigyn Mkl is specifically suited for short-range reconnaissance, including throwable deployment into rooms, stairwells, or other confined spaces where it would be unsafe to send personnel. Its dual day/night cameras, IR illumination, and audio capability provide officers with real-time situational awareness prior to physical entry.

Axon Narfi Mkl Pole Camera Head	
Description	A lightweight wireless tactical pole camera head that can be mounted on an extendable pole up to approximately 9 ft 8 in (3 m), or detached and clamped to gear or affixed to a wall in sentry mode.

Manufacturer's Product Description	The Axon Narfi MkI wireless tactical pole camera extends tactical inspection with its extreme low-light sensitivity and IR mode for night vision. Designed for both day and night operations, this modular video surveillance system gives tactical operators an additional powerful tool for covert investigations and enables quick detection of threats. Audiovisual feeds from the Narfi MkI can be streamed wirelessly from Sky-Hero's GCS MkII and deployed tactical wearable screen.
How the item works	The Narfi MkI is operated by an officer who extends or retracts the mounting pole to position the camera. The camera transmits live audio and video wirelessly to the GCS MkII handheld controller or to the Sky-Hero tactical wearable monitor using AES-256 encrypted, FPGA-scrambled transmission. The unit operates in Wi-Fi and 4G/5G-denied areas. Dimmable IR LEDs provide a low-light/no-light viewing capability, and the camera head supports full rotation regardless of mounting orientation.
Expected lifespan	Not listed with manufacturer; with proper care can last several years. Batteries are replaceable in under 30 seconds and have shorter life spans as they gradually deteriorate due to normal usage.
Quantity	0 owned
Purpose and intended uses and/or effects	Understanding that real time intelligence can provide officers safety and tactical advantages, pole cameras are beneficial in providing a wireless video live feed to officers at a safe location. The usage of cameras is in line with the mission of de-escalation and places officers at a safe distance. This allows for the safe resolution of critical incidents and mitigates use of force incidents. The Narfi MkI's wireless operation, low-light sensitivity, and modular mounting options allow officers to inspect rooms, attics, vehicles, and other confined spaces from a position of cover during high-risk incidents.

Fiscal Costs

Initial Costs

☒ The Oakland Police Department (OPD) currently owns/possesses/uses the equipment.
 Initial costs (if known) to obtain the equipment were:

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Initial costs of the items were approximately:

Equipment	Per-unit cost	Total cost
ICOR Mini Caliber	~\$119,000	~\$119,000

☒ OPD proposes to obtain the equipment. Initial costs are anticipated to be:

Equipment	Per-unit cost	Total cost
ICOR Mini Caliber IP Mesh Radio	~\$99,994	~\$99,994
Axon Sigyn Mkl sUGV Recon System (2x)	~\$8,395*	~\$16,700
Axon Narfi Mkl Pole Camera Head (2x)	~\$2,850*	~\$5,700
Total Cost		~\$122,394

*Cost does not include GCS (Ground Control Station; Remote control). Since the GCS cost is reflected in the UAV Impact report equipment costs. The GCS can be used to control all three AXON products.

Estimated or anticipated costs for each proposed use

Robots are stored in locked and secured facility, and or vehicle, at the Oakland Police Department. The Electronic Services Unit (ESU) members have access to robots and will respond to an incident with the equipment when requested by an Incident Commander. ESU members may be on duty during incidents requiring the Robot(s) or pole camera(s). If they are, they may deploy as patrol officers, or as their regular duty assignment, and utilize any one of the devices. For a tactical team call-out, other ESU members will respond even if they are off-duty, resulting in overtime expenditures. The amount of the expenditure is based on the time the incident takes to resolve. Over time deployments can be tracked utilizing an i-code through fiscal.

