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**Lt Gen David A. Deptula, USAF (Ret.) at the Italian Air Force
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***Aerospace power and new capabilities: how are the latter being used in conflicts
and which are their effects? How to measure their value?***
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Good afternoon, ladies, and gentlemen. First, let me add my best wishes to the men and women of the Italian Air Force on your 100th anniversary. Yours is a momentous past, with great promise for the future.

The world we face today is the most dangerous we've seen since the end of the Cold War. Much of that time was dominated by the Global War on Terror. That time frame may end up being remembered as the "Age of Mass Distraction," in which we allowed our attention to be diverted from the existential dangers of our time. We now find ourselves locked in competition with authoritarian regimes in Europe and Asia.

Over the past 30 years we lost our conventional deterrent due to the dramatic cutting of our air forces; we didn't produce adequate weapon stocks; and many political leaders believed that we'd seen the end of large-scale conflict with the collapse of the Soviet Union.

We must reverse these errors not just to keep pace with capable adversaries, but to gain an advantage that will deter future aggression.

Meeting this challenge will require Western aerospace forces to acquire the capabilities—at the necessary capacities—to fight and win in high intensity conflicts in highly contested environments.

Procuring fifth- and sixth-generation aircraft while simultaneously leveraging advanced technologies will be critical to accomplishing this goal. Advanced technologies range from those currently being used in the battlespace of Ukraine like drones, proliferated satellite constellations, artificial intelligence, and virtual reality to emerging technologies like autonomous aircraft, hypersonic, and directed energy weapons, along with the greater exploitation of artificial intelligence to deliver "data-to-decision" capability to significantly enhance situational awareness.

Additional advances will include the means to reduce aircraft detection across the electromagnetic spectrum, increased propulsion efficiencies, expanded sensor capabilities, and enhanced weapons effects.

The war in Ukraine has demonstrated the importance of airpower. Without either side achieving air superiority, the war in Ukraine has devolved into an artillery slugfest resembling World War I. Properly employed and provided, airpower can break this stalemate.

Combat aircraft can traverse hundreds of miles on a single mission, shift from one front and/or mission to another in minutes, carry thousands of pounds of long-range precision ordnance that Ukraine's Air Force doesn't have today. Powerful sensors on western combat aircraft also provide the means to see the battlespace in real-time.

Combat aircraft enable a military to optimize the combined arms equation, allowing ground forces to exploit the advantages that only aerospace power can create. Those are some of the properties of airpower that were forecast by Mitchell and Douhet and proven in the air campaign of the first Persian Gulf War.

Modern Western airpower can provide the means to interject significant benefits over ground-based fires and have the potential to give Ukraine a distinct advantage over the Russians. That can be a measure of the value of modern airpower, but it must be provided to Ukraine to have the desired effects!

The conflict in Ukraine has also underlined the importance of airpower fundamentals. Without sufficient airframes, parts, and quantities of munitions, little of the potential of aerospace power can be realized.

While Ukraine provides many lessons, a conflict involving China would be very different. China has gone to school on the Western way of war and created a strategy of anti-access/area denial and a doctrine of systems destruction specifically tailored to imitate the airpower strategies so successful in Western air campaigns of the past three decades.

However, resting on the laurels of previous western air dominance is a formula for catastrophe. The constant evolution of our adversary's military capabilities necessitates the development and procurement of next-generation aerospace capabilities at scale.

But maintaining airpower as the West's asymmetric advantage requires more than buying updated aerospace systems. We must always be willing to embrace groundbreaking technologies.

We all need to understand that the latest generation of combat aircraft as well as planned future combat aircraft are all information systems, beyond just fighters or bombers. Data today is just as important to military power as aircraft, warships, and tanks. I coined a phrase many years ago that "we are swimming in sensors, so we need to avoid drowning in data."

Artificial intelligence will allow us to sift through the ocean of data advanced sensors create, accelerate the allied OODA loop, and enable successful combat operations in highly contested scenarios.

Beyond assimilating data, AI enabled autonomous aircraft will also serve as force multipliers. What are now being called collaborative combat aircraft will partner with inhabited systems for future air dominance. A pilot will be capable of governing many collaborative combat aircraft in a variety of roles, and large numbers of these could help offset our current serious combat aircraft shortfalls.

Airpower today can impose kinetic effects at the speed of sound. With the maturing of hypersonic weapons, we'll be able to do that at several times the speed of sound. However, imagine the ability to impose kinetic effects at the speed of light. The realization of the routine employment of directed energy weapons will truly be game-changing for allied air forces—and for our enemies too, so we better beat them to fielding these capabilities.

Airpower is based on the characteristics of technology—but the invention, development, and application of those instruments flow from human imagination, and knowledge. Air Forces seize on the virtues of air and space to project power without projecting vulnerability, and as a result, aerospace power can provide us with strategic alternatives simply not available any other way.

But to do so we need to create a culture and environment that encourages disruptive thinking instead of discouraging it. Our Air Forces were founded because of disruptive thinking. Nurturing a culture of invention and disruption will be vital if Italy and her allies are to employ aerospace power effectively in defense of the free world.