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National-Strategic Spheres of Activity

**National Defense
Preparedness against
the Drone Threat
Expanded Follow-up Audit**



National Defense Preparedness against the Drone Threat – Expanded Follow-up Audit

Background

A drone is a remote-controlled unmanned aerial vehicle. The use of drones has been increasing in recent years, due to their low cost and the constant technological improvements enabling longer flying times for longer distances, the improvements to their load capacities and to their navigation capabilities. Drones are used today for commerce and transport, for emergency incidents, for photography, etc. and they have also become a popular hobby. The proliferation of the use of drones offers numerous advantages, but the constant technological improvements to them and the fact that they are readily available also means that they pose emerging threats relating to the security and criminal aspects of their use that could also jeopardize human life and national security.

Considering the growing use of drones and the risks they pose, the Office of the State Comptroller published a special report in November 2017 entitled "National Defense Preparedness against the Drone Threat" (the Previous Report). Subsequent to the publication of the Previous Report, the State Security Cabinet passed Resolution 254/B entitled "Delegating Responsibilities for Handling the Drone Threat." The resolution delineated the areas under the purview of each of the security entities for handling the threat; issued guidelines for formulating work procedures; instructed the Ministry of Defense to lead a process of analyzing and developing a technological response to the threat; and issued guidelines for regulating this issue and for improving the enforcement of aviation laws relating to drone operators. The Ministry of Defense instructed the Air Force's "MAGEN" Administration to analyze and develop a technological response that would help contend with the drone threat.



Key figures

**About 30,000
drones**

existed in Israel correct to July 2020, according to the Civil Aviation Authority's estimate. Most are used for recreation or sport.

**More than
90,000
drone flights**

in the "Gush Dan" region of central Israel in 2019.

**Dozens
of incidents**

involving drones occurred at Israel Prison Service facilities in 2018 and 2019.

**ILS 87
million**

have been invested in a program for developing a technological response to the drone threat, even though this budget had originally been planned at ILS 150 million.


**About
22%**

of the means needed at IDF bases to thwart drone incursions were actually allocated.

**111
drone flights**

occurred in areas defined as "no fly zones" during the Eurovision events in Tel-Aviv in May 2019.

Audit Actions

 From October 2019 to June 2020, the Office of the State Comptroller performed an expanded follow-up audit on the subject of the national defense preparedness against the drone threat. The follow-up audit examined the rectification of deficiencies specified in the Previous Report and the implementation of Resolution 254/B, which was passed as stated, subsequent to the publication of the Previous Report. The expanded audit was performed in the IDF, in the Ministry of Defense, in the Israel Police, in the Israel Security Agency, in the Israel Prison Service, in the Ministry of Public Security, in the Civil Aviation Authority, in the Airports Authority, in the Israel Electric Corporation Ltd. and in the National Security Council. Supplementary examinations were performed in Petroleum and Energy Infrastructures Ltd., in Europe Asia Pipeline Company Ltd. and in another security organization.

The subcommittee of the Knesset State Audit Committee decided not to submit to the Knesset's agenda and not to publish parts of this report for national security reasons, pursuant to section 17 of the State Comptroller Law, 1958 [Consolidated Version]. The withholding of parts of this section does not prevent the understanding of fundamental issues in this audit.



Key findings

Extent of rectification of deficiencies specified in the Previous Report



Regulating the conditions for effective criminal enforcement – The Previous Report stated that the administrative and criminal enforcement means vested in the Civil Aviation Authority by virtue of the Aviation Law, 2011 (the Aviation Law) do not provide an optimal solution for effective enforcement of the Aviation Law on drone operators. The follow-up audit found that, notwithstanding that required in Resolution 254/B, the Civil Aviation Authority and the Israel Police have not regulated the conditions needed for effective criminal enforcement of the laws applying to drone operators.



Delegation of responsibilities for contending with drone threats originating within the State of Israel – The Previous Report reported that neither the IDF nor the Israel Police considered themselves responsible for contending with the threat of drones operating inside Israel. The follow-up audit found that Resolution 254/B, which was passed by the State Security Cabinet in December 2017, delegated responsibilities for handling the threat of drones being operated inside Israel.