Currently, OPD ESU has a staffing of 1 Lieutenant, 2 Sergeants and 22 Officers. OPD ESU has deployed UAV's, robots and/or pole cameras a total of 130 times in 2025. OPD ESU members are not selected to the team based on their assignment, but rather by their ranking during the Order of Merit List (OML) selection process. Based on the staffing levels and assignments in 2025, OPD had full coverage throughout the week except for Saturday, Sunday, and Monday nights between 2am-6am. There is a watch change (Patrol Shift Change) every January where officers select their patrol assignments based on seniority. This minor shortfall on coverage may change next year due to the watch change.

It is also the goal of OPD ESU to expand our team to thirty (32) Officers by 2027. This will assist with coverage and workload.

Unlike the OPD's UAS Program where it is required to have a Visual Observer (VO) and recommended to have a third officer as cover, operating a robot does not require a VO. However, it is highly recommended to have an additional officer to assist the robot operator and to act as cover when feasible.

Estimated or anticipated costs of potential adverse impacts

Potential adverse effects are myriad, and there is no way of anticipating every possible adverse impact. Additionally, even some known possible adverse effects may be so remote that they were not assessed for the purposes of this report. Finally, costs of even likely adverse effects may vary wildly based on other circumstances which are difficult to predict and can vary from incident to incident. Keeping this in mind, some potential adverse effects and their possible costs are:

Deliberate misuse might cause the Department to be exposed to liability, which could include monetary judgments against the City.

Unintentional misuse might cause the Department to be exposed to liability, which could include monetary judgments against the City.

Failures of the equipment might cause the Department to have to purchase additional items, at a cost per item as indicated.

Estimated or anticipated ongoing costs

Costs for operation include training, personnel, maintenance and upgrade costs.

Training and personnel costs – Currently, ESU has mandatory training twice a month. This training consists of two 10-hour days and typically occurs at the OPD or any other nearby facility or location. There has not been any rental fees or associated costs to locations of training currently. Some training may either require the ESU member attending to be on overtime, or for overtime to backfill that respective ESU members position while they are at training. If an ESU member elects to attend a POST certified training or outside training course there could be associated costs. Unknown yearly costs.

Storage costs – Robots are housed at secured OPD facilities and vehicles and there are no associated costs.

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Maintenance and upgrade costs – Currently, there is no known life span for a robot. With proper care the life expectancy will be longer. However, normal wear and tear can take place and will require replacement of parts. Depending on the part, the cost per item can range from fractions of a dollar to several hundred dollars.

Several prior costs for replacement, maintenance and repairs of OPD robots are listed below:

Date	Equipment	Summary of repair / maintenance and or replacement	Total Cost
July 2022	ICORE	MINI Gearbox Assembly 1,382.81 US\$1,382.81 EA 2 MINI Flipper Arm 700MM 99.93 US\$199.86 EA 2 MINI Flipper Arm 730MM 117.15 US\$234.30 EA 2 24V DC Battery Pack - Mini Spare/Replacement 24V DC Battery Pack for Mini-CALIBER"" Robot Includes: 2x 12.8V / 9.6 AH LiFeP04 Replacement battery for use with the Mini- CALIBER"" Robot (note: The Mini-CALIBER"" uses 2 LiFeP04 batteries for 24V operation 655.00 US\$1,310.00 EA 2 CCU Battery - Mini Spare/Replacement 11.1V / 7.8Ah Li-Ion for use with the	~\$4,427

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		Mini-CALIBER''' CCU 165.00 US\$330.00	
February 2022	AVATAR	3 Batteries. Batteries outdated/Not charging. Replacement.	~\$1,433
August 2021	AVATAR	Battery Handle Broken, Touch Screen Controller not functioning, Camera Fan replacement, Robot Antenna broken	~\$1,272
August 2021	AVATAR	Battery Handle Broken, Touch Screen not functioning, PTZ Molded Camera Housing, Radio Card, Robot Antenna, Cables,	~\$4,328

The ICOR Mini Caliber was purchased in 2019. The AVATAR was purchased prior to 2012, thus the outdated technology and the frequent repairs. The ICOR Mini Caliber is the newest robot in our Fleet and the one which is more frequently used.

