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## The Israeli Defence Force and the CH-53K Decision



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# The Abraham Accords and Their Impact

September 26, 2020

Recently, I discussed the Abraham accords and their impact with Professor Amatzia Baram. We last met in person at a conference in Bahrain which discussed a number of Middle East issues, and now with Bahrain as one of the signatories to the agreements, we had a chance to get caught up and discussion the importance of this key agreement.

Professor Baram entered Bahrain for the conference on his Israeli passport, a sign of the impending breakthrough.

We started by simply focusing on the question of how important was the agreement?

According to Baram: “I would say that even though we have never fought a war against the either the United Arab Emirates or against Bahrein of course, this is as important as our agreement with Jordan. From a strategic point of view, the convergence among the signatories is a common concern: Iran.

“Earlier, we have had agreements with Turkey which provided us with significant information on a variety of threats to Israel, including Iran. From Turkey we could watch Iraq, Syria and Iran.

“Under Erdogan this is over.

“But in the new strategic situation, working with UAE, in particular, provides a significant opportunity for collaboration on sharing information about Iran and its activities. The agreement also expands partnerships in the region, as the dynamics in the region change.

“The United States is supportive but with the global demands on America, a shift is underway, and both the Gulf Arab states and Israel are looking to expand their partnerships to deal with the threat from Iran.

“Accompanying the agreement is a commitment of the United States to sell F-35s to the UAE. This is a significant one but also affects the U.S. commitment to Israel to maintain a qualitative edge over the Arab nations in the region.

“How will this play out?

“The Iranian attack via drones on Saudi Arabia was a wakeup call to the Gulf Arab states about the need to do more for their own security. This agreement allows the signatories to work together to provide for much such capability as well for regional defense against Iran.

The strategic side is accompanied by an economic side as well, whereby expanded economic relations are clearly feasible. But in some cases, the two will dovetail.

Baram highlighted such a case, namely in terms of maritime trade routes. Recently, the UAE-based maritime company Dubai Ports World signed a deal with Israel Shipyards, Ltd. Reportedly, the two companies will submit a joint bid to purchase the Port of Haifa from the Israeli government.

This is how Baram described the impact of such a deal. “They now are discussing shipping from Dubai, from the Gulf, through the Red sea to Eilat, instead of going through Suez Canal which is quite expensive. They will go to Eilat where there will be a train line that goes all the way to Ashdod or to Haifa, or to both. And this way the Gulf will have another route to the Mediterranean, not through the Suez Canal. It doesn’t mean that they will not use Suez Canal, they will still use it, but it depends on how large the ship is. And so we have another option.

“There is another discussion now between the Emirates and Israel about another line that would go from the Emirates through Saudi Arabia and Jordan to Ashdod and Haifa. This would provide a clear alternative to needing to use the Straits of Hormuz on the way to the Indian ocean.

” Such a strategic rout will reduce the impact of the Iranian threats to close the straits.”

**Question: Where is the Palestine piece in all of this?**

Professor Baram: “It is there but not as the precondition for the signatories to work together. “In the UAE agreement, they urge the Palestinians and Israelis to reach an agreement, which would be reasonable, practical. I think the word is ‘reasonable’ because of Palestinians so far have turned down every reasonable, and I mean really reasonable, agreement the Israelis offered them, mainly because of one reason.

“They could not give up the demand for a ‘right of return.’ And the right of return for five to six million children, grand-children and great grand-children of 1948 refugees is without precedence in the modern world. No Turks will ever return to Greece, and no Greeks will ever return to Turkey. Likewise, no Indians will return to Pakistan and no Pakistanis will ever return to India.

“The 1948 Palestinian Arab refugees and their descendants have since been living in Arab countries and must be absorbed there. Absorbing them in Israel is impossible given its size, so from an Israeli point of view such a demand is outside the boundary of reasonable.

“In addition to Egypt and Jordan, two more Arab states signed peace agreements now with Israel. This may convince the Palestinian Arab public that they no longer have a veto over Arab-Israeli relations, and that their success depends more than before on their pragmatism.”

**Question: It would be difficult to believe that Bahrain would sign a normalization agreement without the Saudi government being willing to see this happen and provide de facto approval.**

**What is your sense of the Saudi factor?**

Professor Baram: “Bahrain has a problem which the Emirates do not have. The ruling elite is essentially Sunni, but the Shi’a represent the majority of the citizenship. Until Ayatollah Khomeini’s rise to power in Tehran this sectarian difference represented no political problem.