Findings of the follow-up audit on rectification of deficiencies specified in the Previous Report

Audit section	Deficiency reported in the Previous Report	Extent of rectification of the deficiency as found during the follow-up audit			
		Not rectified	Slightly rectified	Largely rectified	Fully rectified
No authority is responsible for defending against drone threats originating inside Israel	Up until the date of the audit update in September 2017, the State Security Cabinet had not yet reached a decision about defense against the drone threat, and the national responsibility for contending with the drone threat has not yet been regulated.				
Inadequacies in the regulation of the use of drones	Enforcement of the Aviation Law: The administrative and criminal enforcement authorities vested in the Civil Aviation Authority do not provide an optimal solution for effective enforcement of the Aviation Law on drone operators.				
	Administrative enforcement: Licensing: The authority of the Director of the Civil Aviation Authority to restrict, suspend, revoke or refuse to renew drone operators' licenses is inapplicable to the vast majority of drone operators, since they are flying drones for recreational or sports purposes and are not required to obtain a license.				
	Fine: The sum of the fine that the Civil Aviation Authority may impose on anyone who operates a drone for recreational or sports purposes in violation of the Aviation Law is insignificant, and therefore, is not a deterring factor.				
	Work by Civil Aviation Authority inspectors: The Civil Aviation Authority cannot carry out effective administrative enforcement against drone operators, whose numbers are growing steady, if it only has two inspector positions.				
	Criminal enforcement: On the one hand, the Minister of Public Security has not authorized Civil Aviation Authority inspectors to exercise investigative authorities for the purpose of criminal enforcement of the provisions of the Aviation Law and, on the other hand, the Israel Police does not consider itself responsible for enforcing all provisions of the law, but rather only in relation to "specific incidents."				
	Drone registration: The Aviation Law does not require drones being used for recreational or sports purposes to be registered.				
	The IDF's defense preparedness against drone threats originating outside Israel	The Air Force still does not have a complete defense response against the drone threat. It is true that the IDF is continuing its staff work on defense against the drone threat; however, force-building and force deployment processes in this regard have not yet been defined, approved or budgeted in its multiyear plan.			



Additional findings of the current audit

- 🔴 The Israel Police's defense preparedness against the drone threat** – The Israel Police has not implemented the operating doctrine that it had formulated and has not prepared itself in a way that would enable adequate defense against drone threats in accordance with Resolution 254/B. As a result, it lacks the capabilities needed to contend with drone threats at unscheduled events and its defense preparedness against drone threats at scheduled events is inadequate.
- 🔴 Defense of IDF camps and facilities** – The volume of procurements of Counter Unmanned Aircraft Systems (C-UAs) for defending IDF camps and facilities is at about 22% of the requirement presented by the IDF's Operations Directorate. The vast majority of IDF bases and facilities have no C-UAs. As a result, in the event of a drone threat on an IDF base or facility, there is a concern that the security teams will be unable to provide an optimal operational response.
- 🔴 Delegation and delineation of the responsibilities for handling drone threats** – The Israel Police, the IDF, the Israel Prison Service, the Airports Authority and the Israel Electric Corporation did not complete the delineation of the responsibilities or the drafting of procedures and rules for transferring responsibilities between them.
- 🔴 Consensual joint funding of the development of the technological response** – The State Security Cabinet's Resolution 254/B of December 2017 regarding consensual joint funding of the development of the technological response has not been implemented in its entirety. More than two years later, up until the conclusion of the audit in June 2020, consent has still not been achieved with regard to the funding model. As a result, the project funding for developing the drone threat response, including its contents, has shrunk from ILS 150 million to ILS 87 million. The project has focused on providing a response for the IDF's border defense mission and was incompatible with the needs and budgetary capabilities of the Israel Police, the Israel Security Agency and the Israel Prison Service.
- 🔴 Customizing the technological response for the needs of the security entities** – The project contents that were needed, primarily for the Israel Police, the Israel Security Agency and the Israel Prison Service, were not included as compulsory components of the technological response development project. The national plan for developing the technological response did not provide a defense response against drones to all of the entities and, in fact, the Israel Security Agency and the Israel Police opted to independently procure defense means that did not conform to the recommendations of the "MAGEN" Administration national defense team against the drone threat.
- 🔴 Regulation of drone operation pursuant to Resolution 254/B** – Due to the disagreements between the Air Force and the Civil Aviation Authority, the regulation







process has been delayed and Resolution 254/B has not been implemented. Until the conclusion of the audit in June 2020, the status of the regulation of drone operation remains unchanged: most drones in Israel are unregistered and most drone operators are not required to obtain any flight approval. Therefore, the security risks posed by the use of drones still remain. However, progress began to be made in September 2020 towards resolving the disagreements and advancing the regulation of drone operation.

