



NAVAL POSTGRADUATE SCHOOL

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MBA PROFESSIONAL REPORT

**Defining the Training Requirements for an Individual Enlisted Sailor
at Fleet Readiness Center Mid-Atlantic, Potential Issues, and
Recommendations**

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 December 2012**

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**DEFINING THE TRAINING REQUIREMENTS FOR AN INDIVIDUAL
ENLISTED SAILOR AT FLEET READINESS CENTER MID-ATLANTIC,
POTENTIAL ISSUES, AND RECOMMENDATIONS**

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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
December 2012**

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ABSTRACT

Data was collected from all available sources to determine what the training requirements would be for an individual enlisted sailor at Fleet Readiness Center (FRC) Mid-Atlantic. This called for collecting data from the command and from sources available at Naval Postgraduate School.

Navy-wide training requirements were collected and FRC Mid-Atlantic collected data on qualifications, licenses and medical training required by all rates within their command. The data was received in its raw form and the time to complete each requirement from months or weeks was converted into hours per year. I assumed that each individual had an average of 19 days per month to be trained and that training would last eight hours per day. The training was divided into four categories: Navy-wide, Qualifications, Licenses, and Medical.

Navy-wide and medical training consumed the least amount of time. Three specific rates are required to do more training than the other rates at the command. In particular, the Aviation Support Equipment Technician (AS) is required to complete over 36,000 hours of training combined. This amount of training is of great concern to the command leadership, considering an individual only has a little over 1,800 hours in a given year to complete assigned training.

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LIST OF ACRONYMS AND ABBREVIATIONS

AD	Aviation Machinist Mate
AE	Aviation Electricians Mate
AM	Aviation Structural Mechanic
AO	Aviation Ordnanceman
ABH	Aviation Boatswains Mate - Aircraft Handling
AS	Aviation Support Equipment Technician
AT	Aviation Electronics Technician
AZ	Aviation Maintenance Administrationman
CDI	Collateral Duty Inspector
FRC	Fleet Readiness Center
LS	Logistics Specialist
OJT	On the Job Training
QAR	Quality Assurance Representative
2M	Micro-Miniature

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EXECUTIVE SUMMARY

Together with CDR Richard Fairchild and his staff at Fleet Readiness Center Mid-Atlantic, I collected data on the training requirements for nine individual ratings, Aviation Boatswains Mate-Aircraft handling (ABH), Aviation Machinist Mate (AD), Aviation Electricians Mate (AE), Aviation Structural Mechanic (AM), Aviation Ordnanceman (AO), Aviation Support Equipment Technician (AS), Aviation Electronics Technician (AT), Aviation Maintenance Administrationman (AZ), and Logistics Specialist (LS). I divided the training requirements into four categories, Navy-wide, Qualifications, Licenses, and Medical based upon the data that was collected. I made several assumptions to include, an eight-hour work day and an average of 19 days available in a month for a total of 228 days and 1,824 hours available for an individual to be trained in a year. Collateral duty inspector (CDI) and quality assurance representative (QAR) training consume a median time of four hours a day. Time spent working on CDI and QAR training is productive, since the person getting qualified is actually doing work on equipment to complete the training. When all four categories of training are combined there is a total of more than 62,000 hours of training. This encompasses all nine ratings and has some overlap amongst them.

When the training is compiled by rate the AS rating leads with a total of 35,122 required training hours. It would take over 21 years for an AS to complete this amount of training given the assumptions made for this study. The AD and AM ratings see a significant amount of training requirements as well taking ten and nine years, respectively, to be fully qualified. See Figure 4 for more details.

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I. INTRODUCTION

A. BACKGROUND

It could be argued that the success of any institution is largely due to the training and education of its constituents. The same can be said for the United States Navy. Since the Navy was born in 1775 training has been instrumental in accomplishing great victories in our nation's wars and proved invaluable during Humanitarian Assistance and Disaster Relief operations world wide. (Early, 2009) Training has been valuable to the aviation community where the slightest mistake could cause a catastrophe. This report highlights training requirements for nine individual ratings and how much time they have to complete them.

As our military continues to advance technologically, the importance of training our enlisted technicians grows in parallel (Koopman & Golding, 1999). This couldn't be more apparent than in the aviation community and the training that is required of the technicians assigned to Fleet Readiness Center Mid-Atlantic in Oceana Virginia. The following rates were for chosen for this study based on the training data available at the command; Aviation Boatswains Mate-Aircraft handling (ABH), Aviation Machinist Mate (AD), Aviation Electricians Mate (AE), Aviation Structural Mechanic (AM), Aviation Ordnanceman (AO), Aviation Support Equipment Technician (AS), Aviation Electronics Technician (AT), Aviation Maintenance Administrationman (AZ) and Logistics Specialist (LS).

It is important to understand the assumptions made in calculating the collected data. Following the discussion of the assumptions briefly describes areas of training within the four categories of Navy-wide, Qualifications, Licenses, and Medical. Finally, I have made recommendations on how to improve the process for particular rates that have training requirements greater than 15,000 hours of total training. See Figure 4.

B. ASSUMPTIONS

Assumptions were made regarding the amount of training time available for an individual in a given year. These numbers were also used to calculate the number of

hours required to complete individual qualifications and certifications. The following assumptions were made:

- Training is not conducted on weekends; 52 weeks * two days/week equals 110 days.
- Number of days not available due to holiday stand down is 20 days.
- Number of federal holidays observed is seven, (not including Christmas and New Years).
- Training days available per year: $365 - 110 - 20 - 7 = 228$
- Average number of training days available per month: $228 / 12 = 19$
- Amount of time available per day is eight hours.
- Number of hours available per year is eight hours * 228 available training days = 1824 hours per year.¹

According to data collectors at Fleet Readiness Center Mid-Atlantic, on the job training (OJT) can consume anywhere from two to six hours per day. I used the median value of four hours per day for OJT. All Collateral Duty Inspector (CDI) and Quality Assurance Representative (QAR) qualifications and certifications can be accomplished with OJT. Thus, the calculation for CDI and QAR qualifications is 19 (average number of available training days in a month)*(number of months to complete)*(four hours of training per day). This applies only to CDI and QAR qualifications in the Qualifications section of the report. See Table 2.

Additionally, a weighting factor of 0.25 was applied to all Aviation Machinist Mates (AD) test cell qualifications since no more than 25 percent of the division will need to complete this qualification. No other special weighting factors were necessary.

In the qualifications data provided for analysis there were six qualifications that did not specify a particular rate. These six qualifications were only used in the calculation of total hours required to complete qualifications by all rates combined, not in the calculation for individual rates. See Table 2 in the Appendix for more detail.