“However, the Islamic Republic of Iran targeted Bahrain in its fervent commitment to spread its Islamic revolution. This launched sectarian tensions in the Emirate. Anticipating a Tehran-inspired hostile Shi’i reaction is explaining why their signing of the agreement is more technical, and the language is different.

“Bahrain depends to a large extent on Saudi strategic support. Saudi readiness to participate in this agreement eventually will be a key factor going forward. But Bahrain would not have signed this agreement without tacit Saudi support.”

**Question: How does the new peace agreement change the defense approach in the region?**

**How might new exercises and joint capabilities become part of a powerful deterrence equation for the Gulf Arabs and Israel?**

Professor Baram: “A key threat to Israel are missile strikes from Iran or from Iranian surrogates in Iraq. A common threat for the Gulf Arab states and Israel is the threat of Iran going nuclear. The Obama agreement with Iran from this point of view is viewed as a disaster for both Israel and the Gulf Arab states.

“What this new agreement presages is more regional cooperation which can address Iranian threats.

“You have raised a key point – how will our militaries train together to shape capabilities which can deter Iranian actions? Clearly one aspect here is significant collaboration among our air forces, which could lay a solid foundation for going forward. However, any joint Emirates-Israeli air-force exercises will require some Saudi cooperation, and we are not yet there.”

I concluded with this takeaway from the conversation:

We need to build deterrence in depth that can operate across the spectrum of operations to deal in practical ways with Iranian actions. The agreements between Israel, the UAE and Bahrain provides an opening to shaping new ways to do this. When combined with evolving approaches of the United States military to build out their air-maritime forces in innovative ways, the United States can provide an over-the-top capability to further augment what the regional working relationships have delivered in terms of real deterrent capability.

This is a very important opening to next phase of history in the Middle east. The question is, are we up to actually managing this in a sensible way?

## **Israeli Defense After the Abraham Accords: Part 1**

October 5, 2020

The Abraham accords have provided a path around the Palestinian veto of Israeli-Gulf Arab state normalization. The accords signify a new way ahead. And that way ahead has been paved by the expanded Iranian threat, and the ability of the Iranian state to operate from a variety of locations in the region: Syria, Iraq, the asymmetric forces operating in crisis spots in the region, and Iran itself.

One aspect is clearly the missile threat from Iran itself. With the accords, and the continuing modernization of the Gulf Arab air forces, the Israeli Air Force and defense force can work more directly with Gulf Arab Air Forces in shaping a comprehensive air defense and strike force against Iranian based missiles. This will also require changing C2 and early warning capabilities as well.

Another aspect is the asymmetric threat. To deal with this, enhanced intelligence sharing will unfold, which will provide Israel with an alternative to their historical working relationship with Turkey.

In addition, the Israelis and the UAE will need to focus as well on ways to move insertion forces directly against asymmetric threats when appropriate and desirable. This is the domain of Special Forces integrated with air and maritime power.

Specialized airlift and relevant force packages able to operate with the range and speed necessary will become a key necessity. This may lead to the acquisition of new tiltrotor or assault helicopters as part of an Israeli modernization package as well as reshaping UAE forces as well.

A third aspect is shaping a counterbalance to the Russian reach into the Mediterranean region. With Turkey and Russia expanding their reach in the Western Mediterranean, the two states now face a new regional redesign in the Eastern Mediterranean. The unknown factor in all of this of course is the Kingdom of Saudi Arabia and how it will shape its way ahead with the new regional dynamics being unleashed by the Abraham accords.

The maritime side of cooperation will, in turn, shape and define a major security challenge. How to defend the new sea-land route? This will require intelligence sharing, integrated security forces, and an ability to move appropriate force to any popup threats the Iranians or other adversaries wish to generate against the new routing as well.

In other words, the Accords put in motion new ways to shape deterrence in depth that can operate across the spectrum of operations to deal in practical ways with Iranian actions.

How will this impact on Israeli defense, and Israeli-UAE joint military and security working relationships?

And how best to deal with the diverse Iranian attack points on the Gulf Arab states and Israel?

The Iranians are innovative in generating new threats as was seen in the drone attack on Saudi Arabia.

The new working relationships in defense and security between Israel and the Gulf Arab states will clearly need to “out innovate” the Iran threat masters.