 **Integration of drones in Israel's air space** – Staff work regarding the integration of unmanned aircraft in air space is being performed in the United States and in Europe. In Israel, specific actions are being taken to integrate drones in the air space, but they have not progressed to the stage of drafting of regulations in this regard. This would provide the foundation for deploying technological infrastructure for identifying and controlling drone traffic in Israel's air space.



Force-building processes at Ben-Gurion International Airport for contending with the drone threat – Force-building processes for defense against drones have been completed at Ben-Gurion International Airport. They currently provide a technological means to address this threat in the medium term.

Key recommendations

-  The various entities should take action to complete their preparations of all force-building aspects of contending with the drone threat, including the drafting of operating doctrines and procedures and the procurement of means. They should regulate their interactions and procedures for transfers of responsibilities between them.
-  The Israel Police should take the actions needed in order to contend with the drone threat during unscheduled events and to complete its preparations for handling this threat during scheduled events – all according to the responsibilities imposed on it in Resolution 254/B, including in relation to the aspects of institutionalizing procedures, force-building and budgeting.
-  The IDF's Operations Directorate should complete the update of its basic documents regulating defense of IDF bases against drone threats, should assess the risks to the various bases posed by this threat, and should prepare an organized force-building plan that takes into account the resources required in this regard.
-  The Ministry of Defense, which was instructed by the State Security Cabinet, should lead an analysis of the technological defense capability against the drone threat; examine ways to resolve the numerous disagreements between the various security



entities; and build an action plan for providing adequate operational means to the various entities, taking into account their budgetary constraints.

- 💡 It is recommended that the Civil Aviation Authority should complete the process of drafting regulations in order to implement the government's directive regarding compulsory drone registration and licensing of drone operators.
- 💡 The State Security Cabinet should continue monitoring the implementation of Resolution 254/B and, insofar as the existing obstacles to implementing it have not been removed, it should also consider initiating another discussion by the State Security Cabinet.
- 💡 It is recommended that the Civil Aviation Authority, in collaboration with the Air Force and the Israel Police, should advance activities to regulate the integration of drones in Israeli air space, similar to the actions taken in the United States and in Europe.

Entities' defense preparedness against the drone threat pursuant to Resolution 254/B

Entities Indicators	Israel Police			IDF bases and facilities	Israel Prison Service	Controlled entities		
	Scheduled event	Unscheduled event	Guidance to guided entities			Israel Airports Authority	Israel Electric Corporation	
						Ben-Gurion Airport	Ramon and Haifa airports	
Drafting the reference threat								
Formulating work procedures								
Delineating responsibilities								
Executing force-building processes								
Procuring defense systems								

Inadequate

Partially executed

Fully executed

Irrelevant



Summary

The constant technological improvement of drones is creating an emerging and changing threat relating to security and criminal aspects of drone use. According to the recommendation issued in the Previous Report, the State Security Cabinet passed Resolution 254/B to regulate the responsibilities for contending with the drone threat. This resolution instructed defense authorities, law enforcement authorities and regulatory authorities to take integrated national action towards contending with the drone threat.

The audit found that the audited entities have still not completed their operational preparations for contending with the drone threat or delineated the responsibilities between them; the audit also found that the development of the technological response to drone threats has been delayed as a result of budgetary constraints and has failed to meet the needs of all security entities; and that the regulation process has not been completed.

The entities should take action to complete their preparations for contending with all aspects of the drone threat. The Office of the State Comptroller recommends that the entities should continue working collaboratively, with intensive information-sharing and mutual learning, particularly as it pertains to the sharing of knowledge and capabilities between entities that operate drones and the entities responsible for defense against the drone threat, so that the national defense preparedness against the drone threat is completed rapidly and optimally.

Notwithstanding the threats posed by the use of drones, their use can also contribute to the development of many aspects of Israel's economy and transportation sector. Regulating the operation of drones in Israel's airspace is vital in order to maximize the benefits that can be reaped from drone use.

All entities should scrutinize the findings of this report and take action to implement its recommendations.