

Navy Nuclear Field

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I have chosen to write my senior project paper on the United States Navy's nuclear field (NF) because I have a contract to enter into the nuclear field upon graduation from high school. Due to the top secret nature of the job, it was difficult to find a professional to shadow. Since there are no naval bases in Pennsylvania, I began my search for a mentor at the same office as my recruiter, MA² Savannah Dickey, in the Monroeville Mall. I was surprised and delighted to find that EM² Ed Biondo is currently serving in the nuclear field as an electricians mate (EM). He agreed to allow me to shadow. While shadowing, I did not get the opportunity to see firsthand what life on a ship was like or how his actual job was performed. However, EM² Ed Biondo brought materials from the ships he served and spent the day telling me descriptions of his typical work day, answering questions I had about the work environment, and introducing me to the subject matter I would need to master to become an effective seaman as well as excel in the Navy's nuclear field. While in the office, I also learned that your specific career path in the Navy is not your only responsibility. Recruiting, professionalism, commitment to excellence in any job that is done, and representing the Navy as a whole are just as important as excelling in your particular career. To emphasize this, EM² Ed Biondo brought me with him to discuss the benefits of joining the Navy with a potential future seaman and his family at their home in Manor, Pennsylvania. I was not only brought along as part of my project shadowing, but also as a point of reference to the family. I explained the process one needs to go through to enter the Navy and my specific experiences thus far.

The Navy's Nuclear Field has three careers associated with it; Machinist's Mate (MM), Electrician's Mate (EM), and Electronics Technician (ET). A Navy MM is responsible for the repair and maintenance of the nuclear reactor aboard the ship. Almost all large ships such as carriers and submarines operate from nuclear power, thus creating a high demand for personnel qualified in the nuclear field. A navy EM is responsible for testing, maintaining, and repairing electrical elements to the nuclear reactor. Specific jobs that an EM must perform include repairing circuits, motors, cables, and other equipment related to the power distribution of the reactor. Materials that EM² Ed Biondo brought to work the day of the shadowing gave detailed information on the job and what it entailed. Also, as an EM himself, EM² Ed Biondo was able to account for the descriptions in the books with personal experiences. A navy ET is responsible for interpreting schematic diagrams and testing equipment to isolate and correct errors in the electrical systems. All three careers overlap in some responsibilities as attention to detail is very important; when dealing with a nuclear reactor there is no room for error.

The working conditions in the nuclear field are difficult to describe because they vary largely based on the type of ship one is on, whether the country is at war, and the rank of the individual. According to EM² Ed Biondo, work aboard a carrier is similar to a 40 hour work week. One must wake up, perform his duties, and is free for the remaining time aboard. Hours are not flexible as the ship is on a constant timetable and there is limited personnel assigned to each duty. The workplace also varies. A NF seaman may work aboard a carrier or a submarine. Carriers are large ships used to launch and land airplanes and helicopters and are the heart of America's naval combat team. Submarines come in various sizes and classes for specific jobs varying from reconnaissance to attack.

Interaction with coworkers is almost mandated as it is necessary to cooperate with other job fields to ensure proper running and maintained of the reactor. Close living conditions and long periods of time out to sea force a seaman to bond with his shipmates.

Education and training for the nuclear field is extremely difficult. In order to request entrance into the nuclear field one must score extremely high on his/her ASVAB, the armed service aptitude test. After going through boot camp in Great Lakes, Illinois for nine weeks, the seaman attends an A school in Charleston, South Carolina. Seaman wishing to become an MM needs to stay for 3 months while prospective EM and ET seaman need to stay for 6 months. While in A school, seaman will learn basic mathematics, physics, thermodynamics, mechanical theory, and a myriad of other skills needed to perform their jobs. College credits for completion of these courses are awarded. Seamen who complete the entire program graduate 9 credits shy of a degree in nuclear engineering with concentration on nuclear propulsion. After completing A school, seaman then attend the country's hardest nuclear power program at the Navy Nuclear Power School, which is also located in Charleston. Seaman will learn advanced physics and chemistry as well as further instruction on how to perform their jobs. Ed Biondo accounted for the schools difficulty. He described it as highly competitive and extremely difficult. Following Nuclear Power School, seamen then move on to a prototype reactor for hands on application of what they have learned as well as testing to decide how effective a seamen is in during high stress situations; the Navy cannot afford an inadequate sailor handling a nuclear reactor in an emergency situation. Finally after nearly 18 months of instruction, qualified nuclear field seaman are produced. There is no

cost to the sailor for this education, and the sailor receives pay based on his/her rank from day one of boot camp.

There are a great number of personal qualifications to enter into the Navy's nuclear field. One must be a good student of science and math as well as be able to perform well under stress. The ability to learn quickly and not make a lot of mistakes is also necessary as the Navy will be putting a typical 4 year college program into a seaman's head in 18 months. To be considered for the program one must have at least a 65 on their ASVAB along with line score qualifications, no criminal background, and a clean credit check. Family backgrounds are also considered and anyone found to have links persons outside the country is investigated. Applicants must also meet specific BMI and other physical requirements to join the Navy, so athleticism is encouraged. Specific portions of the physical test such as the timed 1.5 mile run mandate physical fitness prior to joining.

The career outlook in the navy nuclear field is extremely promising. Salary pay is paid bi-weekly and is based upon rank. In the Navy, enlisted sailors are ranked on a scale from E1-E10. Most sailors begin at the E1 pay grade, but prospective NF sailors begin at E3. The E3 pay grade begins salary at \$1588+/month plus full benefits. When one takes into account that the seaman has no debt and housing and living allowances are also given separate from pay this is an extremely generous salary. Upon completion of A school the sailor receives his/her bonus, typically around \$20,000-\$25,000+, and may also test for E4. Ed Biondo suggests the nuclear field to prospective career sailors as it is easier to climb rank and often times faster as well. E4 pay grade has a salary of \$1750+/month. To conclude, within the first year of service, a seaman in the nuclear field

will be earning \$21,000+/ year plus full medical benefits and living expenses paid for by the Navy. Jobs are in high demand and thus, re-enlistment bonuses after first term are extremely high, usually \$80,000-\$120,000. There are no local jobs for the Navy nuclear field, but sailors typically get the choice of where they serve for their first term. Should a sailor decline the re-enlistment bonus, jobs relating to the nuclear field are numerous and high paying. Westinghouse and similar companies are also in need of persons qualified in the same areas as sailors in the nuclear field and offer respectable salaries to those who have worked in the Navy because it is difficult to find qualified personal and hands on experience in an employee.

Lifestyle changes for me are going to be drastic. I leave for boot camp on July 21, 2009 and I am told to leave all of my possessions at home and they'll ship what clothes I have on home upon arrival. I then will go through 9 weeks of physical training, discipline, basic classes of seamanship(i.e. what to do when there is a fire, when the ship is sinking, etc.), and Navy "character building". After that my life will be similar to a typical college student for a year and a half. I will have class all day, like a high school student instead of a college student, but will be paid a good salary and get my degree faster than anyone I know. My research into this subject matter was very thorough as I researched it specifically before I joined. I am planning on pursuing this career.