¹ The most common work year is 2,080 hours, calculated by multiplying 40 hours a week by 52 weeks a year (Grace, 2012). This calculation assumes no vacation is taken nor holidays observed during the year.

A majority of qualifications took between two and 12 months and the formula to calculate number of hours to complete a training requirement is (average number of available training days in a month)*(number of months to complete)*(eight hours in day). Note the formula above uses hours of training per day, or four hours, rather than the total number of hours in a day.

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II. NAVY-WIDE TRAINING

With the exception of Physical Fitness training, Navy-Wide training requirements were compiled from the Naval Postgraduate School list of annual required training. Each category is described briefly with notes on assumptions made in calculating expected completion time. See Table 1 in the Appendix for individual categories and estimated completion times.

A. PHYSICAL FITNESS

In accordance with OPNAV instruction 6110.1J every Commanding officer is required to incorporate at a minimum of 150 minutes per week or 2.5 hours per week. Based on previous assumptions, an individual sailor will be with their command for approximately 45 work weeks per year. This data was used to calculate the yearly requirement for an individual by multiplying 2.5 by 45 weeks in a year for a total of 112.5 hours. Commanding Officers are held responsible to ensure physical fitness is accounted for in daily routine, and it is the responsibility of the individual to ensure they get exercise (Ferguson, 2011).

B. PREVENTION OF SEXUAL HARASSMENT AND SEXUAL ASSAULT

There are two instructions that cover these issues in the Navy, SECNAV instruction 5300.26D (Navas 2005b), covers sexual harassment and SECNAV instruction 1752.4A (Navas, 2005a), gives guidance for preventing sexual assault. Neither of these instructions give specific guidance on training other than to state that training programs are in place at all levels of the Department of the Navy. Four hours of yearly training is based upon 2012 training held at Naval Postgraduate School. See Table 1 in the Appendix

C. SECURITY AWARENESS

Security Awareness training is computer-based training on how to be vigilant in their everyday life. The training can be accomplished through Navy Knowledge Online and is recommended to take 1 hour (Department of the Navy, 2012).

1. Anti-Terrorism and Force Protection

Anti-Terrorism and Force Protection training looks more specifically at the individual in the workplace or traveling for work. The website recommended time to complete is 1 hour (Department of the Navy, 2012).

2. Information Assurance

Information Assurance training focuses on the professional use of computers in the workplace and avoiding electronic spillage and the careless use of Personal Identifiable Information. This computer based training takes 45 minutes or 0.75 hours (Department of the Navy, 2012).

3. Electronic Data

This training covers the Privacy Act of 1974 as well as the use of removable media and electronic devices on a DoD facility. The time required to complete this training is 1 hour (Department of the Navy, 2012).

4. Phishing and Other Scams

Phishing and other Scams training covers the topics of e-mail phishing and other scams executed through spam e-mail. This training takes 30 minutes or 0.5 hours to complete (Department of the Navy, 2012).

III. QUALIFICATIONS

There are 113 different qualifications for all nine of the rates covered in this report. (Table 2) For ease of organization, I have segmented qualification training into Micro-Miniature (2M), On the Job Training (OJT) and other. It is important to separate these first two from other training because 2M training is done in a school house away from the parent command, and OJT training involves hands-on equipment while getting qualified. It is assumed that other training is completed in a class room at the command. All data used for calculations in this section can be found in Table 2 of the Appendix.

A. 2M – MICRO-MINIATURE

Micro-miniature training consists of three separate levels: technician, repair and recertifier. Each requires school-house training, which is 8 hours a day, and 5 days a week. Technician and recertifier take two weeks to complete for a total of 80 hours each, while repair takes 1 month to complete or 152 hours. (19 days *eight hours each day) Only Aviation Electronic Technicians (AT), and Aviation Electricians Mates (AE) are required to complete these trainings. See Table 2 of the Appendix (Ingram, 2011).

B. ON THE JOB TRAINING (OJT)

Of the 113 separate qualifications for the nine rates, 58 can be completed through OJT. These 58 qualifications are divided between Collateral Duty Inspector (CDI) and Quality Assurance Representative (QAR). CDI and QAR only apply to the following rates, Aviation Machinists Mate (AD), AE, Aviation Structural Mechanic (AM), Aviation Ordnanceman (AO), Aviation Support Equipment Technician (AS), AT and Aviation Administrationman (AZ). As previously mentioned in the assumptions, time spent working on these qualifications is doubly productive and calculated differently than other qualification training. Individual sailors are able to earn their qualifications while working on equipment. The amount of productive qualification varies by rate:

- AD 4,617 hours
- AE 2,508 hours
- AM 2,280 hours

- AO 2,280 hours
- AS 6,460 hours
- AT 4,408 hours
- AZ 76 hours

The OJT for the rates listed above is used to calculate the total amount of qualification training required by each rate, see Figure 1.

C. OTHER

All other training listed in Table 2 varies widely. These other qualifications include non-rate specific requirements such as, Duty driver and Petty Officer of the watch. There are a large number of rate specific requirements like Tires and Wheels for the AM rate and Fuel cell training for the AD rate as well. These other training requirements account for more than half the amount of time required to complete qualifications for eight of the nine ratings. See Figure 1.

