PROPOSED EDUCATIONAL SKILL REQUIREMENTS
4600 Subspecialty
(Human Systems Integration)

1. Curriculum Number: 362

2. Curriculum taught at: Naval Post Graduate School

3. Students are: Fully Funded

4. Curriculum Length in months: 24

5. Months the program starts: September

6. APC Required: None

7. Community Managers have agreed to allow billets to be coded for 4600 Human Systems Integration officers to be educated for this curriculum.

8. The goal of this curriculum is to educate Naval Officers in Human Systems Integration (HSI). The delivery method is an in-resident course of study at the Naval Postgraduate School. HSI maintains that the human is a critical component in any complex system. It uses an interdisciplinary approach that makes explicit the underlying tradeoffs across the HSI domains and engineering and acquisition disciplines, with the aim of optimizing total system performance while minimizing total ownership costs. The graduate of this program will possess the skills necessary to function as a practitioner in HSI. The officer must understand the fundamental concepts and be familiar with the basic functional areas of human systems integration within the Department of the Navy (DON) and the Department of Defense (DOD) including:

a. HSI DOMAIN KNOWLEDGE: Graduates will understand the nature and scope of all HSI domains: Human Factors Engineering, Manpower, Personnel, Training, Environment, Safety, and Occupational Health, Survivability, and Habitability. They will understand the basis for the decisions made by individual domain specialists and will be familiar with the primary approaches and techniques used by each of the HSI domains.

b. ANALYTICAL TECHNIQUES: Graduates will be able to perform tradeoff analysis across domains and other engineering disciplines, logistics, acquisition, and T&E, and to conduct empirical analysis within the domains of human systems integration. They will be able to apply, at the right place and at the right time, these analytical methods and tools in both

field and laboratory settings within the context of the defense acquisition process.

c. MODELING and SIMULATION: Graduates will be able to apply Modeling and Simulation (M&S) techniques to explore HSI domain tradeoffs and tradeoffs within other engineering disciplines, logistics, acquisition, and T&E. They will demonstrate the ability to apply M&S techniques within and across the HSI domains to facilitate the development, T&E, operations, and sustainment of military systems.

d. HUMAN PERFORMANCE: HSI maintains that the human is a critical component in any complex system. Graduates will understand the basis of both individual and team performance in military settings including human information processing, perception, cognition, decision making, and motor control. Graduates will understand current theory and practice in assessing cognitive factors that affect human performance such as attention, memory, situation awareness, stress, fatigue, and motivation. Graduates will understand current scientific knowledge of factors affecting human performance and human error.

e. SYSTEMS APPROACH: Graduates will comprehend the principles and practices of the fields of PM, SE, and logistics, and T&E as related to the DoD Acquisition Lifecycle. Knowledge of HSI influences on PM, SE, and logistics and T&E will enable graduates to positively influence the DoD Acquisition Lifecycle at appropriate times and in the right manner.

f. IMPLEMENTING HSI TRADEOFFS: Graduates will learn techniques to develop domain level trades, trades within other engineering disciplines, logistics, acquisition, and T&E, impacts, and risk assessments, and the ability to negotiate and communicate to both technical and non-technical audiences. Graduates will understand the political, organizational, social, and economic issues associated with integrating human-machine systems into organizational cultures and environments.

9. The officer must have the ability to apply human systems integration principles as well as knowledge from the relevant sciences such as acquisition, engineering, and human performance to the development and implementation of effective human systems integration policies throughout DON and DOD.

10. The officer must be able to analyze the strengths and weaknesses of new human systems integration policy proposals and suggest alternatives which recognize the potential impact on DOD/DON programs and objectives.

11. The officer must understand and be able to apply a range of quantitative techniques (e.g., tradeoff analysis across domains and other engineering disciplines, logistics, acquisition, testing & evaluation, and conduct empirical analysis within the domains of human systems integration. They will be able to apply, at the right place and at the right time, these analytical methods and tools in both field and laboratory settings within the context of the defense acquisition process.

12. The officer must have the ability to use and understand human systems integration in problem solving and analysis efforts specifically as they relate to existing and proposed DON/DOD weapons systems.

13. The officer must be capable of understanding and evaluating the utility of the human systems integration currently employed by DON/DOD.

14. The officer must understand the human systems integration system from its inception as fiscally unconstrained defense guidance to constrained implementation resulting from congressional authorization and appropriation and analyze the impact on DON/DOD programs and policies.

REVIEWED: _____ [OPNAV N15] 4/11/2013 [DATE]

APPROVED: _____ J. E. TIGHE, RDML, USN, INTERIM PRESIDENT, NPS 10 May 13 [DATE]

FINAL APPROVAL: _____ [OPNAV N1] 22 July 13 [DATE]