Developing the Navy Reserve's Language and Culture Pilot Program

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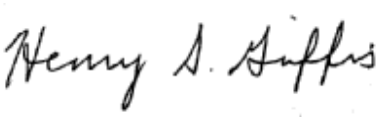

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This document represents the best opinion of CNA at the time of issue.
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Executive summary

In the FY 2009 National Defense Authorization Act (NDAA), Congress authorized the Office of the Secretary of Defense (OSD) to create a pilot program that provides a bonus to develop language proficiency and regional expertise in the Reserves. In April 2009, OSD authorized the Navy to execute the pilot by the end of FY 2009. The Office of the Chief of Navy Reserve (OCNR) asked CNA to help develop the program, which, like other Navy initiatives, is aimed at developing language skills, regional expertise, and cultural awareness (LREC).

Pilot parameters

Before CNA was brought on to the project, the Navy had already made some key determinations regarding the program structure. The incentive would be a one-time lump-sum bonus paid at the completion of the course, and the bonus would only be available for courses taken for academic credit at Institutions of Higher Learning (IHLs). CNA helped build the program from that framework.

We encountered several challenges related to defining, developing, and measuring LREC requirements. However, despite these challenges, we were able to construct a number of parameters for the pilot. We based these on (1) discussions with stakeholders, including the Navy's Foreign Language Office (N13F) and Reserve Forces command (RESFOR), (2) data gathered during discussion groups with targeted reservists, and (3) our own research. We note that these parameters are not set in stone and that the Navy can and should adapt the pilot program as information becomes available.

The main focus of our research was to develop the incentive structure for the pilot. However, before doing that, we had to determine what types of courses would be eligible and who the program would target.

Based on the Navy's strategic documentation and with guidance from our sponsor, we created a list of targeted languages and cultures, and a list of academic disciplines. In terms of participants, the Navy wanted to focus on those personnel that would interact with locals while mobilized. OCNR provided a list of ratings and designators that would be eligible for the initial run of the pilot. It was also decided that the pilot would be run nationwide and that participants must have 2 years of remaining service obligation.

Using these parameters, we conducted an informal survey of tuition costs and course availability at various colleges, universities, and community colleges. We also spoke with some of the targeted reservists about the amount of bonus that would be required to get them to take a course.

From this research, we established the following four bonus levels, with the same amount offered to enlisted and officers at each level:

- $1,250 for a lower division culture course
- $1,500 for an upper division culture course
- $2,000 for a lower division language course
- $2,500 for an upper division language course.

Alternatives

Our research also provided insight into other ways of doing business, both with regard to the structure of the incentive and the methods the Navy can use to develop LREC skills. For example, if the Navy concludes that the costs of courses and the availability of financial assistance vary significantly, they might consider a two-tiered bonus, with the first tier consisting of tuition reimbursement and the second tier a "pure" bonus. This would ensure that all reservists would receive an equivalent bonus amount.

Metrics

Finally, we provide some insight into how the Navy can assess the pilot program, with specific attention paid to the reporting requirements laid out by OSD. In the report to OSD, the Navy must include the

number of participants and the languages and regions studied. In addition to these metrics, we also suggest looking at other outcomes that may be related to participation, such as continuation, promotion, and mobilization.

Furthermore, we investigate metrics to help the Navy determine if the pilot program needs to be adapted. We consider several scenarios that the Navy may face, such as too much or too little participation, participation that trends toward certain languages or regions, etc. We note that, in each case, the Navy must look at whether the problem is driven by a lack of information about the program, by a lack of command support, or by an insufficient incentive.

Recommendations

First, it is critical that the Navy, and the Department of Defense (DOD) as a whole, develop definitions, requirements, and metrics related to cultural awareness, regional expertise, and cultural competence. This will help the Navy define goals for the pilot program and help frame any other LREC programs that are developed.

Second, the Navy needs to be able to track the skills and capabilities that programs such as this pilot are meant to develop, so that reservists with these skills can be easily identified and mobilized to the right geographic location if and when such a requirement is identified. We follow other guidance in recommending a secondary occupational code or special experience identifier for general purpose forces with LREC skills. These identifiers should be used by commanders for making assignments.

