US Task

Proposed Test Outline for 6th Fleet.

Tactical tests against non-cooperative emitters

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- objectives: demonstration of capability in tactical environment; validation of data base; experience cost/effort data
- location: Eastern Mediterranean
- resources: special surveillance, [redacted]
- emitters: 5 types of radars

Field tests against cooperative emitters

- objectives: collection of limited amounts of basic data; conduct of selected experiments in a controlled environment
- location: US East Coast
- resources: CBD, [redacted]
- emitters: CBD simulations, other cooperative emitters

Laboratory Simulations

- objectives: investigation of the effects of relevant variables on system performance; generation of data base; development of new programs or procedures; estimates of costs
- location: College Park
- resources: HRBS
- emitters: desired characteristics to be simulated

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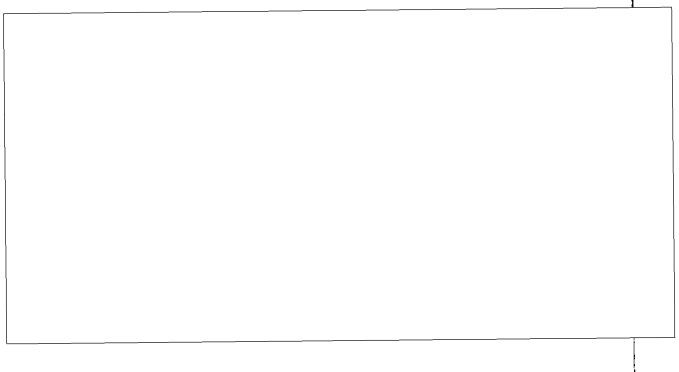

- possible test
  - tracking continuity of selected units under selected circumstances; not necessarily coordinated with other tests
  - observation of EMCON tactics by other vehicles

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Identification Accuracy

- o variables
  - RF, PRF stability
  - overlap of other emitter parameters,
  - emitter density/tracking continuity
- o type of data
  - emitter identification, location, periods of emission
  - system identification, location, periods of emission
  - countermeasures indicators
- o sources of data
  - same as intercept probability, location accuracy
- o quantity of data
  - 25 correct identifications of each individual emitter or emitter types

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Delay time

- o variables
  - processing priorities
  - processing logic
  - emitter density
  - duration of emission and parameter stability
  - communications delay
- o type of data
  - time between initial intercept and availability of final output, for each combination of variables
  - time between availability of output and TOR by user
  - cost/effort tradeoffs
- o sources
  - field stations (for individual cases)
  - HRBS (for generation of data base by simulation)
  - available communications studies (for comm delays)
- o quantity of data
  - 10 selected best/worst cases from field stations
  - several hundred cases from simulations

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Location Accuracy

- o variables
  - PRF stability
  - duration of emission
  - intercept geometry
  - signal density?
- o type of data required
  - actual location of emitter (as a function of time, if moving), with an estimate of error
  - location determined by system (as a function of time, if moving)
  - cost tradeoffs
- o sources of data
  - emitter location: SINS, LORAN equipped ships and aircraft, fixed emitters
  - system determination of location: field stations, HRBS
- o quantity of data
  - 25-100 impacts for each combination of variables

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Intercept Probability

- variables
  - receiver/antenna/data link design
  - radar characteristics
    - peak power
    - antenna pattern
    - scan pattern
  - processing logic
  - emitter density
- type of data required
  - radiation history for each emitter investigated (on-off time)
  - system output (on-off times)
  - effort/cost (man/computer hours per signal or per area)
- sources
  - radiation history; non-cooperative emitters: Tattletale DD, EMPASS, VQ aircraft, submarine cooperative emitters: friendly ships, CBA
  - system output: field stations, HRBS, NSA
- quantity of data required
  - 25 intercepts for each combination of variables

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Cooperative Emitter/Laboratory Simulation Tests

Objectives: Investigation of the effects on system characteristics of the following parameters:

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- emitter PRF stability
- duration of emission
- antenna/scan pattern
- processing programs and precedures
- emitter density
- other significant variables

Procedure:

- Generate signals having the desired spectrum of characteristics, and superimpose these on an appropriate signal background. This can be done either using CBA facility or the HRBS laboratory.
- Process duplicates of test tapes to validate results of field tests. Develop processing techniques and cost estimates optimized for different missions.

Duration of Tests: Continuing over period of about 6-12 months; coordinated with field tests

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Tactical Tests

Objectives: message intercept probability, identification accuracy, and location accuracy for the following cases: tracking individual targets; and performing surveillance of all emitters in a given area

Required Reporting: from surveillance assets: emitter identification, position, and on/off times during specified time intervals

from [ ]: emitter identification, position, and on/off times; also processing time and man-hours used, and duplicate tape for laboratory analyses.

Test Duration: ~10 tests of 1-3 days each, spaced over period of cooperative emitter/laboratory simulation analyses.

Selected Emitters: [ ]

?

other?

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Note to File: 24 Sept 68.

Resume' of the statements on Sea Surveillance as recalled from Adm. Harlfinger. statements to SEC NAV on 23 Sept.

1. The Big Picture on SeasSurveillance with Multi-sensors similar to POPPY with OP-03, 07 and 09 all inputing to the total scene....

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It would seem, th[redacted]e of the pieces may be falling into place on the Structure of the overall Navy plan for this endeavor. If Capt Dwyer is to head up the OP-09 team in this arean perhaps Monday 30 Sept will open up the door still further.

To get the NRL program underway in preparation for Dwyer's visit and using Welden's outline the following was dashed Off.

I. Planning Phase

A. Requirements (review and analysis)

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DATE	TASKING OF SEA EMITTERS	TOTAL ORBITS TASK
Aug. 11	1	232
16	2	
17	1	
19	1	
21	2	
22	1	
23	3	
24	1	
26	1	
28	3	
29	1	
30	1	
31	1	
Sept 02	3	
3	3	
6	1	
9	2	
	28 TOTAL TASK REV FROM 11 AUG UNTIL 9 SEP	

OUT OF 232 REV [ ] COULD HAVE USED OR

ABOUT 12% DEVOTED TO SEA COVERAGE.

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