

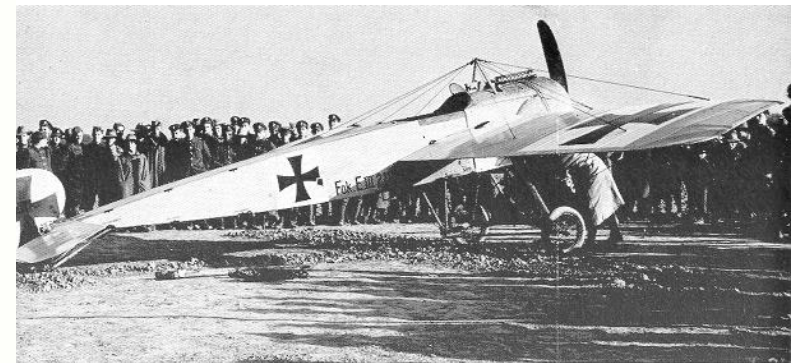
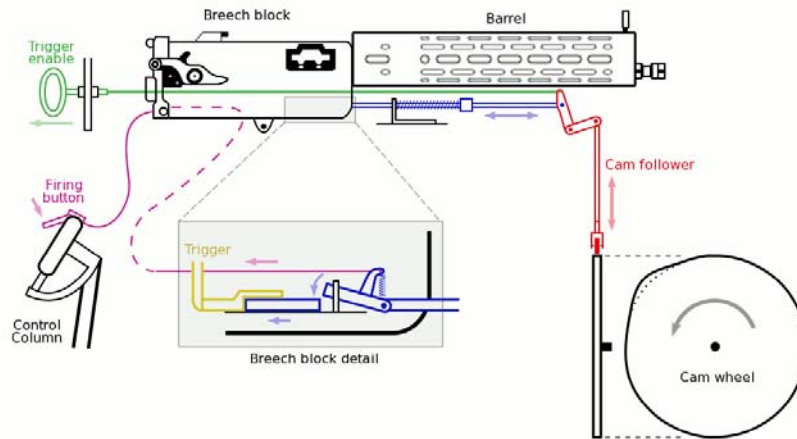
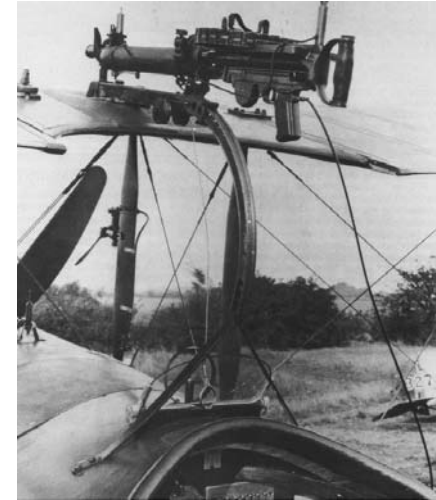
NDIA Gun & Missile Systems Conference

Panel Discussion: Unmanned and Autonomous Systems Weapons Integration

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Lessons From History: The Aircraft Analogy



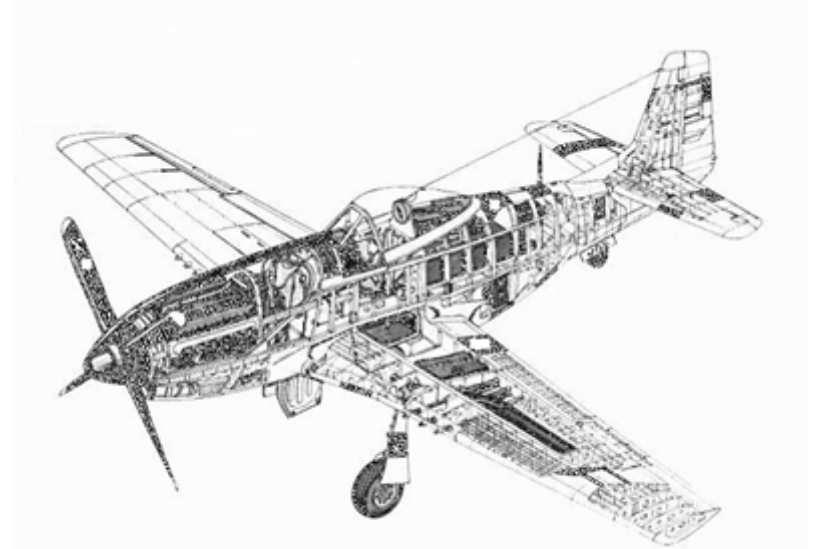
Ferdinand Foch, allied commander in chief in 1918, reputedly stated in March 1913
"Aviation is fine as sport.
I even wish officers would practice the sport, as it accustoms them to risk.
But, as an instrument of war, it is worthless (c'est zero)."