Similarly, the Navy should also consider policies that aim to utilize these LREC skills during mobilization. This does not mean the Navy should necessarily target LREC-skilled reservists for mobilization, but skills should be matched to mobilization, i.e. a reservist with regional expertise in Southeast Asia should go to the Philippines rather than to the Caribbean.

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Introduction

The FY 2009 National Defense Authorization Act (NDAA) contains a provision that requires the Secretary of Defense to create a pilot program that provides a monetary award for reservists who participate in an "education or training program to acquire proficiency in a critical foreign language or expertise in foreign cultural studies" [1]. The legislation requires that the pilot begin in FY 2009 and end 31 December 2013. It further requires the Secretary of Defense to submit a report on the success of the pilot by 31March 2012.

In an April 2009 memo [2], the Under Secretary of Defense (Personnel & Readiness) (USD(P&R)) requested that the Navy execute this program before the end of FY 2009. As a result, the timeline for developing the program was abbreviated. In addition, the memo requests a report from the Navy by November 2011.

The Office of the Chief of Navy Reserve (OCNR) led the effort to develop the pilot and made several decisions regarding the framework of the program. OCNR contracted CNA to assist with the development of some of the pilot parameters, focusing specifically on determining the incentive structure for the bonus.

This research memorandum documents CNA's efforts in developing the program parameters, including the incentive structure. We also detail the decisions made along the way and describe how they helped shape the pilot program. We begin our discussion with some background information about Navy and Department of Defense (DOD) language and culture programs, and then we describe the process followed for developing the pilot program. We also describe metrics that can be used to satisfy the reporting requirements for the pilot program, as well as metrics that can identify how successful the incentive is in achieving participation. Finally, we include some other options for the incentive as well as alternatives for developing the skills that the pilot program aims to achieve.

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Background

Given the current international security challenges facing the nation, DOD and the Services have recognized the need for increased language skills, regional expertise, and cultural awareness (LREC). The Navy's focus on being expeditionary, including expanding humanitarian and civic assistance missions, adds further motivation to developing these capabilities.

Over the past several years, the Services have worked to define their strategy for increasing these skills and have published several documents defining the way forward, e.g., [3, 4, 5, 6]. This section summarizes these documents, focusing on the Navy's strategies for developing this LREC capacity. This section also discusses some of the challenges that still exist and how they affect the development of the pilot program.

Developing the LREC strategy

Beginning in 2002, DOD began reviewing its language and culture requirements and programs, and created authorities, including Senior Language Authorities (SLAs) and a Defense Foreign Language Steering Committee (DFLSC), to help transform the language and culture program. In 2005, after reviewing requirements and studying language functions, DOD released its "Language Transformation Roadmap" [3]. The roadmap laid out the four main goals contained in the Strategic Planning Guidance for FY 2006–2011 and the steps necessary to achieve them. The four goals were:

1. Create foundational language and cultural expertise in the officer, civilian, and enlisted ranks for both Active and Reserve Components.
2. Create the capacity to surge language and cultural resources beyond these foundational and in-house capabilities.

3. Establish a cadre of language specialists possessing a level 3/3/3 ability (reading/listening/speaking ability).[1]

4. Establish a process to track the accession, separation, and promotion rates of language professionals and Foreign Area Officers (FAOs).

The roadmap designates 43 tasks to different stakeholders in order to achieve the goals. The tasks include establishing language offices, developing an annual strategic language list, and performing a one-time screening to identify language skills already resident in the force. Further, the roadmap aims to create strategic strongholds of low-density language expertise and a cadre of service members with language capabilities for tasks requiring basic language skills.

In October 2005, DOD updated its directive on the Defense Language Program (DLP) [4]. The directive states that it is DOD policy that "foreign language and regional expertise be considered critical competencies essential to the DOD mission" and calls for the provision of special pay and time for individuals to enhance their language skills, including continuing education programs.

In 2007, DOD published an instruction for managing the language and regional proficiency capabilities [5]. This instruction declares that "foreign language and regional proficiency [...] shall be considered critical to the continuum of professional military education and training" and tasks DOD with developing these capabilities by "providing training, education, and experience."

As the Navy moved forward with implementing the tasks laid out in the roadmap and other DOD directives, they published their own LREC strategy in 2008 [6]. The Navy's LREC strategy states that "success in achieving the nation's Maritime Strategy depends in large part on the Navy's ability to communicate with and comprehend potential adversaries." It notes that competencies in LREC skills are essential in every phase of war. The purpose of the LREC strategy document is to

1. These ability levels are measured on the Interagency Language Roundtable (ILR) scale. See appendix A for information on what an ability of 3/3/3 entails.

provide guidance for the "development, alignment, management, and transformation of LREC capability and capacity in the force."