Impacts

Reasonably anticipated impacts

Deliberate misuse.

Though unlikely, it is possible that Robots may be deliberately misused by employees. Some of the ways that the Department attempts to prevent deliberate misuse is through background checks of prospective employees, supervision and training, strict policy guidelines, robust reporting and accountability practices, and discipline for deliberate misconduct up to and including termination. Suspected criminal misuse of equipment may also be forwarded to the District Attorney's office or other appropriate prosecuting agency for charging consideration.

Unintentional misuse.

Unintentional misuse of Robots may come in many forms, from unfamiliarity or lack of training to the encountering of a scenario that was not anticipated in training or policy. The Department attempts to prevent unintentional misuse through thorough training, clear policy prescriptions, and robust review processes such as force reports, force review boards, and pursuit review boards.

Perception of militarization or exacerbation of a police/community divide.

While it is not the intent of the Department that this occur, the Department does recognize the possibility that its use of Robots and Pole Cameras may lead to a perception of militarization of the Department, or an exacerbation of any existing divides between the Department and the community it serves and is a part of. The Department attempts to overcome challenges such as this by taking full advantage of community forums required by policy and law (see for instance the mandated community engagement meeting in DGO K-07 and CA Government Code § 7072(b)), by completing full and robust reports such as this one, and by collaborating with the Police Commission in the creation of use policies and procedural safeguards surrounding this equipment.

Impact on persons and property.

The attachments on the robots, such as the tire puncture and window punch are available for demobilizing vehicles or shattering a window. Anytime these attachments are deployed in the field, there exists the possibility that the attachment may cause minor to serious injury to a person.

There is also the possibility of property damage and unintended property damage when the tire puncture, window punch are deployed. When the tire puncture and/or window puncture are deployed on property this does not constitute a use of force. However, there is an inherent possibility an injury can be caused when deploying such items when a person is nearby. This possibility exists and is remedied by training; ESU operators train bi-monthly and only ESU operators are allowed to prepare and deploy robots in the field.

The usage of the tire puncture will demobilize a vehicle and the usage of the window punch will shatter glass. There are also other external costs associated. The owner of said vehicle or property can request reimbursement for costs through the City Attorney's Office for property damages. Depending on the circumstances the City may reimburse an individual for damage to the property caused by the City. The process for obtaining reimbursement for property damage can be found on the Oakland City Attorney's website. Officers should also be mindful not to leave a demobilized vehicle in the field if it violates a parking zone or leave a vehicle or residence unsecured when utilizing the glass punch.

Several of our unhoused community also sleep in their vehicles due to multiple reasons. The usage of such items can also cause a hardship on these individuals.

Additional Analysis: Fleet Expansion and Upgrade Impact

The Oakland Police Department (OPD) proposes to upgrade and expand its Remote Controlled Ground Systems and Pole Camera program through the addition of an updated

ICOR Mini Caliber (IP Mesh communications instead of digital), the acquisition of the Axon Sigyn Mkl sUGV, and the acquisition of the Axon Narfi Mkl Pole Camera Head. The Sigyn Mkl is intended to replace the aging Recon Scout XT, and the Narfi Mkl is intended to replace the aging Tactical Electronics CORE Pole Camera System.

This proposed expansion is not expected to materially change the Department's privacy impact, surveillance authority, or data collection practices. The platforms under consideration provide incremental improvements to existing capabilities, such as enhanced low-light imaging, encrypted wireless transmission, improved durability, and reduced setup time, without introducing new categories of surveillance technology, biometric analysis, or persistent monitoring. All robot and pole camera deployments will continue to be governed by OPD policy (DGO I-26).