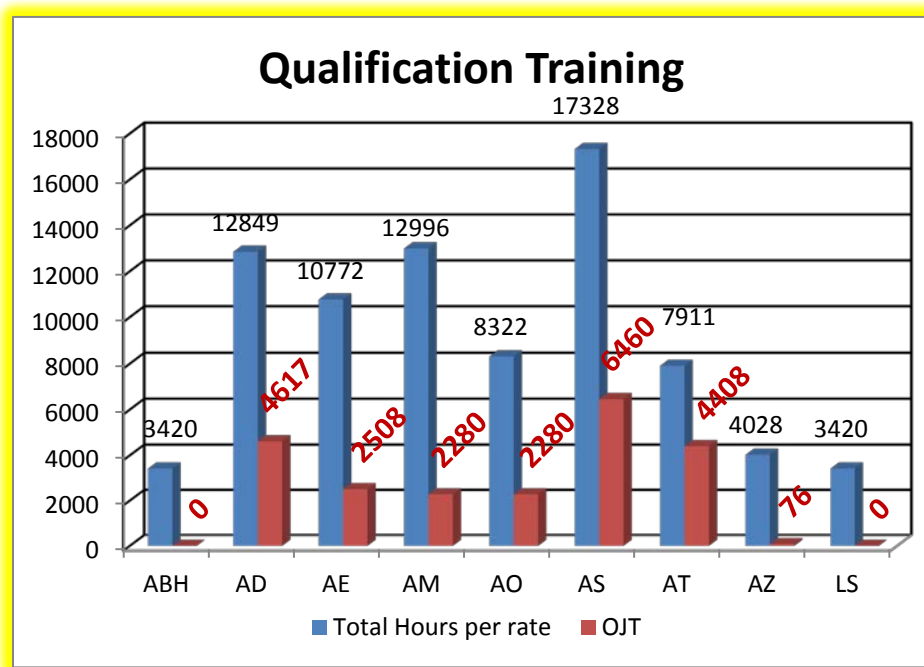


Figure 1. Qualification training

IV. LICENSES

Of the nine rates discussed in this report, only seven are required to complete license training. The AT and AZ ratings do not have a license training requirement. Passenger Bus and Forklift requirements are applicable to nearly all seven rates and are briefly described below. For details on other license training requirements, see Table 3 in the Appendix.

A. PASSENGER BUS

There are two passenger bus licenses to earn. One is for 37 passengers and the other is for 44 passengers. According to the data provided select rates can earn the 37 passenger bus license. The 44 passenger bus license can only be earned by an AD, AS or Logistics Specialist (LS). Each license requires seven days of training for a total of 54 hours each (seven days *eight hours a day). See Table 3 for details.

B. FORKLIFT

Table 2 in the Appendix shows there are seven different forklift licenses that can be earned by six different ratings. Each license uses two hours of OJT per day. Each license takes one month to complete, or 19 (average number of days available per month) *(two hours a day) for a total of 38 hours. Every individual must get qualified on each requirement. The seven categories and associated rates are as follows:

- Fork Lift 4K electric AM, AS
- Fork Lift 4K gas AM, AS
- Fork Lift 6K electric AS
- Fork Lift 6K gas AS, LS
- Fork Lift 6K AS
- Fork Lift gas AO
- Fork Lift thru 15K AD, AE, AS

C. OTHER

The largest portion of license training is on equipment used specifically to complete maintenance. These requirements include a wide variety of licenses operating electric and diesel power supplies, cranes, trucks, and hydraulic equipment.

For a complete list of licenses and associated completion times refer to Table 3 in the Appendix.

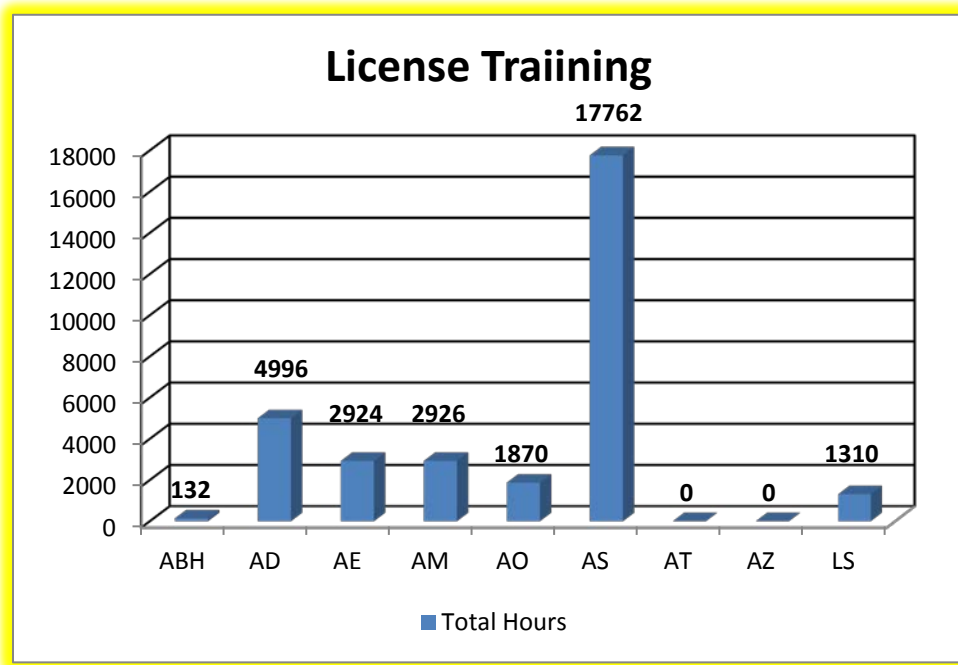


Figure 2. License training

V. MEDICAL

Medical training is the final category evaluated. A detailed listing of the individual training requirements is listed in Table 4 of the Appendix.

Among the four different categories of training, medical is the least time consuming. The minimum training for every rate is 18 hours. AM's and AS's have the longest medical training requirements among all nine rates with 37 and 32 hours of required training respectively. These training requirements are followed closely by AD's with 29 hours and AE's, AO's with 26 hours of required training. See Figure 3.

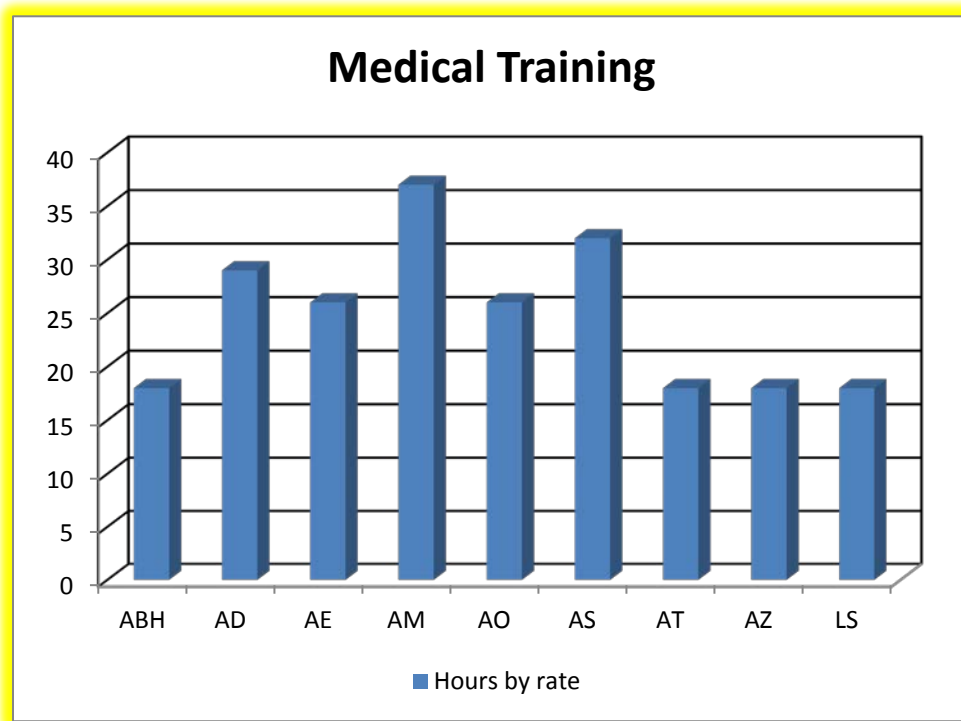


Figure 3. Medical training

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VI. DISCUSSION AND RECOMMENDATIONS

This chapter has two major sections. The first section discusses the amount of training an individual has and focuses on the three ratings with over 15,000 hours of total training required. The second section provides recommendations on how to reduce the requirements for the three ratings with over 15,000 hours of required training. See Figure 4 for total required training and Figure 5 for total non-OJT required training.