The Navy's LREC strategy describes one measure of the desired end-state as having "sufficient LREC capacity that meets Navy's known mission needs, with appropriate levels of expertise, and [as being] able to surge for emergent requirements." This includes a "total force that appreciates and respects cultural differences," a "cadre of career language professionals," "other language-skilled Sailors and civilians with sufficient proficiency to interact with foreign nationals at the working level," and a "reserve capacity of organic foreign language skill and cultural expertise that can be called upon for contingencies" [6].

Both the roadmap and the LREC strategy call for the use of incentives to reward servicemembers for learning and maintaining critical foreign language skills. One incentive that already existed was the Foreign Language Proficiency Bonus (FLPB). FLPB is a monthly incentive paid to active and reserve servicemembers for achieving and maintaining proficiency in one or more strategic languages. Monthly incentive awards vary by language and level of proficiency, with a maximum monthly award of $500 for one language and $1,000 for proficiency in more than one language. Following roadmap guidance, the Navy provides the same FLPB for the Reserves as for active duty servicemembers. Receipt of the FLPB typically requires annual certification of language skills through the Defense Language Proficiency Test (DLPT), which measures proficiency against the Interagency Language Roundtable (ILR) scale [7]. In appendix A, we provide a description of the proficiency levels, as well as a crosswalk between levels of language proficiency and the American Council on Education (ACE) recommendations for college credit.

Unlike language skills, there are currently no specific bonuses for regional expertise, and there are no DOD tests for regional proficiency. However, [5] includes an enclosure that provides definitions for regional proficiency skill levels, similar to those used by the ILR to define language proficiency levels. Appendix A provides a description of the regional proficiency levels and discusses how the ACE crosswalk mentioned above could be used as a guide for determining

the number of college credits required in regional study to achieve the proficiency levels.

Though the Navy and the other Services have progressed in implementing the roadmap's tasks, there have been some issues along the way. Two reports, one by the Government Accountability Office (GAO) and the other by the House Armed Services Committee (HASC), have analyzed the progress made by DOD [8, 9]. They both note that there are issues with the requirements determination process, as well as with identifying the inventory of language skills and regional capabilities present in the force. We note a third challenge to the LREC program—defining the terminology used to describe these LREC skills.

Identifying the requirements

The DOD roadmap calls for combatant commanders (COCOMs) to "identify linguistic and translator requirements as part of their contingency and deliberate planning processes for operations and plans." Further, it tasks DOD to "build a capabilities-based language requirement determination process," which would identify and validate DOD's language and regional expertise requirements [3]. To accomplish the third goal of establishing a cadre of language professionals, the roadmap calls for DOD components to identify tasks and missions that require language proficiency and tasks that require basic language skills rather than full proficiency.

Much of what DOD hopes to accomplish with its language and regional strategies relies on the proper identification of these requirements. However, as GAO found, the Services have not been able to properly identify these requirements [8].

The Chairman of the Joint Chiefs of Staff Instruction (CJCSI) for Language and Regional Expertise Planning provides guidance for determining requirements, and it describes the process to identify necessary capabilities and calls on the COCOMs to specify their requirements for foreign languages and regional expertise capability support [10]. However, the GAO report notes that the requirements submitted varied widely, as some included low-level language and

regional proficiency requirements associated with general purpose forces while others did not.

The HASC report notes that "the Department has not yet adopted and implemented an agreed upon process for documenting combatant commands' language, regional expertise, and cultural awareness requirements. Nor has it settled on a process for determining requirements that may emerge in 10 to 15 years. Without the processes to know and project what requirements or capabilities are or will be needed, the Department cannot state with any degree of precision the outcome it is attempting to achieve" [9]. The report also brings up perceived differences in DOD and Service goals, noting that the Services have placed more emphasis on cultural awareness than language skills. These differences may also impact the determination of the mix of skills required to perform Service missions.

The Navy's LREC strategy recognizes that gaps still exist in identifying requirements, and it includes an objective to "accurately define the Navy's LREC requirements and articulate specific competencies, degrees of expertise, and capacities needed by the force" [6].