How best to do so?

## **Israeli Defense After the Abraham Accords: Part 2**

October 25, 2020

The geopolitical shift enabled by the Abraham accords is a significant one. How it will play out in practice is an open question.

What is clearly to be expected is that the Iranians will spend the next few months trying to place military and political IEDs into the process of a new geopolitical pact whereby Israel works differently with the GCC states and individual GCC states shape new operational military relations with the state of Israel as well.

The accords have opened the way to reworking the maritime trade routes. Earlier this week, further agreements are facilitating the change.

According to an article by Richard Spencer, in *The Times* of London:

“The United Arab Emirates has signed a deal to send oil directly to the Mediterranean through an Israeli pipeline, the biggest result yet from the normalisation of relations between the countries.

“Oil from the UAE “and other eastern markets” will be shipped by tanker to the Israeli Red Sea terminal at Eilat, from where it will be sent along an existing 158-mile pipeline to the Mediterranean port of Ashkelon.

“The deal keeps open the possibility of a future pipeline link from Israel to the Gulf across Saudi Arabia, however, should Riyadh normalise trade relations with it. The pipeline is operated by an Israeli state-owned company, while shipments and storage will be organised through a joint venture between Israeli companies and National Holding, a UAE state business.”<sup>1</sup>

The consequences can be broad of such agreements.

As Spencer went on to note:

“The main loser is likely to be Egypt — an irony, since it was the first Arab state to recognise Israel and remains a key ally of both the United States and the UAE in the region.

“Its own pipeline and the Suez Canal are the main routes for oil to be transferred from the Gulf to the Mediterranean at present. The canal, however, is not large enough to handle the latest supertankers, which can, however, dock in both Eilat and Ashkelon.”<sup>2</sup>

Given Russian energy interests, this alternative path for Middle Eastern oil to the European markets will hardly be welcome, and certainly not by Iran whose leverage for being able to threaten transshipments through the Gulf of Hormuz will be significantly reduced. Putin has been a judo master of pipeline politics to Europe, but this puts a wrench in the approach which he has been able to shape.

What emerges from this dynamic is a political-economic and security cooperation opportunity which clearly will require close intelligence cooperation among the stakeholders. The new level of intelligence cooperation will undoubtedly be part of a general reworking to shape the kind of intelligence needed to support broader political-military efforts.

Notably, such efforts are crucial in two key areas. The first is clearly the question of how to deal with the Iranian missiles and whatever payload they put on them. What can follow from the accords is shaping a much more integrated offensive-defensive enterprise, one driven in part by an F-35 enabled force. There is much progress in NATO Europe on addressing engagement with Russian missiles via offensive and defensive capabilities which being integrated to shape combat options.

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<sup>1</sup> Richard Spencer, “Israeli and United Arab Emirates Strike Oil Pipeline Deal,” *The Times* (October 22, 2020), <https://www.thetimes.co.uk/article/israel-and-united-arab-emirates-strike-oil-pipeline-deal-kxqfdwm3t>.

<sup>2</sup> Richard Spencer, “Israeli and United Arab Emirates Strike Oil Pipeline Deal.”

Clearly, Israel and the GCC states are leveraging this learning and will provide learning of their own as well. As two analysts put it:

“Another potential security opportunity is a gradual move toward more comprehensive integrated missile defense architectures, integrating early warning assets, information sharing protocols, and missile defense systems – with appropriate firewalls to maintain each nation’s national security.

“Integrated missile defense is among the most complex of military activities, and success in this endeavor would require participation from two US combatant commands (EUCOM and CENTCOM), as well as the accord signatories.”<sup>3</sup>

But there is a third area affected by the accords as well. As argued above, the Iranians will do what they can to derail any positive process which can be crafted after the accords. Most likely, this means that they will leverage their various presence points in the region to go after GCC and Israeli interests. Individual GCC states and the Israelis will need to sort through specific dynamics within and across countries in the region, to find ways to help one another support those common interests which can be forged to deal with Iran.

This means that specific crisis will occur for which Israeli or GCC states will act alone or operate as the supported or supporting political military force against specific and discrete Iranian actions. This means as well on the Israeli side that force structure will need to develop or be enhanced which would allow for rapid insertion and withdrawal of a combat force either to be the supported or supporting force up against a specific Iranian provocation.