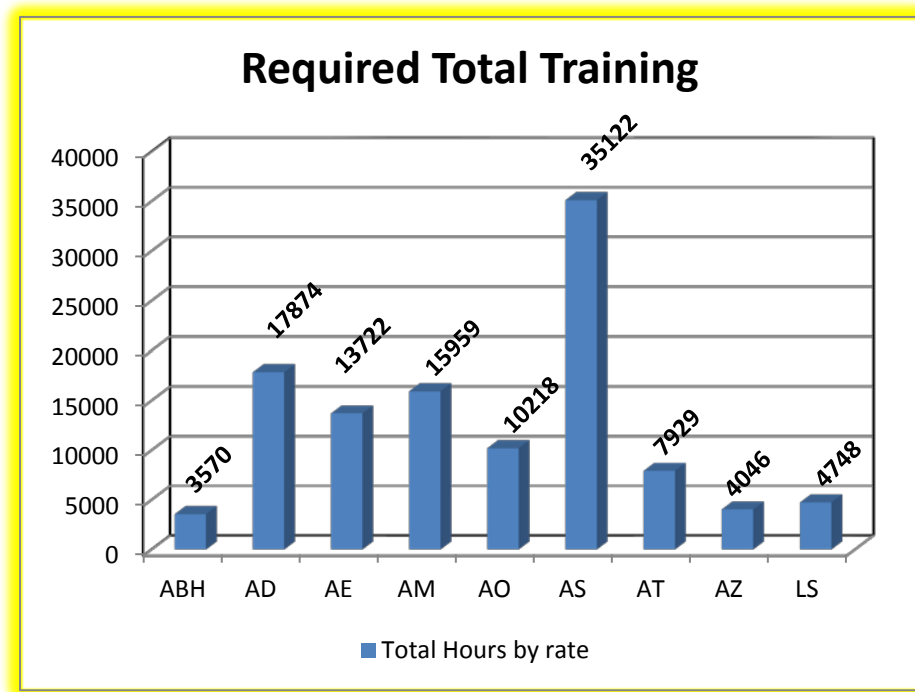


Figure 4. Total required training by rate

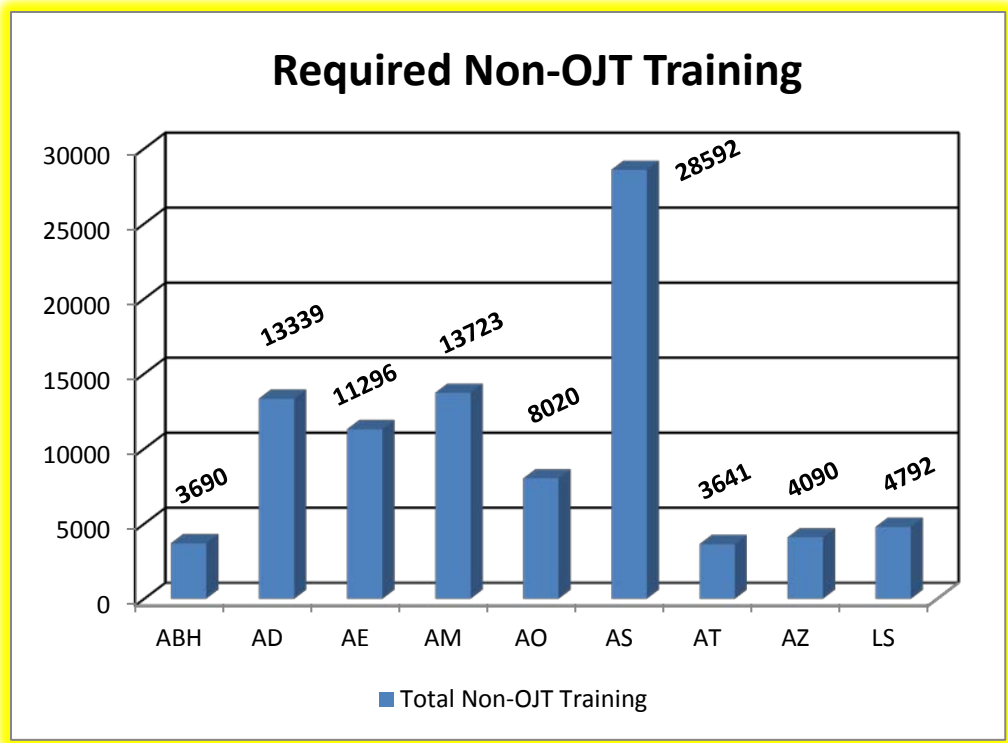


Figure 5. Total non-OJT training required

LETTER DISCUSSION

Each individual has a maximum of 1,824 hours available to accomplish assigned tasks or training. After completing navy-wide and medical annual requirements there is a little over 1650 hours available to accomplish qualification and license training, not to mention any command or other emergent requirements, see Figure 6. Assuming an individual was able to dedicate eight hours day for 228 days a year to completing their training requirements, AD’s and AM’s would consume 10 and nine years, respectively getting qualified. An AS would need over 21 years to complete all of his or her requirements. The other rates have training requirements that range between two and eight years to complete.