Though the transformation process has been ongoing for 4-plus years, requirements are still largely undefined. The lack of validated requirements makes it difficult to set goals for developing the LREC capabilities. As the HASC report notes, "without identification of those requirements, the Services' ability to build and provide the force with the proper mix of capabilities becomes far more difficult, if not impossible" [9]. But the Services are working to define requirements, and DOD is working on capabilities-based assessments for both language and regional expertise.

One of the difficulties in developing requirements is the forward-looking nature of language and cultural skills attainment. DOD's strategic language list aims to project anticipated language priorities for the next 10 years [11]. Emerging requirements will continue to change the scope of desired LREC capabilities.

Measuring the inventory

Another issue in developing LREC capabilities is in identifying the level of capabilities already present in the force. The Services have language experts that have well-defined skills, but identifying LREC skills in the general purpose forces is more difficult.

The DOD roadmap tasked all of the Services with performing a one-time self-assessment of language skills that was mandatory for all servicemembers, both active and reserve, and voluntary for civilians. The assessment was required by December 2005, but the Army has not yet reported its results due to the large number of personnel deployed. The HASC report notes that 217,200 personnel reported some foreign language ability but the bulk of the ability was in languages such as Spanish, French, and German, which are considered "dominant in the force" [9].

The Navy's one-time self-assessment yielded 138,390 assessments in 274 languages. Of these assessments, 15,628 came from the Reserves. Overall, the Navy "identified expectedly large populations with skill in Spanish, French, Tagalog, German, Italian, and Japanese." The self-assessment did uncover capacity in less commonly taught languages as well, including Farsi and Hindi [12].

One issue regarding the self-assessment is that, for the most part, those who self-reported a language skill were not tested to validate the assessment. Respondents were asked to identify their proficiency level following the ILR scale; however, because many assessments indicated the highest level of proficiency across listening, speaking, reading, and writing, it is likely that many of these self-assessments are not accurate.

The HASC report also questions the applicability of the DLPT for measuring the skills of the general purpose forces. According to the report, "the Department's tests are not suitable because they are structured to measure the more advanced proficiency of the language professionals" [9].

While there are some concerns about the validity of the language self-assessment, there is even less data available on the current state of

regional expertise or cultural awareness in the Services. The GAO report notes that, for regional proficiency, "DOD does not have an inventory of the skills of servicemembers or DOD civilians because it lacks a mechanism to assess and validate these skills." The report continues,

> While DOD policy provides regional proficiency skill level guidelines intended to be benchmarks for assessing regional proficiency, these guidelines do not provide measurable definitions, and DOD does not have a way to test or otherwise evaluate the skills of servicemembers or DOD civilians in accordance with these guidelines [...]. Furthermore, DOD has not established milestones for developing the ability to evaluate regional proficiency skills. [8]

Defining LREC skills

While not a focus in any of the language and culture documentation, we noticed a third issue in our research. The terminology used to discuss LREC capabilities varies from document to document, and a common terminology is necessary to clearly define goals for the Services.

Beyond language proficiency, which has relatively well-defined and testable measures, the documents refer to rather vague notions of cultural awareness, regional expertise, cross-cultural competence, and similar terms. The HASC report also notes that early in the transformation process, DOD "used terms interchangeably, or considered cultural awareness to be a subset of regional expertise," but now these are considered two distinct capabilities [9].

The problem of terminology for regional and cultural skills is very much tied to the lack of metrics and tests for measuring these capabilities. Without a formal, agreed-upon definition of cross-cultural competence, for example, it is hard to get a clear picture of the skills needed to gain that competency. It is necessary to understand these skills in order to develop tests or metrics for measuring proficiency. DOD is working on developing standardized definitions for these LREC terms, but they do not currently exist. Until DOD has clear definitions, it will be difficult to develop meaningful metrics and identify requirements for those skills.

How the pilot fits in

While challenges remain, the congressionally authorized pilot program is another step in building the desired capabilities. As [9] notes, "even without a validated process for establishing detailed combatant command requirements, the Services are building the approaches needed to develop forces with at least some capabilities."

Despite the problems with identifying specific requirements, DOD and the Services understand that they need some increased capacity, even if it is unspecified. However, it takes time and resources to develop LREC proficiency, and significant resources to gain the proficiency required of a language professional.