For Israel, this will highlight the need to develop a more capable insertion force involving ground forces at greater distance than has been the regular practice of the IDF. With the USMC, the package of Ospreys, F-35 and now the CH-53Ks is designed precisely shape such a force. The Israelis might well consider such an integrated force package which can react, respond, deliver decisive response and leave rapidly.

But one thing is clear. The Abraham Accords are not the end but the beginning of a new phase of geopolitical maneuver to deal with the Iranian challenge. And this maneuver will have a significant impact on the way ahead for the IDF.

## **Israeli Defense After the Abraham Accords: Part 3**

November 8, 2020

With the new Abraham accords, the collaborative opportunities for the IDF with GCC partners are clearly expanded. At the same time, the range of security control necessary to protect the shift in the transit of energy supplies is significant and requires new capabilities and new approaches to operating the IDF to do so.

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<sup>3</sup> John W. Miller and Charles Perkins, “How the Abraham Accords Will Change Security Cooperation in the Arabian Gulf,” *The Defense Post* (October 20, 2020), <https://www.thedefensepost.com/2020/10/20/abraham-accords-security/>.



Next month, the first of four new German-built ships for Israel will arrive for final outfitting prior to become operational. In 2015, Israel ordered the new corvettes with the intention of expanding its sea control to provide for protection for the expanding natural gas pipelines to support the Israeli economy.

The Abraham Accords are expanding the transit routes crucial now both to the GCC and Israel and will undoubtedly entail joint security and defense operations to provide for protection of the sea areas significant for maritime and energy transit. In other words, the new ships were ordered before the Abraham Accords, but those agreements reinforce the wisdom of doing so. They will become part of enhancing IDF capabilities and will contribute to reshaping doctrine to develop maneuver forces in support of Israeli interests in the region.

As Tamar Beeri noted in a November 4, 2020 article in *The Jerusalem Post*:

“As the Exclusive Economic Zone (EEZ) spans over a far larger space than the land of Israel as a whole, the Sa’ar 6 allows the Navy to dominate a larger space and provide a protective shield around Israel’s borders. In addition, the ship is capable of staying out at sea for an extended period of time in order to provide a more extensive period of protection in the more vulnerable regions of the EEZ.”<sup>4</sup>

The ships are fitted with Israeli and U.S. combat systems. According to Rear Admiral Eyal Harel, head of IDF naval operations: “It’s a larger vessel with advanced and hi-tech systems along with long-range missiles, air-to-air, surface, and sea-to-air missiles. The radar is bigger and more advanced than what is on the Sa’ar 5. With a further range, you can operate the Sa’ar 6 in open seas and in rough sea conditions.”<sup>5</sup>

The ships will operate as flagships for the Israeli Navy and will be key platforms in protecting the EEZ and the gas platforms in the Mediterranean Sea. The ship is designed to plug and play with other IDF systems, which would allow the ship to fit into an integratable force for air-sea and potential support to land insertion forces as well.

The integratable nature of the Sa’ar 6 was emphasized in a recent briefing by a senior IDF official. “The Sa’ar 6 has an enormous radar so it can be a standalone unit. Abilities and probability of protection increases, as it is connected to Iron Dome, David’s Sling and other air defense. If it detects threats, it can transfer data to land networks to engage targets.”<sup>6</sup>

In other words, the ships will provide a good compliment to the IDF as the IDF considers new capabilities, for targeted insertion force operations. Such a force could be built in part by adding a new lift platform such as the such as the CH-53K to an extended range insertion force.

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<sup>4</sup> Tamar Beeri, “Israel’s Navy to Receive First German-made Sa’ar 6 Ship,” *The Jerusalem Post* (November 5, 2020), <https://www.jpost.com/breaking-news/ids-navy-receives-new-german-saar-6-ship-648135>.

<sup>5</sup> As quoted in Tamar Beeri, “Israel’s Navy to Receive First German-made Sa’ar 6 Ship.”

<sup>6</sup> Seth J. Frantzman, “Israel shifts naval doctrine with new Sa’ar 6 warships,” *Defense News* (November 5, 2020), <https://www.defensenews.com/naval/2020/11/05/israel-shifts-naval-doctrine-with-new-saar-6-warships/>.

# Israel Selects CH-53K for Its New Heavy Lift Helicopter: Why?

02/27/2021

Israel has chosen the Sikorsky CH-53K King Stallion over Boeing's CH-47F Chinook as a replacement for its aging CH-53D "Yas'ur" heavy-lift helicopter, the country's Defense Ministry announced Feb. 25, 2021.