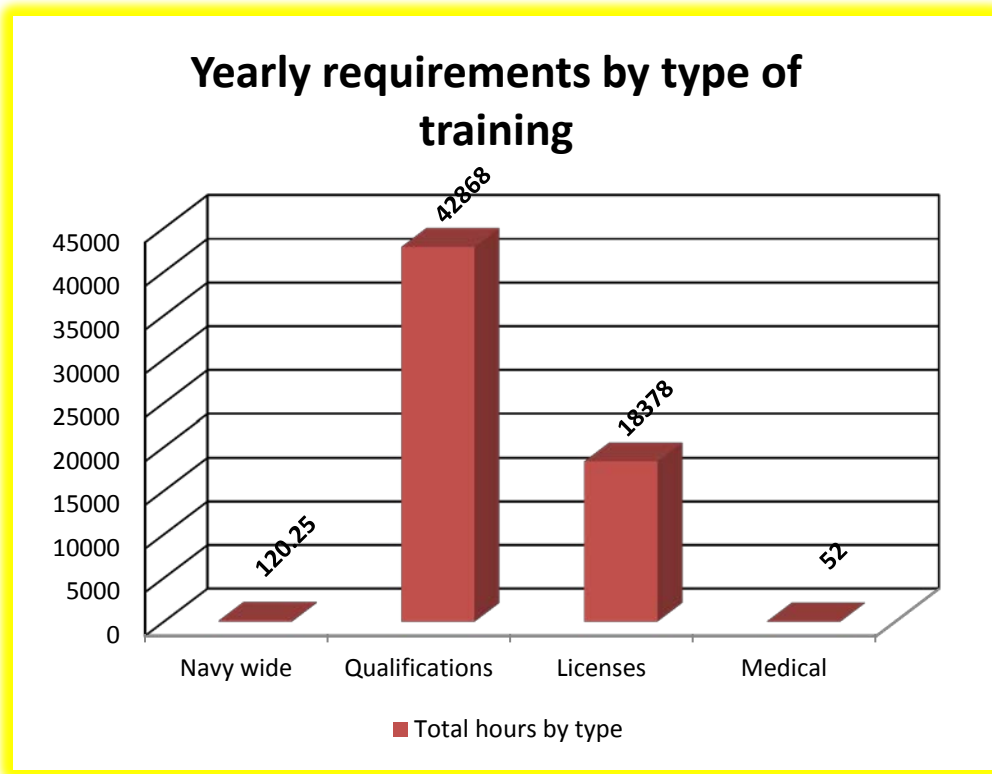


Figure 6. Training requirements by type

RECOMMENDATIONS

It might be beneficial to look at the rates most affected. For example, re-examine the requirements of the AD, AM and AS ratings and determine what training might be consolidated, or perhaps eliminated. Is it possible to move some of these requirements into the training received at the A or C schools before being sent to the fleet? How many of the requirements listed in Table 2 and Table 3 of the Appendix overlap and can be combined to eliminate excess requirements?

Another option might include hiring civilian contractors. This would allow FRC Mid-Atlantic to establish long-term corporate knowledge and reduce maintenance personnel turnover. One possible concern would be the cost of hiring the contractors. Addressing this concern would require an in-depth cost-benefit analysis which is beyond the scope of this project.

This report has found the requirements for AS, AD, and AM ratings to be quite large. Whatever can be done should be done to reduce the requirements placed on individual sailors in these rates. This would allow sailors to spend more time on producing output, and reduce the time required to get qualified in their rate.

APPENDIX

The following four tables make up the data used for this report and are separated by type of training.

Table 1. **Navy-wide training**

Training		Hours per year
Information Assurance		0.75
Electronic Data		0.5
Security Awareness		1
Anti Terrorism		1
Phishing and Other scams		0.5
Prevention of sexual Harassment		4
Physical Fitness=2.5*52		112.5
Total		120.25

Table 2. **Qualification training**

<u>COURSE</u>	<u>WHO</u>	<u>HOW LONG IT TAKES</u>	<u>Converted to Hours per year</u>
CERTIFICATION: CERTIFIED LCI (FRCOCE)	AD, AO, AT, AM	1 DAY	8
QPT: WORK CENTER 450 TECHNICIAN OJT	AD, AE	4 MONTHS	304
QUALIFICATION: 2M MICROMINIATURE TECHNICIAN (FRCOCE)	AT, AE	2 WEEKS	80
QUALIFICATION: 2M TECHNICIAN MINIATURE REPAIR (FRCOCE)	AT, AE	1 MONTH	152
QUALIFICATION: 2M TECHNICIAN RECERTIFIER (FRCOCE)	AT, AE SELECT	2 WEEKS	80
QUALIFICATION: 400 DIVISION QAR (FRCOCE)	AD SELECT	3 MONTHS	57
QUALIFICATION: 410 CDI (F404) (FRCOCE)	AD	4 MONTHS	304
QUALIFICATION: 411 CDI (FRCOCE)	AD	2 MONTHS	152
QUALIFICATION: 412 CDI (FRCOCE) COLLATERAL DUTY INSPECTOR	AD	8 MONTHS	608
QUALIFICATION: 413 AFTERBURNER MODULE F404 GE-400/402 (FRCOCE)	AD	9 MONTHS	1368
QUALIFICATION: 413 CDI (F404 A/B) (FRCOCE)	AD	8 MONTHS	608
QUALIFICATION: 414 CDI (FRCOCE)	AD	4 MONTHS	304
QUALIFICATION: 415 CDI (FRCOCE)	AD	3 MONTHS	228
QUALIFICATION: 41U CDI (FRCOCE)	AD	3 MONTHS	228
QUALIFICATION: 450 CDI (FRCOCE)	AD	7 MONTHS	532
QUALIFICATION: 460 CDI (FRCOCE)	AD	3 MONTHS	228
QUALIFICATION: 470 CDI (FRCOCE)	AD	4 MONTHS	304
QUALIFICATION: 48 T OPERATOR (FRCOCE)	AO,	1 DAY	8
QUALIFICATION: 500 DIVISION QAR (FRCOCE)	AM	1 MONTH	76