For example, the Army's Special Forces Q-course includes 4 to 6 months of language training with the expectation to achieve at least a 0+/0+ (listening/reading) proficiency, with a goal of 1/1 proficiency[2] [13]. Further, the Defense Language Institute's Foreign Language Center provides up to 64 weeks of instruction for its most difficult languages, with the goal of achieving 2/2/1+ (listening/reading/speaking) proficiency in the basic program [14]. The pilot program provides a way to begin to develop some LREC capacity, using a minimal amount of resources compared to the full-time training programs described above. As we will discuss, the pilot program parameters define who can participate and which courses they can take, but there is flexibility to adapt the program as requirements are defined and as needs change.

In the next section, we discuss how the pilot parameters were established.

2. These scores represent measures on the ILR scale, which is described in detail in appendix A.

Pilot parameters

As noted earlier, some decisions on the pilot's parameters were made before CNA was brought onto the project. The Navy determined that it would offer a one-time lump-sum bonus after the completion of a qualifying course and that only courses taken for credit at an accredited institution of higher learning (IHL) would be eligible for the bonus.

Aside from these decisions, CNA was actively involved in shaping several parameters of the pilot program, especially those that focused on defining the appropriate level and structure of the incentive. Through research into available options, discussions with Navy stakeholders, and discussion groups with targeted reservists,[3] we helped the Navy decide on the eligible languages and regions, eligible coursework, targeted participants, and the size and shape of the incentive. It is important to note that while these parameters were informed by our research and discussions, they are by no means set in stone, and the pilot program should be adaptable as information regarding the appropriateness of these parameters is received.

Goals

Before we could perform our analysis to help frame the pilot program, we had to understand the goals of the program. The NDAA [1] calls for increased language proficiency and regional expertise. Testimony by RADM Holloway to the HASC [15] notes the need for cultural awareness for all Navy servicemembers. So, what is the Navy trying to accomplish with this pilot program?

3. Given the abbreviated timeline of the study, we could not administer a survey, so we held discussion groups with reservists. See appendix C for a summary of these discussion groups.

The lack of validated requirements and the unclear picture of the inventory makes it difficult to set specific goals for the pilot program. While the Navy would like Sailors with more language and cultural skills, there's currently no way for it to precisely articulate these needs. In turn, we can't set goals for the pilot because it isn't clear what an appropriate goal would be. Ultimately, the Navy must be able to state their specific requirements for language and cultural skills. Until they can do this, participation goals will be arbitrary and difficult to justify.

Instead of setting goals during the pilot phase, we recommend running the program for a semester, collecting data on who is taking what classes and where, then analyzing the numbers to see what changes the Navy might want to make.

CNA has considered potential issues regarding participation, and we analyze possible scenarios and offer solutions in a later section. In addition, this early run of the pilot program will provide insight into the population of Navy reservists who are interested in developing LREC capabilities, and it will allow us to examine whether the higher education system can fulfill the Navy's demand for language and regional skills.

Eligible classes

Though the Navy decided to limit the eligible courses to for-credit courses at IHLs, this still includes a variety of institutions, from community colleges to private universities. Given this variation in the institutions, we had to assess some issues regarding what types of classes were eligible. In particular, we had to define rules for grades, credit hours, and course content that would determine which classes are eligible. It is important to develop clear policy, even on these relatively small issues, in order to avoid confusion among participants and administrators about whether the course is eligible for a bonus.

The Navy decided that reservists would be required to successfully complete the course to receive the bonus. This means a reservist must earn a final grade of at least a "C" on the traditional grading scale. The problem with this rule is that not all eligible schools use the traditional grading scale. Reservists can take classes at schools that don't give letter grades, but they must ask the school to give them a letter

grade for the sake of the program. If the school can't comply, then the class won't be eligible for the bonus.

A class is only eligible if the school awards at least three credit hours for completing the course. Our research shows that there are courses that are only one or two credits. However, we believe that such classes won't give the reservist enough exposure to the subject matter, whether it be a language or regional topic. A related point is that not all eligible schools use the credit-hour system. Again, reservists can take a class at a school that doesn't use the credit-hour system, but the school must assign the reservist at least three credit hours for completing the class. If the school can't do this, then the class is ineligible.