Defense Minister Benny Gantz selected the single-main-rotor 53K over the tandem rotor Chinook based on recommendations from Israel Defense Forces (IDF) Chief of the General Staff Lt. Gen. Aviv Kohavi and Defense Ministry Director General Maj. Gen. Amir Eshel.

The Israeli Air Force (IAF) said the 53K was chosen after "extensive administrative work, during which IAF personnel examined various flight platforms and evaluated aspects such as technology, engineering, maintenance, and more."

In a statement, the ministry said: "The decision was made following a professional assessment that included test flights in all the proposed aircraft, as well as a thorough examination of the various alternatives in terms of engineering, technology, maintenance and other considerations.

"All details, including the number of helicopters requested, will be brought to the approval of the Ministerial Committee for Procurement as soon as possible."

According to The Times of Israel:

"The Defense Ministry had been wavering between the Boeing CH-47 Chinook and Sikorsky CH-53K King Stallion heavy transport helicopters to replace its 50-year-old CH-53 helicopters, whose Israeli version is named Yassur.

"When Gantz came into his post last year, he ordered the military to reconsider purchasing the V-22 tilt-rotor aircraft, which can function as both an airplane and a helicopter, giving the military — particularly special forces — greater flexibility.

"That sent the ministry back to the drawing board and significantly extended the selection process."

## As to the why?

Defense Minister Benny Gantz said that the "decision to buy new transport helicopters after several decades is a significant step in building the IDF's power, and is vital for carrying out a wide range of routine and combat operational missions

"The new helicopter is adapted to our operational needs and to the challenges of the changing battlefield."

The reason we created a defense decision section on our website is straightforward: procurement decisions are not simple side by side comparison of the competitors in and of themselves.

They are tactical and strategic choices which means context, and the evolving concepts of operations of the forces which will use the new platform are key drivers of choice.

This is clearly the choice for the Israelis.

## **Israel and the CH-53K: The Reserves and Training Dimension for Force Generation**

03/31/2021

An underlying factor in the IDF's calculations has been the key role which reserves play in force mobilization and how the new aircraft's relative ease of flight and the capabilities of the training simulators to both learn and refresh are key considerations for force generation and mobilization.

It is well known that Israel is a mobilization nation. It is also well known that reserves are a key part of the Israel capability to defend itself.

The challenge with using reserves is keeping them at the skill levels needed when operations demand their contribution. With newer systems, in many cases, come enhanced usability so to speak. The CH-53K is a whole new baseline for heavy lift, one which uses digital systems to make it much easier to operate. Unlike legacy mechanical systems, the CH-53K is a fly by wire system with significant inputs from digital systems onboard to operate the aircraft.

This ease of use by front line combat operators becomes a keyway to ensure that performance of reserves is at a higher standard than if simply based on the pilot's own unassisted operating skills. The machine capability built into the aircraft provides for a higher standard of performance than a human pilot unaided can achieve. For the front-line user, this allows for an expanded operational envelope; for the reservist called up to duty, it may mean survival in operating an aircraft with significant crew or cargo onboard.

Put in simple terms, the fly by wire system allows the pilot to operate the aircraft in difficult environments by using systems like the automatic hover mode which operates the aircraft at levels that in a legacy system would be demanding for even the most experienced pilot. With the K, this is delivered by the machine.

In various interviews with CH-53K operators, the importance of fly by wire to expanding the operational situation for the pilot-co-pilot team has been highlighted. But what this system allows is for those familiar to the aircraft but in a reserve capability where flying it is not a frequent experience to also operate the aircraft with a higher standard of effectiveness and safety

Let me highlight some of the comments about the fly-by wire system on the CH-53K and its importance which I have written about earlier.

According to Colonel Jack Perrin Program Manager, PMA-261 H53 Heavy Lift Helicopters, US Naval Air Systems Command at Pax River Naval Air Station.

“I would tell you the 53K is what I would call the 5th generation or the leading generation of heavy lift helicopters for all helicopters. It is fly by wire it has the power and speed that you really need in a helicopter and really executes its mission extremely well.” He put a key point very well which pilots of the CH-53K have emphasized: “The pilots can put the aircraft where they need to in the combat environment.” This is about the ability to work in degraded environments and with the fly by wire and other digital systems are able to put that aircraft exactly where the optimal location in the combat environment.”