QUALIFICATION: 51A/B CDI (FRCOCE)	AM	5 MONTHS	380
QUALIFICATION: 51C CDI (FRCOCE)	AM	3 MONTHS	228
QUALIFICATION: 51E CDI (FRCOCE)	AM	2 MONTHS	152
QUALIFICATION: 51F CDI (FRCOCE)	AM	5 MONTHS	380
QUALIFICATION: 51G CDI (FRCOCE)	AM	3 MONTHS	228
QUALIFICATION: 51G ON THE JOB TRAINING SYLLABUS (FRCOCE)	AM	2 MONTHS	152
QUALIFICATION: 52A/B CDI (FRCOCE)	AM	3 MONTHS	228
QUALIFICATION: 530 CDI (FRCOCE)	AM	6 MONTHS	456
QUALIFICATION: 600 DIVISION QAR (FRCOCE)	AT, AE	2 MONTHS	152
QUALIFICATION: 60A CDI (FRCOCE)	AT	3 MONTHS	228
QUALIFICATION: 610/A/B/C CDI (FRCOCE)	AT	5 MONTHS	380
QUALIFICATION: 62A CDI (FRCOCE)	AE	4 MONTHS	304
QUALIFICATION: 62B CDI (FRCOCE)	AE	4 MONTHS	304
QUALIFICATION: 62C CDI (FRCOCE)	AE	3 MONTHS	228
QUALIFICATION: 62D CDI (FRCOCE)	AE	3 MONTHS	228
QUALIFICATION: 62E CDI (FRCOCE)	AE	6 MONTHS	456
QUALIFICATION: 63D CDI (FRCOCE)	AT	5 MONTHS	380
QUALIFICATION: 63E CDI (FRCOCE)	AT	8 MONTHS	608
QUALIFICATION: 640/C/E/I CDI (FRCOCE)	AT	7 MONTHS	532
QUALIFICATION: 64D CDI (FRCOCE)	AT	7 MONTHS	532
QUALIFICATION: 65B/C CDI (FRCOCE)	AT	7 MONTHS	532
QUALIFICATION: 67D CDI (FRCOCE)	AT	3 MONTHS	228
QUALIFICATION: 69B CDI (MICRO) (FRCOCE)	AT, AE	2 MONTHS	152
QUALIFICATION: 69B CDI (MINI) (FRCOCE)	AT, AE	2 MONTHS	152
QUALIFICATION: 69C CDI (FRCOCE)	AT, AE	6 MONTHS	456
QUALIFICATION: 69H CDI (FRCOCE)	AT, AE	1 MONTH	76
QUALIFICATION: 700 DIVISION QAR (FRCOCE)	AO	2 MONTHS	152
QUALIFICATION: 71A CDI (FRCOCE)	AO	9 MONTHS	684
QUALIFICATION: 71B CDI (FRCOCE)	AO	5 MONTHS	380
QUALIFICATION: 71C CDI (FRCOCE)	AO	8 MONTHS	608
QUALIFICATION: 71D CDI (FRCOCE)	AO	4 MONTHS	304
QUALIFICATION: 731 CDI (FRCOCE)	AO, WEAPON S	2 MONTHS	152
QUALIFICATION: 900 DIVISION QAR (FRCOCE)	AS	2 MONTHS	152
QUALIFICATION: 91A CDI (FRCOCE)	AS	7 MONTHS	532
QUALIFICATION: 91B CDI (FRCOCE)	AS	7 MONTHS	532
QUALIFICATION: 92A CDI (FRCOCE)	AS	6 MONTHS	456
QUALIFICATION: 92B CDI (FRCOCE)	AS	6 MONTHS	456
QUALIFICATION: 92C CDI (FRCOCE)	AS	10 MONTHS	760
QUALIFICATION: 92C/820 CDI (FRCOCE)	AS	2 MONTHS	152
QUALIFICATION: 92D CDI (FRCOCE)	AS	7 MONTHS	532
QUALIFICATION: 930 CDI (FRCOCE)	AS	7 MONTHS	532
QUALIFICATION: 940 CDI (FRCOCE)	AS	5 MONTHS	380
QUALIFICATION: 950 CDI (FRCOCE)	AS	7 MONTHS	532
QUALIFICATION: 970 CDI (FRCOCE)	AS	8 MONTHS	608
QUALIFICATION: 970/990 CDI (FRCOCE)	AS	6 MONTHS	456
QUALIFICATION: 980 CDI (FRCOCE)	AS	5 MONTHS	380
QUALIFICATION: A/E37T-26A GTC36-200 TEST CELL INSTRUCTOR/QUALIFIER (FRCOCE)	AD	1 MONTH	38

QUALIFICATION: A/E37T-26A GTC36-200 TEST CELL OPERATOR QUALIFICATION/CERTIFICATION (FRCOCE)	AD	11 MONTHS	209
QUALIFICATION: A/F32T-10B (JETI) F404-GE-400/402 TEST CELL INSTRUCTOR/QUALIFIER (FRCOCE)	AD	7 MONTHS	133
QUALIFICATION: A/F32T-10B (JETI) F404-GE-400/402 TEST CELL OPERATOR QUALIFICATION/CERTIFICATION (FRCOCE)	AD, AE	10 MONTHS	190
QUALIFICATION: A/F32T-6B (JETI) F404-GE-400/402 TEST CELL INSTRUCTOR/QUALIFIER (FRCOCE)	AD	7 MONTHS	133
QUALIFICATION: A/F32T-6B (JETI) F404-GE-400/402 TEST CELL OPERATOR QUALIFICATION/CERTIFICATION (FRCOCE)	AD, AE	11 MONTHS	209
QUALIFICATION: A/F32T-6B (JETI) F414-GE-400 TEST CELL INSTRUCTOR/QUALIFIER (FRCOCE)	AD	7 MONTHS	133
QUALIFICATION: A/F32T-6B/10B (JETI) F404-GE-400/402 TEST CELL OPERATOR QUALIFICATION/CERTIFICATION (FRCOCE)	AD, AE	5 MONTHS	95
QUALIFICATION: AIRCRAFT CONFINED SPACE ENTRY QUALIFICATION/CERTIFICATION (FRCOCE)	AD	4 MONTHS	152
QUALIFICATION: AIRCRAFT FUEL SURVEILLANCE ANALYSIS TECHNICIAN (FRCOCE)	AD, AE,	7 MONTHS	266
QUALIFICATION: ANALYSIS KIT HYDRAULIC CONTAMINATION (FRCOCE)	AM, AS,	5 MONTHS	760
QUALIFICATION: BASIC LIFE SUPPORT (BLS) (CPR/AED) INSTRUCTOR (FRCOCE)	ALL SELECT	3 MONTHS	456
QUALIFICATION: BASIC LIFE SUPPORT (BLS) (CPR/AED) INSTRUCTOR (FRCOCE)	ALL SELECT	3 MONTHS	456
QUALIFICATION: CATEGORY 3 CRANE OPERATOR (FRCOCE)	AT, AE, AS, AD, AO, AM	9 MONTHS	1368
QUALIFICATION: CERTIFIED AIRSPEED BLACKBELT (FRCOCE)	SELECT	18 MONTHS	2736
QUALIFICATION: CERTIFIED AIRSPEED GREENBELT (FRCOCE)	SELECT	9 MONTHS	1368
QUALIFICATION: CERTIFIED AS 101/YELLOWBELT (FRCOCE)	ALL	1 MONTH	152
QUALIFICATION: CERTIFIED AS 101/YELLOWBELT (FRCOCE)	ALL	1 MONTH	152
QUALIFICATION: CTPC/QAR (FRCOCE)	AZ	1 MONTH	76
QUALIFICATION: DTPL OJT (FRCOCE)	SELECT	4 MONTHS	304
QUALIFICATION: FRC MA FUEL CELL SAFETY OBSERVER/BACK-UP SAFETY OBSERVER (FRCOCE)	AD, AE	6 MONTHS	912
QUALIFICATION: FRCMA FUEL CELL AUTHORIZED ENTRANT (FRCOCE)	AD, AE	5 MONTHS	760
QUALIFICATION: FRCMA FUEL CELL AUTHORIZED ENTRANT SUPERVISOR DESIGNATION (FRCOCE)	AD, AE	2 MONTHS	304
QUALIFICATION: GAS TURBINE ENGINE TEST SYSTEMS QUALIFICATION (FRCOCE)	AD, AE	9 MONTHS	1368
QUALIFICATION: NAMP INDOC TRAINING (FRCOCE)	ALL	3 DAYS	3
QUALIFICATION: NAMP INDOC TRAINING (FRCOCE)	ALL	3 DAYS	3
QUALIFICATION: NONDESTRUCTIVE INSPECTION (NDI) CERTIFICATION (FRCOCE)	AM	1 MONTH	152
QUALIFICATION: PARTICLE COUNTER HYDRAULIC CONTAMINATION (FRCOCE)	AS, AD	4 MONTHS	608
QUALIFICATION: PODS HYDRAULIC CONTAMINATION (FRCOCE)	AS, AM, AD, AE	3 HOURS	3
QUALIFICATION: POOW AND APOOW (FRCOCE)	ALL	6 HOURS	6
QUALIFICATION: POOW AND APOOW (FRCOCE)	ALL	6 HOURS	6

