OSD Operational Test Views on T&E/SE Interactions

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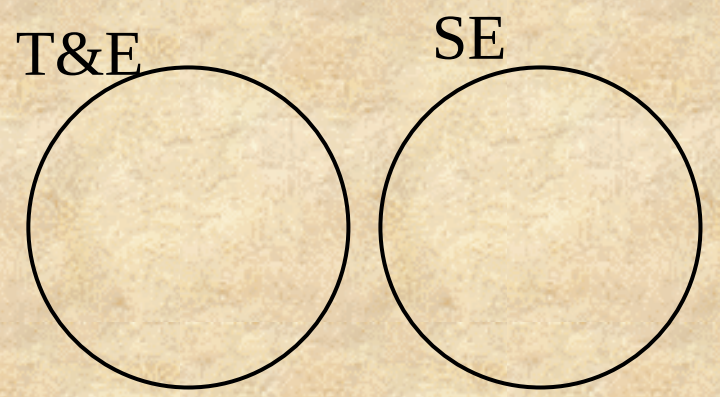
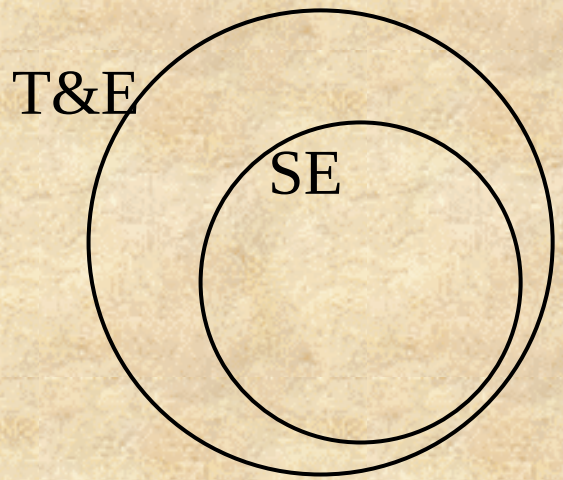
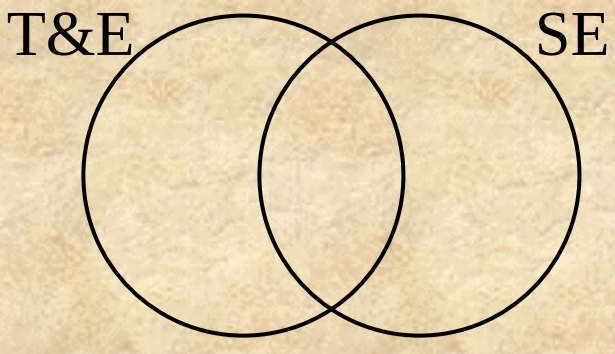
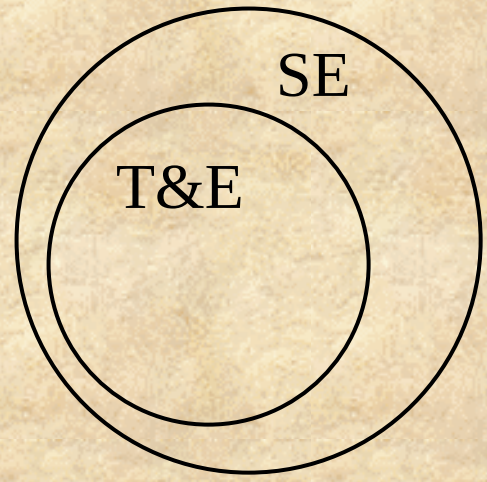
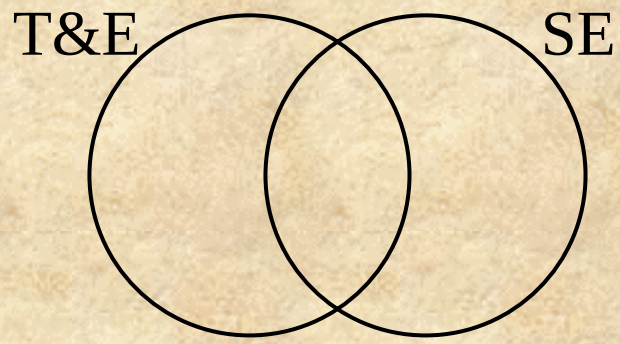
T&E/SE Interactions