According to an August 21, 2020 release by Naval Air Station Patuxent River, the CH-53K sea trials went extremely well in June 2020, and the handling qualities of the aircraft was a key reason this was so.

*Foxton praised the CH-53K’s performance, noting that the responsive and well-tuned fly-by-wire controls make shipboard landings much easier and more precise than is possible with many other helicopters. “It’s a real testament to the stability of the aircraft,” Foxton said.*

A further comment from the sea trials also underscored the aircraft’s handling capabilities:

*A key feature of the King Stallion compared to the CH-53E Super Stallion – aside from being able to lift more – is that it’s much easier to operate due to the fly-by-wire flight control system.*

*Perrin noted the ease of operations during the April 6 aerial refueling test with a KC-130 tanker, saying, “it’s usually a pretty difficult, demanding task, but the 53K handled that extremely well and we had very good handling qualities out of that.”*

*During sea trials, the colonel added, “the handling qualities of the aircraft at the ship were excellent. All the initial pilot feedback has been that the handling qualities of the 53K on all spots, day, night, in [night vision goggles], was very very good. They were all very impressed ... (with) how much easier it was for the pilot to actually come back and land on the ship because of the flight control system, because of the fly-by-wire system on the 53K, which is very good....”*

Another important aspect of the CH-53K compared to legacy systems which makes it a great aircraft for reserves to be able to enter the force and provide for force augmentation or mobilization is its new flight simulators.

With a digital aircraft, software upgradeability goes on all the time.

How do I know that I as a reserve CH-53K pilot know what the latest software on my aircraft can do?

One answer is given by the digital simulators, which of course need to have concurrent modernization with the operational aircraft themselves.

I have been in the first flight simulator at a Marine Corps base, namely, New River Air Station. After I did so, and while visiting the air station, I wrote this piece on December 3, 2020 to highlight what I saw and what I experienced.

*Yesterday, during my visit to New River, I experienced flying in the cockpit of the Marine Corps' latest key air capability, the CH-53K. I was in the cockpit with LtCol Luke "Amber" Frank, the VMX-1 Detachment OIC. He is a very experienced Marine Corps pilot having flown virtually every type of rotorcraft the Marine Corps has, including being a presidential pilot as well.*

*He is experienced; obviously I am not.*

*So where did this flight happen?*

*In the new flight simulator which has been built and is operating at VMX-1.*

*The man-machine working relationship is a central part of the flight experience, with new capabilities crucial to mission success built around key man-machine capabilities.*

*A central one is the ability of the aircraft to hover with the automatic system, which allows pilots to operate in very degraded operating conditions to put down their aircraft at desired locations to deliver their payloads.*

*During our flight, in spite of the bright clear but cold day outside, we experienced several difficult landings in degraded conditions, dust storms, turbulence, and various challenging situations to land the aircraft.*

*Why does this matter in terms of concepts of operations?*

*This means that the crew can deliver the payload, Marines or cargo, to the area which is desired in terms of commander's intent with regard to the landing zone selected for maximum combat effectiveness.*

*If one is inserting a force to support an effort to destroy key enemy capabilities, being able to take the right kind of situational awareness and land EXACTLY where the commander has determined the force could have the highest combat effect is a core combat capability with tactical and even potentially strategic effect.*

*This is how a capability within a new aircraft translates into enhanced probability for combat success.*

*And if you are an allied military which needs capability to insert force rapidly in special operations environment, the CH-53K could be a game changing capability for force insertion.*

**In short, if you rely on reserves as a key part of force structure capabilities and rely on mobilization as part of your force augmentation strategy, it is crucial to have platforms which can be re-learned rapidly prior to operating them in an operational situation.**

Even more important, if you have a man-machine capability such as fly by wire, then the capabilities of those pilots who do not regularly operate the aircraft, their own safety, reliability and performance standards go up.

And with regard to a heavy lift helicopter, many lives are at stake.

# Israel and the CH-53K Decision: Re-Baselining Heavy Lift Helicopters for Strategic Uncertainty

04/20/2021

**In addition, the considerations highlighted in the article above, another important factor when the IDF looks at its strategic environment today is to build for strategic uncertainty.**

The recent Abraham accords have reshaped the Israel strategic environment; but how will that environment evolve and what is next?

