

Tal Inbar, head of the Space and UAV Centre at the Fisher Institute, spoke to Joe Charlaflaff about the UAV industry in Israel and how future conflicts with surrounding enemy states might be affected by unmanned systems use.



Sudden swarms

The Fisher Institute is an industrial think tank staffed by former Israeli Air Force officers, located in Herzliya, Israel. 'At the institute, we are looking around the world to see new trends in methodologies, applications, UAVs and strategies of different air forces in different countries... and we have gathered some ideas which we have at times suggested to the Israeli Air Force.

'We are working closely with both the Israeli Air Force and industries in Israel on various aspects of utilisation of applications and regulations of the UAVs, from the small ones to the big ones,' Inbar said.

Israel was for many years a spearhead of this industry, but in recent times other countries – such as China and the US – have pursued an ever-greater use of UAVs, and the export market is becoming fiercely competitive.

'We have many competitors, including the US. A lot of Chinese UAVs, which are unarmed, are coming to the region through deals with Egypt, Jordan and Saudi Arabia,' he explained.

Many missions traditionally carried out by manned aircraft are now conducted with the use of UAVs. Reconnaissance is a classic example and in many countries drones are performing ground attacks on various targets.

Inbar emphasised that the structure of modern air forces is changing in that the balance is now tipped towards UAVs. 'For the last five years or so, UAVs in the Israeli Air Force have flown [for] more time than manned aircraft in some types of missions and this trend will increase in the future,' he said.

Asked what he sees as the effect in the battlespace of UAVs, Inbar replied: 'It's a challenge because we are going to see

more vehicles in the sky. [It] will be more crowded than today. The UAVs will eventually operate in large formations or even swarms of smaller formations. What we don't see generally today are sorties of one or two manned aircraft and several unmanned aircraft flying in formation, commanded from a manned aircraft.'

However, Inbar predicts that in ten to 15 years there will be a fighter squadron in the air force as described above. Some of the pilots in this mixed squadron will fly from the ground and operate UAVs. 'I believe this will represent a revolution for air force commanders,' he stated.

New tactics

Regarding the potential effects of increased numbers of UAVs in war situations, Inbar said: 'It's hard to say, but you don't need to wait for a war to see the edge of quality. With unmanned vehicles you can take more risks. This is truer in skirmishes as opposed to all-out war.

'If you want to conduct operations far away with a low signature and to minimise the risk of pilots being captured by the enemy, [UAVs are key]. UAVs will be used to conduct more missions using less expensive aircraft. There are missions carried out that are unknown to the general public. For many types of mission, you can use UAVs and in certain cases they are the vehicles of choice,' Inbar added.

He continued by saying that in relation to unmanned activities by Iran, and by Hezbollah in Lebanon: 'We have seen for several years attempts to penetrate Israeli air space.' The first such incident occurred in 2006 during the second Lebanon War. Inbar disclosed that during this conflict, unmanned operations by Hamas, another

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key rival in the region, were shot down using both ground and air-based defences.

He pointed out that future wars will be more challenging due to increased numbers of UAVs along with rockets in the air, which will limit the capability of the air force to counter every single drone.

'One has to take into account that some drones will succeed in penetrating, but the capabilities of drones in the hands of Hamas and Hezbollah are very limited, especially their reconnaissance drones which lack the capability to transmit data back. In order to do that they have to fly over Israel and return.'

Automation situation

Inbar believes that in time there will be a greater emphasis on automation in unmanned systems that will enable such platforms to perform longer-range missions and increase their endurance. He also suggested that the notion of a single platform being tasked with a mission will become obsolete.

'Swarms of UAVs will be the order of the day. The communication between UAVs and the ground will be improved [and] we will see more use of satellite communication. The future of unmanned vehicles is bright, but there is much more to explore to get the qualitative edge.' ■