- Areas that are separate.
- Areas that overlap

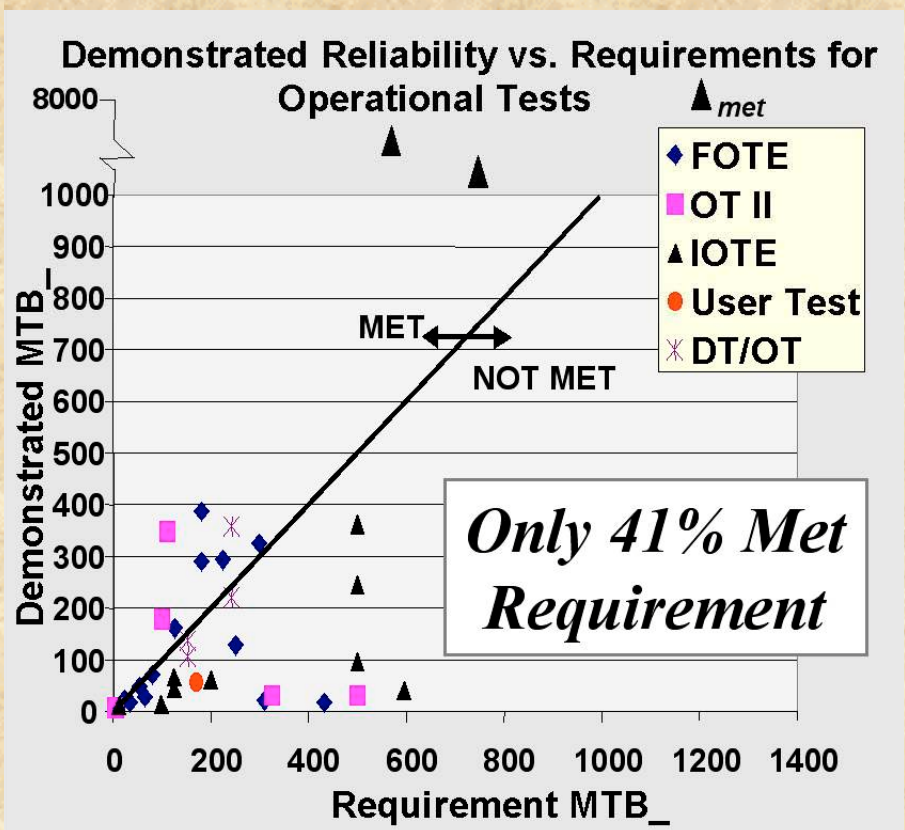
Areas that are separate.

- Systems Engineering
  - Cost
  - Design
  - Manufacturing technique
  - Program Management
- Test and Evaluation
  - Confirmation of Contract Compliance
  - Confirmation of Effectiveness and Suitability