In other words, Israel faces a very uncertain strategic environment; what is today's threat might be part of tomorrow's solution to yet a very different threat environment.

That is why when looking at an air platform, growthability, and flexibility are key considerations.

What the CH-53K as a software upgradeable platform with new baseline for a heavy lift platform provides is a new baseline from which to shape capabilities for an uncertain strategic future.

Put bluntly, defining operational requirements for a replacement platform based on the past thirty years of experience or the current threat environment is simply inadequate.

What is necessary is to introduce a platform which works seamlessly with today's IDF, fits into the current concept of operations, but can change over time to anchor changes in those concepts of operations and to deliver capability for tomorrow's strategic environment.

And the CH-53K is a very different type of heavy lift helicopter, one built with a new baseline for upgradeability.

**For example, as I wrote with regard to the CH-53K and its digital cockpit:**

*The CH-53K is shaping a new paradigm for heavy lift but it is doing so in the context of a new paradigm of warfare as well, or in the context, of a shift from the land wars to full spectrum crisis management.*

*Crisis management is evolving significantly.*

*And the Marines as the US's premier crisis management force is evolving along with the changing demand set.*

*The Marines are reshaping their force structure to enable it to operate as an effective modular force with scalable force capabilities, which can be tailored to a particular crisis.*

*The CH-53K is a key part of this modular force.*

*The aircraft brings new capabilities to the force which are in no way the same as the CH-53E.*

*One of those capabilities is the new cockpit in the aircraft and how digital interoperability and integration with the evolution of the MAGTF more broadly is facilitated by the operation of a 21st century cockpit.*

*The cockpits are very different and fit in with a general trend for 21st century aircraft of having digital cockpits with combat flexibility management built in.*

*Because the flight crew is operating a digital aircraft, many of the functions which have to be done manually in the E, are done by the aircraft itself.*

*This allows the cockpit crew to focus on combat management and force insertion tasks.*

*And the systems within the cockpit allow for the crew to play this function.*

*This means that the K and its onboard Marines and cargo can be integrated into a digitally interoperable force.*

*This means as well that the K could provide a lead role for the insertion package, or provide for a variety of support roles beyond simply bringing Marines and cargo to the fight.*

*They are bringing information as well which can be distributed to the combat force in the area of interest.*

This kind of re-baselining of a heavy lift helicopter was a key part of the Israel decision to buy the CH-53K and to prepare to introduce it into a dynamically changing IDF, one which the CH-53K can make a major contribution to in terms of the dynamics of change for the force as well.

## **The IDF Chooses the CH-53K: Building Block for Manned-Unmanned Operational Future**

05/04/2021

The IDF recently selected the CH-53K to replace its legacy heavy lift assets, namely, the CH-53D. It is clear that the IDF is buying the CH-53K for many of the same reasons which USMC is doing so but the IDF has been especially focused on three key reasons for doing so.

I addressed earlier, two key reasons the IDF is doing so, namely, the benefits of the aircraft for more effective reserve force and the advantages of ongoing modernization of the aircraft to deal with an uncertain strategic environment.

A third reason is the focus of this article. The Israelis have been leaders in unmanned air systems for more than three decades. Their use which predated the conflict in 1982 in Lebanon but became very visible in that campaign. Their efforts in the unmanned area have only grown since then, and any acquisition of new manned piloted aircraft going forward will be bought with a manned-unmanned teaming future in mind.

This is the case with regard to the CH-53K and its fly by wire capabilities built into the aircraft. What the fly-by-wire system allows the pilot to do is to focus on the mission rather than focusing almost exclusively on flying the aircraft. In earlier discussions with CH-53K operators, the key role which the new automated systems onboard the CH-53K provide for the aircraft have been highlighted as transforming how to be able to execute their missions more effectively.

Col. Perrin, Program Manager, PMA-261 CH53 Heavy Lift Helicopters, U.S. Naval Air Systems Command at Pax River Naval Air Station, focused significantly in his presentation on what the only new heavy lift helicopter for the joint force would bring to that force. “I would tell you the 53K is what I would call the 5th generation or the leading generation of heavy lift helicopters for all helicopters. It is fly by wire it has the power and speed that you really need in a helicopter and really executes its mission extremely well.”

