



INSTITUTE FOR DEFENSE ANALYSES

**Discussion: Do Joint
Fighters Save Money?
(Presentation)**

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Discussion: Do Joint Fighters Save Money?

Stanley A. Horowitz

WEAI 91st Annual Conference

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- Additional literature
- An alternative methodology
- Was F-35 cost growth driven by being a joint program?

- Covered 214 new starts, 44 joint (1970–2012)
- Most metrics not available for entire dataset

	Metric	Single-Service New Starts	Joint New Starts
1	Estimated growth in Quantity Normalized Program Acquisition Unit Cost (PAUC) ^a	35% (80)	42% (19)
2	Percentage of programs with at least one Nunn-McCurdy breach (Dec. 1997–Sept. 2012)	20% (12 of 60)	32% (9 of 28)
3	Percentage of programs with an estimated Quantity Normalized PAUC growth of $\geq 30\%$ ^a	40% (32 of 80)	63% (12 of 19)
4	Program Cancellation Rate	19% (33 of 170)	34% (15 of 44)
5	Percentage of programs cancelled, truncated, or reorganized	28% (47 of 170)	57% (25 of 44)
6	Percent of programs that eventually procure less than the Milestone B total quantity ^b	37% (19 of 52)	48% (11 of 23)
7	Estimated slip in Engineering and Manufacturing Development (EMD)	17% (20)	36% (7)
8	Percentage of programs with at least one Operational Test failure	47% (23 of 49)	77% (10 of 13)

^a Computed for the total acquisition quantity approved at Milestone B.

^b Approximated by the ratio of the total procurement reported in the last SAR for the program divided by the total procurement reported in the first SAR.

- **Based on F-111 experience:**

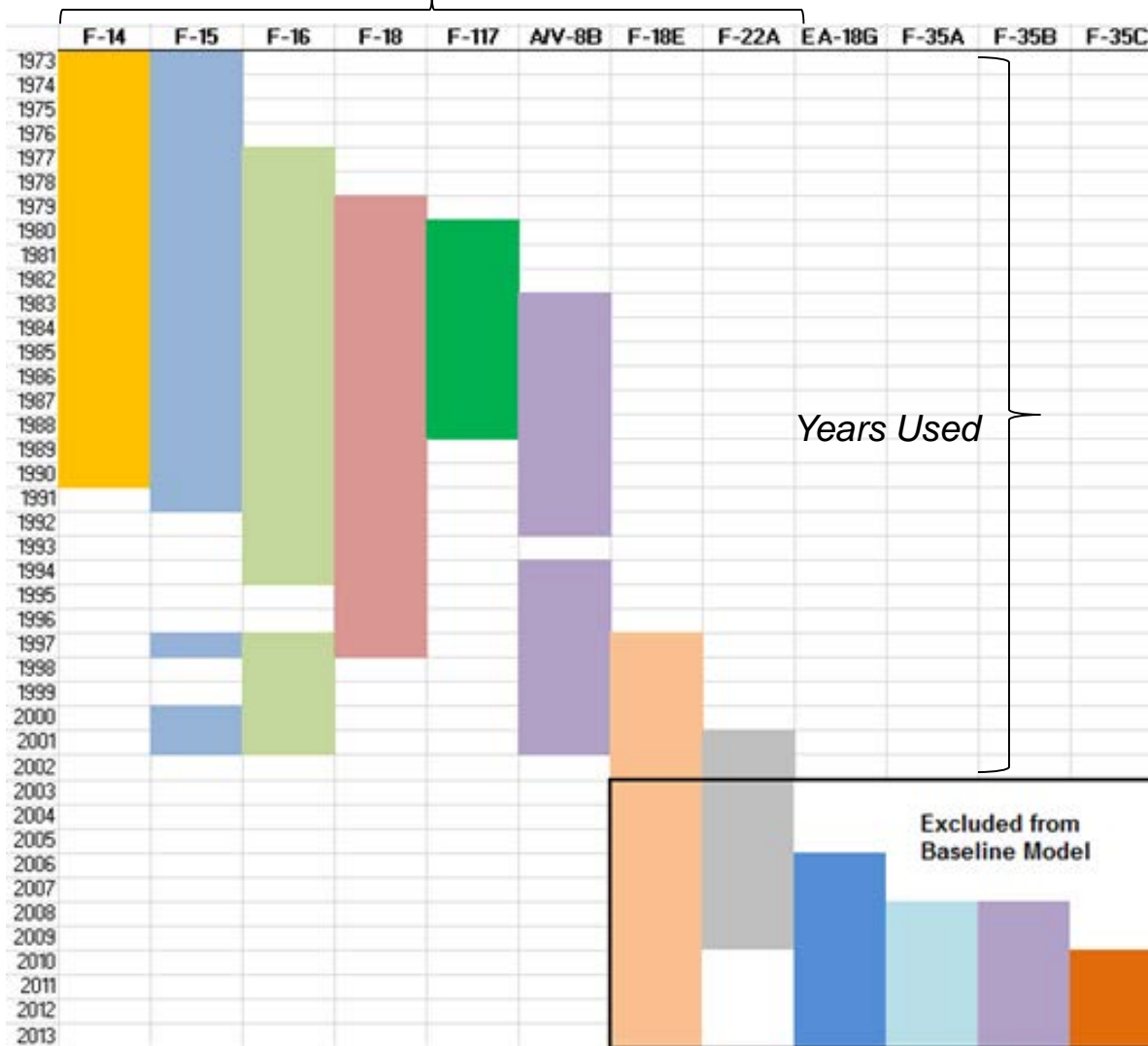
A joint program to develop and procure a system to requirements significantly at odds with the doctrinal preconceptions of any of the participating Services will face severe problems due to detailed Service decisions taken during the course of the program and Service judgments on the results of operational testing.

- **Held out hope for the F-35:**

<u>Program Characteristic</u>	<u>F-111</u>	<u>F-35</u>
Lack of consensus on requirements	Yes	No
Reactive OSD oversight	Yes	Yes
Services not equally engaged in management and funding	Yes	No
Major flaws in acquisition strategy	Yes	No
Unrealistic cost and schedule estimates	Yes	TBD—less so
Technology does not permit achieving all requirements	Yes	TBD—less so

CER* Approach: Is F-35 Out of Line with Other Aircraft?

Programs Used in Model Estimation



- Acquisition cost as a function of aircraft characteristics
- Observations were annual buys by model
- Predicted 2013 F-35 SAR acquisition cost projections well

*CER – Cost Estimating Relationship

- Partly jointness-related causes
 - Redesign effort increased average unit cost 26%
 - Changes in buy profile increased cost 5%
- Errors in Milestone B cost estimate increased cost 23%
 - Incorrect labor rates
 - Low estimate of weight
 - Incorrect modeling of subcontractor costs
- Over 40% not due to jointness

- Re-baselining raised estimate of inflation (escalation) by 2% per year
- Provided substantial cost growth relative to the original baseline
- Not related to program jointness

- The Lorell et al. paper is very creative in building a credible estimate of cost growth and relative cost for joint programs and the F-35
- It is consistent with work IDA has done on joint programs, including fighters

However...

- Our CER for fighters does not show the F-35 to be an outlier
- Most cost growth for the F-35 was not due to jointness
- Perhaps the story is less clear than it initially seems

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