Impact of ICOR Mini Caliber Upgrade

The ICOR Mini CALIBER operating with an IP mesh communications system would serve as an evolution of OPD's existing ground robot (ICOR Mini Caliber using a digitally controlled platforms). The upgraded system leverages Internet Protocol-based networking and deployable mesh repeater nodes to maintain reliable connectivity in complex environments, including structures, subterranean spaces, and other areas where direct radio communication is limited. A mesh repeater node extends operational range by receiving and retransmitting signals across the Internet Protocol network, allowing the robot and operator to maintain connectivity in environments where direct communication would otherwise be obstructed or degraded; it does not collect, store, or analyze surveillance data, perform facial recognition, or process any personally identifiable information.

The IP mesh upgrade does not expand OPD's surveillance scope or authority. Rather, it improves the reliability and range of existing robotic operations by reducing signal loss and the need for repeated repositioning of personnel and equipment. The system continues to operate under the same departmental policies, authorization requirements, and data-handling protocols governing current robotic platforms, ensuring that any collected video or sensor data remains subject to existing oversight, retention, and use limitations.

Impact of Axon Sigyn Mkl sUGV

The Sigyn Mkl sUGV is intended to replace the aging Recon Scout XT throwable reconnaissance robot currently in OPD's inventory. The Sigyn Mkl provides comparable throwable, short-range reconnaissance capability with incremental improvements in durability, dual day/night camera coverage, encrypted wireless transmission, and operator workflow. Like the platform it replaces, the Sigyn Mkl is intended for use during high-risk incidents such as barricaded suspects, hostage situations, high-risk warrant service, and

other tactical operations where it is unsafe to send personnel into a space without first gathering visual or audio intelligence.

The Sigyn Mkl does not expand OPD's surveillance scope or authority. It is functionally equivalent in mission profile to the Recon Scout XT and is governed by the same departmental policies, deployment authorizations, and data-handling requirements that apply to OPD's existing ground robots. The platform does not perform facial recognition, biometric analysis, or persistent surveillance, and audio/video data collected during deployments remains subject to existing oversight and retention rules.

Impact Axon Narfi Mkl Pole Camera Head

The Narfi Mkl Pole Camera Head is intended to replace the Tactical Electronics CORE Pole Camera System. The Narfi Mkl provides comparable wireless tactical pole camera capability with incremental improvements in low-light sensitivity, IR illumination, encrypted transmission, and modular mounting options. Like the platform it replaces, the Narfi Mkl is intended for use during high-risk incidents to provide officers with visual and audio intelligence from a position of cover, including inspection of rooms, attics, vehicles, and other confined spaces.

The Narfi Mkl does not expand OPD's surveillance scope or authority. It is functionally equivalent in mission profile to the Tactical Electronics CORE Pole Camera System and is governed by the same departmental policies, deployment authorizations, and data-handling requirements that apply to OPD's existing pole cameras. The platform does not perform facial recognition, biometric analysis, or persistent surveillance, and audio/video data collected during deployments remains subject to existing oversight and retention rules.

Autonomy, Oversight, and Data Protections

None of the platforms described above operate independently of human direction or control. Any onboard assisted-drive or position-hold features are limited to navigational stability and operator workload reduction. These systems do not perform facial recognition, biometric analysis, or predictive surveillance and do not collect personal data beyond what is necessary for legitimate public safety operations. All wireless data links use AES-256 encryption. Per manufacturer documentation, logs and videos are not stored on Axon devices; audio/video is streamed to the connected controller or paired application (Such as Axon Respond) for viewing and retention. Audio/video data collected by these platforms is retained, reviewed, and disposed of in accordance with OPD policy.

Overall Impact

Overall, the proposed upgrades and replacements enhance officer safety, improve operational reliability, and increase mission flexibility across a range of public safety

scenarios. They do so without expanding surveillance authority, altering OPD's oversight framework, or changing the fundamental mission or character of the Department's robot and pole camera program.

