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The aviation community is increasing its reliance on digital systems in its everyday operations. Many aircraft utilize computers rather than physical wire connections to perform the operations that are necessary for the aircraft to function. As a result, we can think of the term “cyber” in the field of aviation as referring to the Cyber-Physical Systems that control the everyday operations of aircraft, air traffic controllers, and airports.

Given that many of the cyber-physical systems in use today are older, they are inherently set up with flaws and security vulnerabilities baked into them. Additionally, these systems have no standards for security measures that should be taken into consideration.1 Inherently, this lack of standardization means that there are many holes in these systems that can be exploited.

Additionally, the data infrastructure that the aviation community uses is digitally transmitted and is thus part of the “cyber” realm of aviation. This infrastructure, known as Automatic Dependence Surveillance Broadcast (ADS-B) is replacing the use of radar in aircraft.2 One of the issues with this is that currently, communications between aircraft and controllers is not secured and is not encrypted.2 This means that these communications are susceptible to exploitation by anyone who wishes to intercept these signals and cause trouble.

The many interconnected cyber-physical systems in the aviation industry contain vulnerabilities that are likely to be exploited if they have not been already. This integration of the cyber and physical domains in aviation is thus a large part of aviation “cyber”.

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