Many courses are about "global" or "international" issues. To be eligible for the program, courses must focus on a specific region of the world with the goal of developing regional expertise. The caveat to this rule is general religion courses. We decided that general religion classes would be accepted, as our search of courses at institutions found very few religion classes that focused on a specific regional area.

We discuss the eligible languages and regions in the next section and the eligible academic disciplines later in this section.

Eligible languages and regions

Closely related to the eligible class parameters was the question of which languages and regions reservists could study. To address this question, we consulted with the Navy's Foreign Language Office, N13F, and reviewed DOD and Navy strategic guidance to create a list of eligible languages and regions. After developing the list, we did an extensive search for relevant language classes at two-year and four-year schools to see where reservists could participate in the U.S.

N13F manages programs that train Sailors in needed languages. Their knowledge of the Navy's language requirements helped us craft the list of eligible languages. In particular, they suggested we exclude languages that are strategically important, such as Korean and Russian, but that are already prevalent in the Navy. They also made

suggestions about language and region eligibility based on where reservists would likely operate in the coming years. We identify which reservists are eligible in a later section.

DOD and Navy literature clearly define languages and regions that are strategically important to national security. We reviewed key documents, specifically [11], to inform our talks with N13F. The combination of expertise from N13F and information from official guidance, led us to the following list of eligible languages and regions as shown in tables 1 and 2, respectively.

Table 1. Eligible languages

Arabic dialects	Malay
Cambodian / Khmer	Pashto (Pashtu)
Chinese	Persian-Dari
Hausa	Persian-Farsi
Hindi	Philippine Languages[a]
Ibo / Igbo	Serbo-Croatian
Indonesian	Somali
Japanese	Thai
Kurdish	Turkish
Swahili	Vietnamese
Urdu	Yoruba

a. Tagalog is prevalent in the Navy and not included in the grouping of Philippine languages.

Table 2. Eligible regions

Caribbean	South America
Central America	South Asia
Central Asia	Southeast Asia
East Asia	Sub-Saharan Africa
Eastern Europe	West Africa
Middle East North Africa (MENA)	

Our next step was to search for language and regional studies classes at two-year and four-year schools. We wanted to know how many schools teach the eligible languages and where they are located in the U.S. We identified two major trends. First, urban areas have more schools that offer classes in the eligible languages. This isn't surprising and bodes well for those reservists who live in or near cities. For example, Los Angeles has a large Iranian community. So Persian is widely available in the two-year community colleges in that area. Second, Arabic, Chinese, and Japanese classes are common throughout the country. However, several of the eligible languages, such as Malay and Somali, aren't prevalent, and few, if any schools teach them.

The pilot program doesn't try to address the issue of class availability. Less common languages are still eligible, and if a reservist happens to live near a school that teaches one, then he or she can take a class. In future iterations of the program, it may be necessary for the Navy to offer training in these rare languages in other formats. We discuss potential alternatives in a later section.

This class research should also help the Navy advertise the pilot. We will submit our school data to the Navy so they can post it on the internet for reservists to consult. We assume that making it easier for a reservist to find an eligible class would increase pilot participation. Using our search results to help reservists locate and enroll in classes should enhance the Navy's strategic communication efforts.

Eligible disciplines

There was some debate about which types of regional courses should be eligible for the program. There was concern that reservists would take courses that aren't as relevant to the Navy as political science, for example. In contrast, making foreign language classes eligible was a simple process. Foreign language departments exist in almost every two-year and four-year school. If the foreign language department offers a class in one of the eligible languages, then that class is eligible for the bonus.[4] To gain language skills, one can enroll in a language class; with languages, there is a clear connection between the skill and specific education required to attain that skill.

The question of which disciplines were eligible for regional study is more difficult. What should a person study to understand a region of the world? DOD is still debating this, and an exact definition of regional "proficiency" or "expertise" is not available (see, for example, [5], [9], and [10]). Instead of trying to tackle this broad problem, we came up with a solution that gives the pilot clear, reasonable guidelines for eligible disciplines related to regional study.

We approached this question in two ways. First, we looked at DOD instructions and papers that attempt to define "regional proficiency" and what a person should know to claim regional proficiency. Second, we analyzed regional studies curricula from 11 colleges and universities. We concentrated on where DOD and academia overlapped in terms of suggested knowledge and disciplines. Our assumption was that we should recommend eligible disciplines based on what DOD needs its personnel to know, as well as how academia structures its regional degree programs.