Mitigations

Use of force and de-escalation policy – [DGO K-03](#)

Controlled and military equipment frequently takes the form of a force option, or else is often used during high risk situations where force may be used. OPD, in concert with the Police Commission, created a state-of-the-art use of force policy that centers the Department's mission, purpose, and core principles, provides clear guidance that force is only allowed when reasonable, necessary, and proportional, and makes clear the consequences of unreasonable force. Additionally, OPD's use of force policy incorporates a robust de-escalation policy (Section C), which mandates that officers use de-escalation tactics and techniques in order to reduce the need for force when safe and feasible.

The entirety of this policy – which encapsulates OPD's values surrounding force and commitment to de-escalation – is a clear general procedural mitigation to the possible adverse impacts of the use of this equipment.

Force reporting and review policy and practice – [DGOs K-04 and K-04.1](#)

Though the Department expects that every use of this equipment will be within the boundaries of policy and law, the Department also has clear procedures regarding force reporting and review in place. DGO K-04 and its attendant special orders require that force by officers – including force where controlled equipment was used – be properly reported and reviewed, with the level of review commensurate to the severity of the force incident. Additionally, for severe uses of force or where a use of force had severe outcomes, the Department utilizes Force Review Boards, led by top Department command staff and often attended and observed by Community Police Review Agency staff or Police Commission Chairs, to review every part of a force incident. These boards not only determine whether the force was proper, but also have wide latitude to suggest changes in policy, training, or practice, including with controlled equipment.

OPD's force reporting and review policies and practices serve as important procedural mitigations to the possible adverse impacts of the use of this equipment.

Complaint receipt and investigation procedures – [DGO M-03](#)

The use of controlled equipment, as with any use of the police powers, is subject to the rules and laws that govern the Department and its employees. Complaints and allegations that the

Department or its employees have violated these rules or laws are treated with the utmost seriousness, including proper intake at the Internal Affairs Division and investigation by the appropriate investigative individual. Where allegations are found to be substantiated, the Department uses a progressive discipline structure to serve both deterrent and rehabilitative functions. Finally, deliberate misconduct or actions contrary to the Department's values are not tolerated, and can lead to termination of employment.

OPD's complaint receipt and investigation procedures serve as important procedural mitigations to the possible adverse impacts of the use of this equipment.

Community outreach and specific inquiry pathways – DGO K-07

Use of controlled equipment, especially equipment that may have analogues used by militaries or quasi-military federal law enforcement, can drive perceptions of a militarized police force that is pre-disposed to the use of force as opposed to thoughtful, deliberate resolutions to incidents using de-escalation and minimizing the use of force. An important procedural mitigation to this type of perception is regularly communicating with the community served, as a way for information to be shared in both directions. This serves to dispel common misconceptions as well as provide valuable perspective for the Department and its employees. OPD uses community outreach, such as social media, community events, and a specific, annual community forum as required by DGO K-07. Additionally, OPD's overarching controlled equipment policy sets forth processes for inquiries about the equipment.

Equipment-specific use policy and Police Commission oversight – OMC 9.65

While most every law enforcement agency is bound by state law (Government Code § 7070 et. seq.), the very nature of police oversight in Oakland provides one of the most powerful procedural mitigations of potentially adverse impacts. For instance, state law requires that most agencies have their controlled equipment use policies approved by their governing body (e.g., City Council, or Board of Supervisors). In the case of OPD, however, there is an additional layer of oversight in the Police Commission, which must review any controlled equipment use policy prior to it being approved by the City Council. This requirement, set forth in Oakland's municipal code section 9.65, is a procedural mitigation to the possible adverse impacts of the use of this equipment.

Technical safeguards

ICOR Mini Caliber

- Maximum speed of approximately 2 mph, reducing the risk of inadvertent injury or property damage during indoor and close-quarters operations.