QUALIFICATION: PPO, FIRE/SECURITY WATCH, AND DUTY DRIVER (FRCOCE)	ALL	6 HOURS	6
QUALIFICATION: PPO, FIRE/SECURITY WATCH, AND DUTY DRIVER (FRCOCE)	ALL	6 HOURS	6
QUALIFICATION: PRODUCTION CONTROL CHIEF (FRCOCE)	AM	3 WEEKS	120
QUALIFICATION: QUALIFICATION/CERTIFICATION HYDRAULIC CONTAMINATION CONTROL (FRCOCE)	AM, AS,	6 HOURS	6
QUALIFICATION: QUALITY ASSURANCE REPRESENTATIVE (QAR) BASIC QUALIFICATION (FRCOCE)	AD, AO, AT, AS	2 MONTHS	152
QUALIFICATION: SE INSTRUCTOR (FRCOCE)	AS	4 MONTHS	608
QUALIFICATION: TIRE AND WHEEL I LEVEL (FRCOCE)	AS, AM	4 MONTHS	608
QUALIFICATION: TIRE AND WHEEL O LEVEL (FRCOCE)	AS, AO	4 MONTHS	608
QUALIFICATION: TIRE/WHEEL (P/N 2605945) F/A-18A/B/C/D NOSE MOUNT CERTIFICATION (FRCOCE)	AM	4 MONTHS	608
QUALIFICATION: TIRE/WHEEL (P/N 2606071) F/A-18A/B/C/D MAIN MOUNT CERTIFICATION (FRCOCE)	AM	4 MONTHS	608
QUALIFICATION: TIRE/WHEEL (P/N 2611745) F/A-18E/F NOSE MOUNT CERTIFICATION (FRCOCE)	AM	4 MONTHS	608
QUALIFICATION: TIRE/WHEEL (P/N 2611991) F/A-18E/F MAIN MOUNT CERTIFICATION (FRCOCE)	AM	4 MONTHS	608
QUALIFICATION: TRAINED AIRSPEED BLACKBELT (FRCOCE)	SELECT	1 YEAR	1824
QUALIFICATION: TRAINED AIRSPEED GREENBELT (FRCOCE)	SELECT	7 WEEKS	280
QUALIFICATION: TRAINING PETTY OFFICER (FRCOCE)	SELECT	2 WEEKS	80
QUALIFICATION: WEIGHT HANDLING EQUIPMENT SUPERVISOR (FRCOCE)	AO	6 HOURS	6
QUALIFICATION: WELDING CERTIFICATION (FRCOCE)	AS, AM	3 WEEKS	120
		Total Hours per year	42868

Table 3. License training

<u>COURSE</u>	<u>WHO</u>	<u>HOW LONG IT TAKES</u>	<u>Converted to Hours per year</u>
LICENSE: 37 PASSENGER BUS, WHITE LICENSE (FRCOCE)	SELECT	7 DAYS	56
LICENSE: 44 PASSENGER BUS, WHITE LICENSE (FRCOCE)	LS, AS, AD	7 DAYS	56
LICENSE: 5 TON VEHICLE, WHITE LICENSE (FRCOCE)	AS	1 DAY	8
LICENSE: 65A102-J1 CORROSION CONTROL CART LICENSE (FRCOCE)	AS, AE, AD, AM	4 MONTHS	608
LICENSE: A/M24M-5 STATIC FREQUENCY CONVERTER (FRCOCE)	AS	4 MONTHS	608
LICENSE: A/M26M-3 LOX PURGE UNIT LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: A/M26U-14 OXYGEN SERVICING COMPRESSED GAS TRAILER (NEW) (FRCOCE)	AS	3 MONTHS	456
LICENSE: A/M26U-4B NITROGEN SERVICING UNIT, LICENSE (FRCOCE)	AS, AM, AD, AE	4 MONTHS	608
LICENSE: A/M27T-14 ELECTRIC HYDRAULIC	AS, AD, AE,	4 MONTHS	608