Lessons From History: The Aircraft Analogy



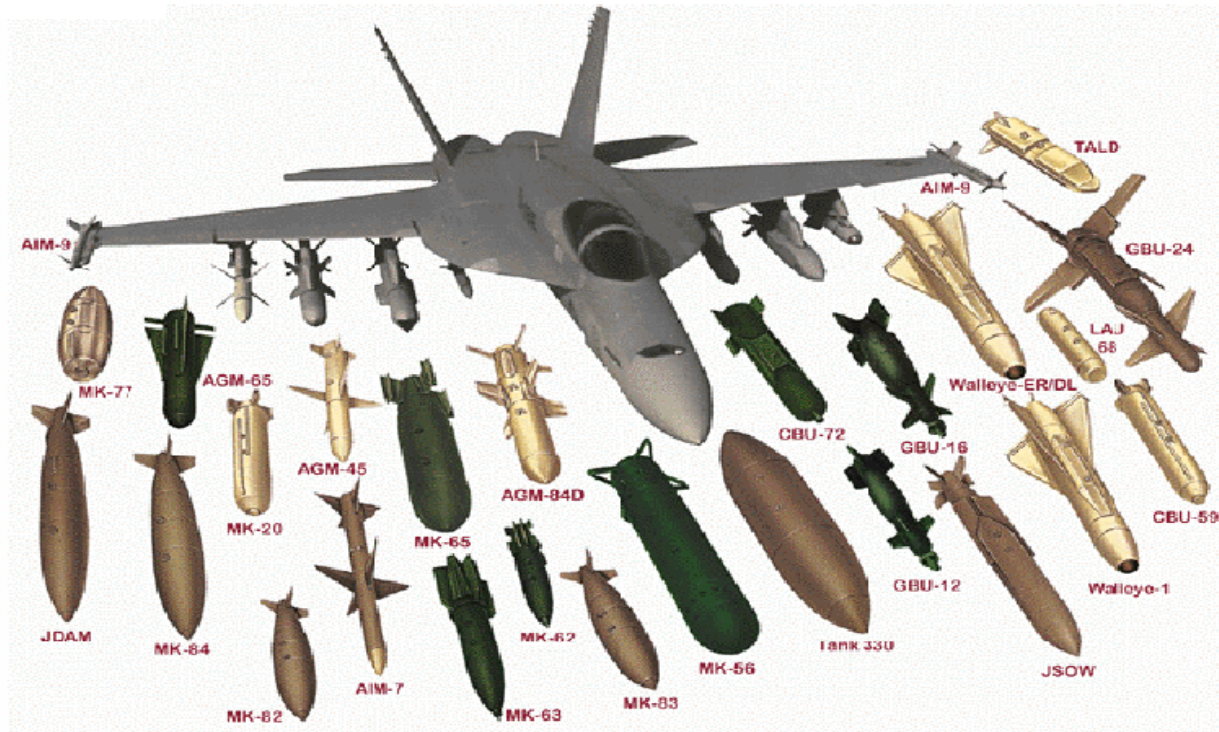
1940: North American Aviation contracted to develop the P-51 Mustang. The original NA-73X had (2) chin mounted 50 cal guns.



Within a few short years the P-51 had all-wing mounted guns and began carrying rockets mounted to external wing stations.



Lessons From History: The Aircraft Analogy



60 years later, the FA-18 exemplifies a mission and systems integration focus:

The entire platform design enhances capabilities and effects for the tactical mission



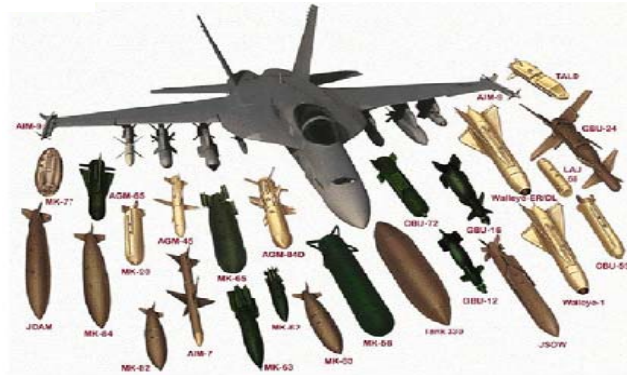
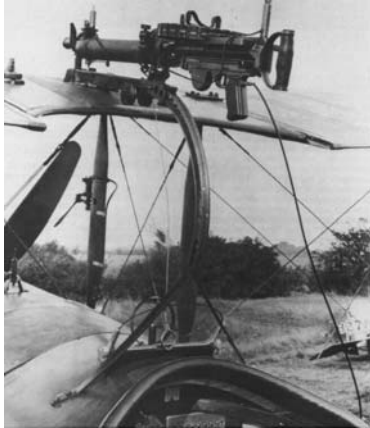
Lessons From History: The Aircraft Analogy



The UAV community has turned the corner and adopted the concept of matching armed capabilities to mission requirements



Turning the Corner For UGVs



Where, when and how does the UGV community make this transition up the evolutionary ladder?



Desired Endstate

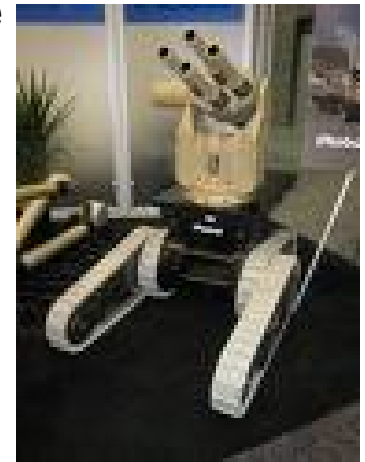
- **Effectiveness/Combat Effectiveness**

- Efficient, reliable, and accurate



- **Scalability**

- Responsive via lethal and non-lethal applications
- Meets multiple battlespace requirements ranging from effective passive deterrence to combat force multiplication



- **Multiplicity**

- Multiple platforms deployable on a single mission set



- **Safety**

- Unquestionable and trusted ally



Future Capabilities