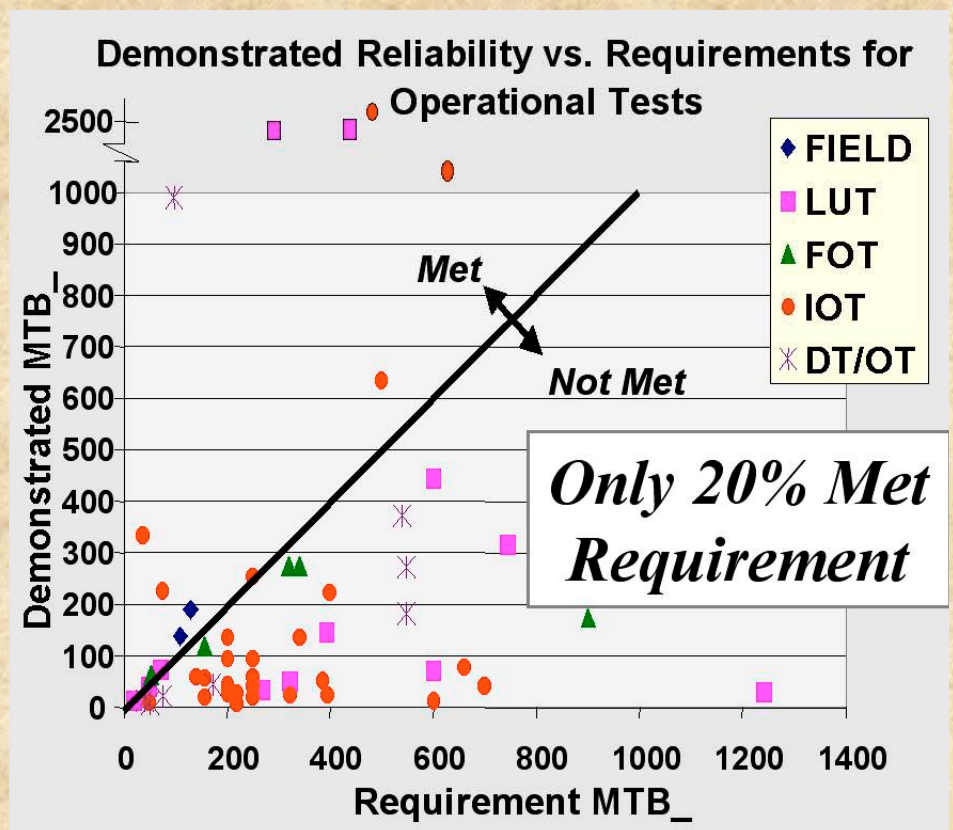
Areas that overlap

- Every evaluation should help the engineering process
- Every test should provide a learning experience about design parameters, materials, ….
- The system view should get early focus on operational concepts, user expectations, conditions of use, logistic support limitations, …
  - These have been causes of trouble in T&E

1985-1990



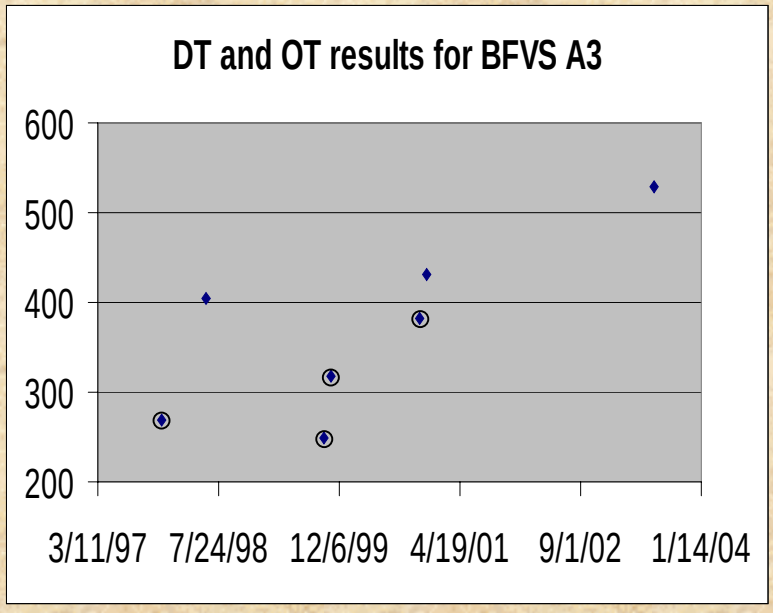
1996-2000



Source: ATEC/AEC

Seven Tests of the BFVS A3

- Every OT reliability number is lower than any DT reliability.
- The Developmental tests follow and not precede the OT!!!!
- The “requirement” was 400 MMBCMF (MMBCombatMission Failures)



System	DT	OT	Factor	DT/OT
HSTAMIDS	916	111	0.12	8.3
IVMMD	90	21	0.23	4.3
S ESV	965	377	0.39	2.6
S ATGMV	2498	1032	0.41	2.4
S ICV	2167	1155	0.53	1.9
S FSV	4010	2306	0.58	1.7
BFIST	2491	1439	0.58	1.7
LW155	227	184	0.81	1.2
BFVS A3	432	382	0.88	1.1
S MEV	2426	2838	1.17	0.9
S CV	4017	8500	2.12	0.5
S RV	2356	5374	2.28	0.4
S MC-A	620	2261	3.65	0.3

Why the Difference?
SE can help Explain and Fix

A List from INCOSE

International Council On System Engineering

- Know the Problem, the Customer and the Consumer
- Use Effectiveness Criteria based on Needs
- Establish and Manage Requirements
- Identify and Assess Alternatives
- Verify and Validate Requirements and Solution Performance
- Maintain Integrity of the System
- Use an Articulated and Documented Process
- Manage Against a Plan