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- Constructed with rubber tracks and articulating front and rear flippers, providing stable navigation across stairs, hallways, and confined interior spaces while minimizing collision impact.
- Equipped with onboard lights and cameras to support safe navigation and situational awareness in low-light environments, reducing the likelihood of operator error and unintended contact with persons or property.
- Operates without GPS and without pre-designated or mapped routes; the unit is fully under operator control via remote.
- Extendible rotating claw arm allows controlled manipulation of doors, handles, and objects from a safe standoff distance, reducing the need for officers to enter unsecured spaces.

Axon Sigyn Mkl sUGV

- Maximum speed of approximately 2.57 mph (1.15 m/s), reducing the risk of inadvertent injury or property damage during indoor and close-quarters operations.
- Drop-test rated to 19.6 ft (6 m) and constructed of aviation-grade carbon fiber and reinforced polycarbonate, providing impact resistance during throwable deployments.
- Embedded inertial motion sensors enable assisted drive modes and self-righting (when no payloads are attached), reducing operator workload and recovery time.
- Operates without GPS and without pre-designated or mapped routes; the unit is fully under operator control via remote.
- AES-256 encrypted command-and-control and audio/video links between the sUGV and the GCS MkII controller.

Axon Narfi Mkl Pole Camera Head

- Operates as a passive observation device with no propulsion, eliminating the risk of run-over or collision injury associated with mobile platforms.
- Constructed of aluminum and polycarbonate for durability during repeated tactical deployments.
- Extreme low-light sensitivity (down to 0.0001 Lux) with dimmable IR LEDs, allowing observation in dark interior spaces without the need for additional lighting that could compromise officer position.
- AES-256 encrypted, FPGA-scrambled wireless audio/video transmission to the GCS MkII or tactical wearable monitor; operates in Wi-Fi and 4G/5G-denied areas.

Procedural safeguards

OPD only allows ESU members, who have attended ESU training to operate robots and pole cameras. Officers must submit a letter of intent and go through a selection process prior to being selected to join the OPD ESU. Once selected, Officers must attend bi-monthly training and attend an OPD Basic Robot and Pole Camera Operators course, which is 40 hours. OPD ESU created this program in 2022 to educate new ESU operators with all the robots and pole cameras.

Alternatives

De-escalation and alternative strategies

As mentioned in the Mitigations section, above, OPD officers are mandated to use de-escalation strategies and tactics when safe and feasible. These strategies and tactics, which are predicated on de-escalation best practices around communication, containment, positioning, and time/distance/cover, reflect the Department's commitment to de-escalation over the reliance on force to compel compliance.

However, even during de-escalation strategies and actions, controlled equipment may be used or ready to further a safe outcome to the event for the engaged person, the community, and the officers. Generally, a built-in alternative to the actual use of controlled equipment – especially as a force option – is its use as a tool to provide safety, information, or containment to an incident so that officers can bring the situation under control and hopefully encourage a peaceful outcome. This, in conjunction with other de-escalation or alternative strategies, provides a baseline for OPD officers in the conduct of their duties when using or contemplating the use of this controlled equipment.

Robots and pole cameras have been utilized by OPD tactical team since approximately 2011. In late 2018, the ESU Team Leader incorporated the robots and pole cameras with every day patrol calls. OPD officers in patrol or working field assignments, and having ESU training, would respond to calls to service and deploy robots and pole cameras to assist in critical incidents.

There are many different types of robot and pole camera products. Although several agencies now deploy UAVs, robots and pole cameras have not become obsolete. UAVs cannot open doors as a robot can. UAVs also may not fit in attic or basement entry ways where a pole camera can. Without such technology, the only alternative in most cases would be the need for an officer to place themselves in a location to physically see or hear. Without the real-time intelligence of a robot or pole camera some of the other options officers have are the following;

- Air support (Argus, or outside agency), but depending on time, weather and personnel air support may not be available or delayed.
- OPD K-9's can be utilized, but without first clearing the area the risk of a bite (use of force) is escalated
- Officers can also use community support and contact a resident to have them look out a window which provides an additional vantage point. This has proven successful in the past but depending on circumstances this can place the resident in danger.