POWER SUPPLY (FRCOCE)			
LICENSE: A/M27T-15 DIESEL HYDRAULIC POWERED SUPPLY (FRCOCE)	AS, AD, AE, AM	4 MONTHS	608
LICENSE: A/M27T-6 HYDRAULIC TEST STAND LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: A/M32A-108 MOBILE ELEC PWR PLANT LICENSE (FRCOCE)	AS, AD, AM, ABH	4 MONTHS	608
LICENSE: A/M32C-17 AIR CONDITIONER LICENSE (FRCOCE)	AS,AO, AD, AE	4 MONTHS	608
LICENSE: A/M32C-21 AIR CONDITIONER LICENSE (FRCOCE)	AS, AO, AE,	5 MONTHS	760
LICENSE: A/M37M-11 HYDRAULIC FLUID PURIFICATION (FRCOCE)	AS,	4 MONTHS	608
LICENSE: A/M37M-2 FLUID PURIFIER LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: A/M42M-2A LIGHT CART (CILOP) LICENSE (FRCOCE)	AS, AD	4 MONTHS	608
LICENSE: A/S32A-37 TOW TRACTOR LICENSE (FRCOCE)	AS	3 MONTHS	456
LICENSE: A/S32A-44 1500 LBS A/C UTILITY CRANE LICENSE (FRCOCE)	AS, AM	3 MONTHS	456
LICENSE: A/S32A-45 MEDIUM RANGE TOW TRACTOR (FRCOCE)	AS, AD, AE, ABH, AO. WEAPONS, LS	4 MONTHS	608
LICENSE: A/S48M-3 SELF PROPELLED SERVICING PLATFORM (ELECTRIC) (FRCOCE)	AS	5 MONTHS	760
LICENSE: ACU-20/M AIR COMPRESSOR LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: DA-675/MSM LOAD BANK LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: ETU-110 ENGINE STAND (FRCOCE)	AS, AD	5 MONTHS	760
LICENSE: FORKLIFT 4K (ELECTRIC) (FRCOCE)	AS, AM	1 MONTH	38
LICENSE: FORKLIFT 4K (GAS) (FRCOCE)	AS, AM	1 MONTH	38
LICENSE: FORKLIFT 6K (ELECTRIC) (FRCOCE)	AS	1 MONTH	38
LICENSE: FORKLIFT 6K (FRCOCE)	LS	1 MONTH	38
LICENSE: FORKLIFT 6K (GAS) (FRCOCE)	AS, LS	1 MONTH	38
LICENSE: FORKLIFT GAS (FRCOCE)	AO	1 MONTH	38
LICENSE: FORKLIFT THRU 15K (FRCOCE)	AD, AE, AS	1 MONTH	38
LICENSE: HLU-196D/E BOMB HOIST LOADING UNIT (FRCOCE)	AS	4 MONTHS	608
LICENSE: MHAC-2AC-302-8 LIQUID COOLANT FILTERING UNIT LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: MSU-200 NAV (FRCOCE)	AS, AE, AD	5 MONTHS	760
LICENSE: NAN-2,2A,3 NITROGEN SERVICING UNITS & WALK AROUND BOTTLE (FRCOCE)	AS, AE, AD, AM	5 MONTHS	760
LICENSE: NC-10C LICENSE (FRCOCE)	AD, AS, AE, ABH	4 MONTHS	608
LICENSE: ST-1000 REFRIGERANT RECOVERY/RECYCLE UNIT LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: TMU-27/M LIQUID OXYGEN CART LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: TMU-70/M LOX SERVICING TRAILER LICENSE (FRCOCE)	AS	4 MONTHS	608
LICENSE: TRUCK, 5 TON, WHITE LICENSE	AO, AS, AD	7 DAYS	56

(FRCOCE)			
LICENSE: YELLOW LICENSE COMNAVAIRFORINST 4790/102 (FRCOCE)	AS, AM, AE, AD	8 DAYS	64
		Total Hours per year	18378

Table 4. **Medical training**

<u>COURSE</u>	<u>WHO</u>	<u>HOW LONG IT TAKES</u>	<u>Converted to Hours per year</u>
MEDICAL: FORKLIFT PHYSICAL	AD, AE	4 HOURS	4
MEDICAL: RESPIRATOR FITNESS TEST 1 YEAR (FRCOCE)	AD, AM, AO, AS,AT	2 HOURS	2
MEDICAL: FORKLIFT/MHE OPERATOR PHYSICAL	AD, AS, AM	4 HOURS	4
MEDICAL: AIR PURIFYING HALF FACE FIT TEST	AD,AS	1 HOUR	1
MEDICAL: NIGHT VISION SYSTEMS (ANNUAL EYE EXAM)	AE	4 HOURS	4
MEDICAL: 1 YEAR PHYSICAL	ALL	4 HOURS	4
MEDICAL: 1YR ISOCYANATES PHYSICAL	ALL	3 HOURS	3
MEDICAL: 2 YEAR CPR	ALL	3 HOURS	3
MEDICAL: ANNUAL AUDIOGRAM (FRCOCE)	ALL	2 HOURS	2
MEDICAL: PERIODIC HEALTH ASSESSMENT (PHA)	ALL	6 HOURS	6
MEDICAL: RADIATION PHYSICAL 5 YEAR	AM	6 HOURS	6
MEDICAL: NDI SIGHT PHYSICAL	AM, AS,	4 HOURS	4
MEDICAL: RESPIRATOR PHYSICAL (ISOCYANATES/MIXED SOLVENTS)	AM, AS,	3 HOURS	3
MEDICAL: 5 YEAR PHYSICAL	AO, WEAPONS	6 HOURS	6
		Total Hours per year	52

LIST OF REFERENCES

- Department of the Navy, Naval Postgraduate School. (2012). Annual required training. Retrieved from <https://www.nps.edu/technology/webbasedtraining/Auth/menu.asp>
- Early, E. (2009) Humanitarian assistance, disaster relief training key in Carat Brunei. Retrieved from United States Navy website: http://www.navy.mil/submit/display.asp?story_id=47424
- Ferguson, M. E. Department of the Navy, Office of Chief of Naval Operations, (2011). Physical readiness program (6110.1J). Retrieved from <http://www.navy-rt.com/NavyPRTInstruction.html>
- Grace, N. (2012, August 13). How to calculate number of work hours in a year [Web log message]. Retrieved from http://www.ehow.com/how_5896117_calculate-number-work-hours-year.html
- Ingram, T. U.S. Department of Defense, Department of the Navy. (2011). *Miniature/micro miniature (2m) module test & repair (mtr) program* (04RM3). Retrieved from Naval Sea Systems Command website: http://www.acq.osd.mil/log/mpp/cbm/Briefings/2M_MTR_PROGRAM_10Mar2011.pdf
- Koopman, M. E., & Golding, H. L. W. (1999). Optimal manning and technological change (CRM 99-59). Center for Naval Analyses, Alexandria, VA. Retrieved from DTIC: <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA379429>
- Navas, W. A. (2005a). Sexual assault prevention and response (Report no. 1752.4A). Retrieved from http://doni.daps.dla.mil/Directives/01000_Military_Personnel_Support/01-700_Morale,_Community_and_Religious_Services/1752.4A.pdf
- Navas, W. A. (2005b). Department of the Navy policy on sexual harassment (SECNAV Instruction 5300.26D). Retrieved from http://www.cnic.navy.mil/navycni/groups/public/@pub/@hq/documents/document/cnic_001052.pdf

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