THE WALL STREET JOURNAL.
ONLINE

July 17, 2008

Unmanned Aircraft Face Hurdles

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July 17, 2008; Page B5

FARNBOROUGH, England -- Unmanned aircraft are rapidly becoming mainstays of military and border-security operations worldwide. But significant commercial uses for the planes aren't expected to emerge for at least another decade because of regulatory and technical challenges, industry and government officials said at the international air show here.

Between now and 2017, worldwide demand for unmanned aircraft, their payloads and related ground control systems is projected to top $17 billion, according to Forecast International, a Newton, Conn., consulting firm. But only about $100 million of that demand is expected to involve commercial applications.

There has been sharp growth in the number of so-called Unmanned Aerial Vehicles used by the U.S. government in recent years for tasks ranging from battlefield surveillance in the Middle East to tracking wildfires in Western states. On an average day, some 30 unmanned Pentagon aircraft are in the skies over Iraq and Afghanistan. More than half of the 93 planes the U.S. Air Force envisions buying by late 2009 are UAVs, designed to be flown remotely by pilots on the ground.

European governments also are showing greater interest. Aerospace companies are talking to the British government about possibly using unmanned aircraft to supplement conventional helicopters in providing security and monitoring car traffic at the 2012 summer Olympics in London. By then, according to Mark Kane, who heads the UAV business at **BAE Systems** PLC, the market for governmental uses of such aircraft could climb to as much as $10 billion annually, not counting the U.S.

It has been widely assumed that there was considerable pent-up demand and momentum for commercial applications. But officials here indicate that may be wishful thinking.

Regulatory hurdles, combined with technical and business challenges, are likely to block widespread commercial UAV operations on both sides of the Atlantic for a long time. "I don't foresee any certification in commercial airspace until 2020" or later, said Francois Quentin, senior vice president of the aerospace division of **Thales Group** SA.

Earlier this summer, Federal Aviation Administration officials told a U.S.-European industry conference that preliminary proposals spelling out how UAVs can be widely integrated into the U.S. airspace were at least seven years away, with final regulatory approval unlikely before the end of the next decade.

Kevin Brown, who runs **Boeing** Co.'s air-traffic control unit, said that figuring out how unmanned aircraft can sense and avoid other aircraft -- taking evasive maneuvers if necessary -- "is one of the hardest corners" of airborne-traffic management. In light of such complications, he said, "commercial applications are much further down the road."

Nor are potential operators and customers beating down the regulators' doors to speed up their

deliberations. What specific interest has surfaced primarily focuses on smaller and simpler UAVs. "Most of the applications we see are below" 300 pounds, according to Yves Morier, a senior European safety official.

General Atomics Aeronautical Systems, which has its Predator aircraft deployed by the U.S. military in the Middle East, has looked at selling other UAVs to mining companies looking to use high-tech sensors for prospecting, or to monitor oil pipelines. But customers are scarce because "they're not ready for it," according to Thomas Cassidy Jr., president of a unit.

Other advocates of unmanned aircraft also see a long uphill climb to commercial acceptability. "There are safety elements that need to be proven and policy decisions that must come before" UAVs become commonplace, according to Judy Marks, the head of **Lockheed Martin** Corp.'s air-traffic control unit.

Safety requirements are lower for military and governmental versions, because they typically operate in segregated airspace and don't have to worry about potential collisions with airliners or general-aviation aircraft. For military applications, Boeing, **United Technologies** Corp. and BAE Systems are looking at developing completely autonomous UAVs, intended to fly or hover without any pilot input.

--Daniel Michaels and August Cole contributed to this article.

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