Location

Robots and Pole Cameras will typically be used within the areas that OPD has jurisdiction or in areas of the State of California where OPD is specifically conducting operations or investigations. This includes the entirety of the City of Oakland, and may include neighboring jurisdictions or other areas within the State.

Third Party Dependence

☒ This item does not require third-party actors for operation.

☐ This item does require third-part actors for operation:

Track Record

Other agencies utilize robots and pole cameras similar to OPD. As mentioned, even though several agencies have adopted UAV Programs, their robot and pole camera usages have not gone obsolete. Other agencies do not have any robots or pole cameras, while others have severely outdated technology.

Santa Rosa Police Department have Avatar robots and deployed approximately ten (10) times in 2021. The San Francisco Police Department (SFPD) also has Avatar robots and the Andros Mark 5A-1. SFPD hosts a yearly maintenance course on the Andros, where a representative attend and assists in repairs, maintenance, mechanical and troubleshoot issues.

Robots place officers at a place of advantage for safety. The usage of use technology is paramount in the de-escalation of incidents and the mitigation in use of force. Without such technology, the only alternative in most cases would be the need for an officer to place themselves in areas where there is an unknown.

Below is a list of deployments in 2025, 2024, and 2023.

Table 1 below details the deployments of OPD Robots and Pole Cameras in 2025, 2024, and 2023.

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Table 1: 2025, 2024, and 2023 OPD Robot and Pole Cameras Deployments

Incident Type	2025 Numbers	2024 Numbers	2023 Numbers
Mass casualty incidents	0	0	0
Disaster management	0	0	0
Missing or lost persons	0	0	0
Hazardous material releases	0	0	0
Sideshow events	0	0	0
Rescue operations	0	0	0
Training	5	1	9
Barricaded suspects	3	5	15
Hostage situations	0	0	0
Armed suicidal persons	0	0	0
Arrest of armed and/or dangerous persons	3	4	22
Service of high-risk search and arrest warrants	8	5	27
Exigent circumstances	0	0	0
Total	19	15	73
Total Deployed Outside of Training	14	14	64

Robot deployments declined significantly in both 2024 and 2025 compared to prior years. OPD recorded 64 robot and pole camera deployments outside of training in 2023, compared to 14 in both 2024 and 2025. This decline is attributable to damage sustained by the ICOR Mini Caliber, which has been deployed sparingly to preserve remaining service life while the unit awaits funds for repair.

The deployment of robots and pole cameras has assisted OPD in de-escalation and places the emphasis on “time”, “de-escalation” and “real-time intelligence” to bring incidents to a safe resolution. Several success stories on the deployment of robots and pole cameras have been:

- Locating suspects hiding in yards
- Locating suspects hiding in residences.
- Robots have been beneficial in climbing stairs, opening gates/doors and entering residences.
- The speaker and microphone have been successful in directing suspects to exit and surrender.

Below are some notable instances where robots were used:

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On March 28, 2022, OPD Ceasefire Officers followed armed suspects from San Francisco to 901 Filbert St (22-014673 LOP220328000794). The suspects committed an armed robbery in SF and then barricaded themselves inside their apartment complex. After manually breaching the front door, OPD ESU drove the robot into the apartment complex, opened the bedroom door and provided orders/directions to the suspects to exit the residence with their hands in the air. The suspects safely complied.

On September 14, 2022, Patrol units were flagged down regarding an armed unresponsive male inside a vehicle. Patrol units deployed the armored vehicles and formed a Designated Arrest Team (DAT). Numerous announcements were made but the subject was unresponsive. OPD UAV's were deployed and conducted a low-level flight to maintain visual of the subject and the firearm that was on his lap. OPD ESU ICOR was deployed and the robotic arm was used to open the vehicle door and later picked up the firearm from the subject's lap. The DAT moved up and later placed the subject into custody. The firearm was loaded with one round in the chamber RD#22-042263).