He put a key point very well which pilots of the CH-53K have emphasized: “The pilots can put the aircraft where they need to in the combat environment.” This is about the ability to work in degraded environments and with the fly by wire and other digital systems are able to put that aircraft exactly where the optimal location in the combat environment.

When I met with Lt. Col. Frank of VMX-1, the officer in charge of the CH-53K Operational Test Detachment, he underscored the importance of this capability to the warfighter. “I’ve started in the Ch-53D in 2004, they’re my first love. I’ll always love them. They were much harder to fly. And the ease of flying this, the flight control system is probably the biggest game changer for the CH-53 community. We’re not used to anything like this. It’s very intuitive. It can be as hands off as you know, a brand-new Tesla, you can close your eyes, set the autopilot and fly across country.

“Obviously, you wouldn’t do that in a tactical environment, but it does reduce your workload, reduces your stress. And in precision hover areas, whether it’s night under low light conditions, under NVGs, in the confines of a tight landing zone, we have the ability to hit position hold in the CH-53K and have the aircraft maintain pretty much within one foot of its intended hover point, one foot forward, lateral and AFT, and then one foot of vertical elevation change.

“It will maintain that hover until the end of the time if required. that’s very, very stress relieving for us when landing in degraded visual environments. Our goal at VMX-1 is to create tactics that employ that system effectively.

“Some communities struggle with how they use the automation, do they let the automation do everything? Do they let the pilots do everything? How to work the balance? We’re working on a hybrid where the pilots can most effectively leverage automation.

“If you know you’re coming into a brownout situation or degraded visual environment, you engage the automation at a point right before the dust envelops you. And then in the CH53K, you can continue flying with the automation engaged. You continue flying with the automation engaged, and you can override it, but as soon as you stop moving the controls, it will take your inputs, estimate what you wanted and keep the aircraft in its position.

“It’s a very intuitive flight control system, and it blends very well with the pilot and the computers. It allows you to override the computer. And then the second that you stop overriding it, the computer takes back over without any further pilot input. That’s probably the biggest game changer for our community.”



But what this also means is that the ability to handle the pilot workload more effectively as a manned mission, means that the fly by wire system enables future operations where the CH-53K can work with airborne autonomous systems as well. In an interesting thesis written by Lt. Jinan M. Andres for the Air Force Institute of Technology, the author highlights the importance for managing pilot workload as manned-unmanned teaming becomes part of the pilot's airborne mission portfolio. This ability rests in part on the manned asset having the capability built in to provide for effective pilot workload management, of the sort that the CH-53K is built to provide going forward.<sup>7</sup>

For the IDF, unmanned systems have been growing parts of their force over the past three decades. It is very clear that new ways to work airborne manned systems with a variety of autonomous systems either airborne or at sea is a key part of the way ahead.<sup>8</sup> For the IDF, buying a fly by wire heavy lift aircraft opens the aperture on an insertion force to build mass and effectiveness by having loyal wingman as part of its future.

In a visit to Pax River last year, I had a chance to discuss such a future with Col. Perrin. "The CH-53K "can operate and fight on the digital battlefield." And because the flight crew are enabled by the digital systems onboard, they can focus on the mission rather than focusing primarily on the mechanics of flying the aircraft. This will be crucial as the Marines shift to using unmanned systems more broadly than they do now.

"For example, it is clearly a conceivable future that CH-53Ks would be flying a heavy lift operation with unmanned "mules" accompanying them. Such manned-unmanned teaming requires a lot of digital capability and bandwidth, a capability built into the CH-53K.

If one envisages the operational environment in distributed terms, this means that various types of sea bases, ranging from large deck carriers to various types of Maritime Sealift Command ships, along with expeditionary bases, or FARPs or FOBS, will need to be connected into a combined combat force.

"To establish expeditionary bases, it is crucial to be able to set them up, operate and to leave such a base rapidly or in an expeditionary manner (sorry for the pun). This will be virtually impossible to do without heavy lift, and vertical heavy lift, specifically. Put in other terms, the new strategic environment requires new operating concepts; and in those operating concepts, the CH-53K provides significant requisite capabilities."

Enabling a manned-unmanned teaming capability for the heavy lift force is clearly an important factor in the IDF decision to buy into the future, rather than simply to maintain how they do what they do now.

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<sup>7</sup> <https://scholar.afit.edu/etd/3225/>

<sup>8</sup> <https://sldinfo.com/2021/04/next-generation-autonomous-systems-an-australian-perspective/>