



## THE RACE FOR DRONES

By Michael J. Boyle



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Over the last two decades, the United States has been the world's pre-eminent user and supplier of Unmanned Aerial Vehicles (UAVs). In 2013, the United States was estimated to have approximately 7,500 drones in operation, ranging from relatively small surveillance drones to the more famous Predator and Reaper models used for targeted killings in Pakistan, Yemen and elsewhere.<sup>1</sup> By contrast, China's fleet, ranked as the second largest in the world, is smaller than the United States by at least several thousand drones. One estimate in 2011 suggested that China's Air Force possessed only 280 drones, although other branches of the Chinese government have thousands more.<sup>2</sup> Moreover, the United States has enjoyed vast technological advantages in range and strike capacity of its drones, making its fleet a cut above those held by their global competitors.<sup>3</sup> Other states, such as Britain, Israel, Russia, and the United Arab Emirates have their own growing drones programs, and have invested in research and development, but remain far behind the United States in the number and sophistication of their drones. The concentration of technological know-how in U.S. companies, and the vast infrastructure in research and development for drones present in the United States, has led many observers to conclude that America will retain an unchallengeable pre-eminence in drones for the foreseeable future.<sup>4</sup> The global diffusion of drones, according to the conventional wisdom, is not a problem because of the lead in drone technology that the United States holds over potential adversaries.

Such complacency about the consequences of a global race for drones is not warranted. Today, America's comparative advantage in drones is being eroded as drone technology is spreading across the international system. While their current technology lags, and in some cases merely imitates, U.S. drone models, global competitors such as China and Russia are now spending billions to catch up to the United States in research and development for drone technology. The U.S. lead will remain for the next decade or more, but the substantial Chinese, Russian and European investments in drone research and production will gradually match the technological advantage currently held by U.S. companies. Moreover, the United States is not the dominant player in the current export market for drones. Israel has become the world's supplier of first resort, selling drone technology to a large number of other states for domestic and military uses. Due to U.S. and Israeli exports, and the efforts of other states to develop drone export markets, drones have now spread to most established militaries in the developed world. Between 2004 and 2011, the number of states with active UAV programs doubled, from 40 to over 80.<sup>5</sup>

<sup>1</sup> Micah Zenko, "10 Things You Didn't Know About Drones," *Foreign Policy*, March/April 2012.

<sup>2</sup> "Chinese Hacking Aims to Gain U.S. Drone Technology," *United Press International*, Sept. 21, 2013.

<sup>3</sup> "China hacking aims to gain U.S. drone technology," *United Press International*, Sept. 21, 2013.

<sup>4</sup> Joseph Singh, "Betting Against a Drones Arms Race," *Time Magazine*, Aug. 13, 2012. See also Shashank Joshi and Aaron Stein, "Emerging Drone Nations," *Survival* 55:5 (2013), pp. 53-78.

<sup>5</sup> "Agencies Could Improve Sharing and End-Use Monitoring on Unmanned Aerial Vehicle Exports," General Accounting Office, GAO 12-536, July 2012, p. 9.

More than one third of the states in the world have developed their own drones programs, ranging from relatively small boutique programs to growing multi-purpose drone programs used for combat, surveillance and civilian uses. According to a RAND study, 23 countries are developing their own technology for different types of armed drones.<sup>6</sup>

Even in an era of austerity and steep cuts in defense spending, the demand for drones is increasing, leading a growing number of states to consider joining the export market. The American and Israeli companies that traditionally have dominated the drones market are now facing increasingly stiff competition from Chinese companies who are developing dozens of drone models for the export market. The competition will only become more intense as new arms manufacturers from Europe, Russia, and the Middle East begin to catch up. Moreover, many of these states, such as Russia and China, face fewer export restrictions and will be able to sell sophisticated drones to governments not authorized by the U.S. Congress to receive comparable American models. The result is that drones of increasing quality will soon be in the hands of states such as Iran, Syria, and North Korea.<sup>7</sup> Similarly, non-state actors will get into the race for drones, as the United States recently discovered when Jabhat al-Nusra and ISIS deployed drones to coordinate attacks against targets in Syria.<sup>8</sup>

The long-term strategic consequences of this new arms race in drones around the world will not be known for decades. At this point, drones are not an immediate strategic game changer in the way that nuclear weapons once were. A better analogy is the diffusion of military aircraft: after the pioneering use of heavier-than-air aircraft by the U.S. in 1910, all of the major powers at the time—Britain, France, Austria, Germany and Italy—rapidly followed suit with their own military aviation programs, while many other states became purchasers of aviation from dominant American, British and other European suppliers. The diffusion of military aircraft (of varying quality) continued throughout the 1930-1940s to the point where almost every major military in the world boasted at least a token military aviation capability. Over time, it became a mark of prestige for a state to have an air force even if it conveyed little more than symbolic value. By the late 1940s, it was clear that the diffusion of military aviation was creating dramatic strategic consequences, either by resetting the terms of competition for existing rivalries or by introducing a degree of uncertainty into regional balances of power.

The world is now approaching a similar point with drones as the race for this technology is resetting the terms of global competition and quietly altering the rules of the game for many long-simmering conflicts and rivalries. This is happening in part because few, if any, states will use drones in the way that the United States currently does, as a way to ruthlessly target militant networks in ungoverned territories. Rather, the proliferation of drones will also be accompanied by rapid adaption of drones to new, and perhaps unforeseen, civilian and military uses, which will have three consequences for the international system. First, the proliferation of drones will reset the rules and norms governing surveillance and reconnaissance and invite new counter-measures that may paradoxically increase uncertainty between regional rivals over the long run. Second, as a low-cost, apparently low-risk form of technology, drones will become increasingly useful to governments in testing the strategic commitments and the nerves of their rivals. Even today, a number of governments and rebel groups facing regional rivalries have started to use drones in ways that chip away at the foundations of previously stable deterrent relationships. Third, the worldwide proliferation of drones in contested airspace, and the increasing risk that a drone will have an accident with a civilian aircraft, multiplies the chances of a conflict spiral stemming from an accident or drone misuse. Given these risks, it is in Washington's interest to take a leading role in slowing the race for drones and developing new legal, institutional and normative mechanisms to govern drone usage and sale in the future.

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<sup>6</sup> Lynn E. Davis, Michael J. McNerney, James Chow, Thomas Hamilton, Sarah Harting, and Daniel Byman, "Armed and Dangerous: UAVs and U.S. Security" (Washington DC: RAND, 2014), p. 9.

<sup>7</sup> The Syrian government has used drones supplied by Iran for strikes against rebel forces. Joby Warrick, "Russian, Iranian technology is boosting Assad's assaults on Syrian rebels," *The Washington Post*, June 1, 2013.

<sup>8</sup> Cody Poplin, "Look Who Else Has Drones: ISIS and al Nusra," *Lawfare*, Oct. 24, 2014, <http://www.lawfareblog.com/2014/10/look-who-else-has-drones-isis-and-al-nusra/>.