CDR Kowalski to Announce First New Subspecialty Code Available Immediately After Graduation

CDR Keith D. Kowalski, Chief of Naval Operations Assessment Division (N81) addresses the Operations Analysis Colloquium, Tuesday, November 13, at 12:15 pm in Chauvenet 117. Midshipmen are welcome to attend.

The new 4200E subspecialty code will identify junior officers who have the analytical skills and training for certain shore billets that involve analytical studies important to the future of the U.S. Navy. Midshipmen with mathematics (SMA) or quantitative economics (SQE) majors can easily meet the requirements for this code, which can be awarded as soon as they graduate.

CDR Kowalski will also discuss the role of officer analysts in the Navy.

Several members of the USNA Mathematics Department faculty work in Operations Analysis, Simulation and Modeling, or Statistics. Among them are Prof. Fowler, CDR Modisette, Prof. Mylander, Prof. Pierce, Prof. Sanders, and Prof. J. Turner.

The picture on the other side of this sheet is from a naval tactical simulation program Prof. Sanders uses.

One of the original problems in the (then) new field of Operations Analysis (or Operations Research) was to determine the optimal deployment of destroyers to protect convoys in World War II.

Quick problem: If you paint each of the six faces of a cube either blue or gold, how many different patterns can you make? (Two cubes each with 1 blue and 5 gold faces don’t count as different, because you can’t tell them apart after you move them.)

Last issue's problem: Can you find 4 distinct positive integers such that the sum of any 3 of them is a square?

This is an old problem of Diophantus. Let your numbers be a, b, c, and
d, with $a+b+c=s^2$, $a+b+d=t^2$, $a+c+d=u^2$, and $b+c+d=v^2$. Let $n$ be $s^2 + t^2 + u^2 + v^2 = 3(a+b+c+d)$. Then $a = n/3 - v^2$, $b = n/3 - u^2$, etc. So pick any 4 distinct squares and subtract each one from one-third their sum. You have to experiment a bit to get squares that add up to a multiple of 3 and give you four positive integers, but that’s not too hard. If you start with $8^2$, $9^2$, $10^2$, and $11^2$, you get 1, 22, 41, and 58.

Visit the Mathematics Department web site at http://www.usna.edu/MathDept/website/index.htm