DOD defines six levels of regional proficiency in [5]. The general guidance in the introduction of the instruction's enclosure states that,

> The skill levels represent an individual's awareness and understanding of the historical, political, cultural (including linguistic and religious), sociological (including demographic), economic, and geographic factors of a foreign country or specific global region [5].

The passage tells us the knowledge that DOD considers critical to having regional proficiency. Almost all of the areas listed in the quote are themselves academic disciplines. Using this set of disciplines as a starting point, we expanded our research to include other relevant instructions.

A Chairman of the Joint Chiefs of Staff instruction from 2008 offers a similar definition for regional expertise [10]. According to the Joint Staff, regional expertise

4. As mentioned earlier, only courses conferring at least three credits are eligible for the bonus.

> [i]ncludes an understanding of geographic, social, and economic issues of a region and many [sic] include unique expertise in one or more countries in a region. This expertise may include diverse elements such as knowledge of natural resources, military strategy, impact on US interests, religion, language, customs, perceptions, assumptions, and biases. [10]

Again we see the mention of geography, economics, religion, and the social and cultural issues that sociology and anthropology typically cover. With an idea about what regional knowledge DOD wants personnel to have, we turned to academia to see what the two had in common regarding what people should know about a region.

We collected information about Middle East Studies curricula at colleges and universities. To get a healthy mix of perspectives, we included public universities, private universities, military academies, and community colleges. Our analysis consisted of a matrix that showed disciplines and schools. When a school's Middle East studies curriculum contained a discipline, we made note in the corresponding cell in the matrix. After adding up the totals for each discipline, we could tell which were the most common.

The following disciplines topped the list: history, political science, anthropology, religion, literature, economics, and sociology. Although literature was prevalent in our survey of academia, it is not included in the pilot. DOD documents don't specifically say that studying literature would help a person become a regional expert. N13F felt that the arts weren't as critical for reservists to know as the other disciplines. However, geography was listed frequently in the DOD literature as a component of regional expertise. We replaced literature with geography on the final disciplines list to align the pilot with DOD's specific needs.

Because there was clear common ground between DOD and academia, our recommendations for eligible disciplines were relatively easy to make. A reservist can pursue the following disciplines when taking a regional course:

- Foreign language
- History

- Political science
- Religion
- Economics
- Geography
- Anthropology/Sociology.

Eligible participants

Pilot programs typically don't target an entire population for participation. Given that funding is limited, and the program is in the pilot phase, we had to consider who should be eligible and why.

The first main eligibility criteria is that only Selected Reserve (SELRES) members would be eligible for the pilot. Second, OCNR suggested that only SELRES members in ratings and designators that are likely to interact with locals overseas should be eligible. Finally, only reservists with at least 24 months remaining on their contract at the time of bonus payment can participate in the program.

With the goal of achieving the most return on investment from the pilot program, OCNR suggested that the eligible pool consist of ratings and designators that are most likely to interact with foreign populations when deployed, and therefore the most likely to benefit from additional LREC skills. OCNR provided a list of these ratings and designators that would be targeted by the pilot program.[5]

Tables 3 and 4 list the ratings and designators that are eligible to participate in the pilot program, and they give a count of how many SELRES reservists hold that rating or designator as of June 2009. These data are in the Inactive Enlisted Master File (IEMF) and Inactive Officer Master File (IOMF), which are both stored in the Inactive Manpower and Personnel Management Information System (IMAPMIS).

5. Later in this section, we discuss our recommendation to include less frequently deployed ratings and designators in the eligible participant group.

Table 3. Eligible enlisted ratings

Rating	Number of SELRES reservists
Builder (BU)	2418
Construction Electrician (CE)	1201
Construction Mechanic (CM)	1579
Engineering Aide (EA)	255
Equipment Operator (EO)	1999
Hospital Corpsman (HM)	4633
Mass Communications Specialist (MC)	231
Master-at-Arms (MA)	3970
Steelworker (SW)	799
Utilitiesman (UT)	821

Table 4. Eligible officer designators

Designator	Number of SELRES reservists
CE/Seabee (510X)	542
Chaplain (410X)	218
Medical (210X)	535
Dental (220X)	240
Nurse (290X)	1118
PAO (165X)	195
JAG (250X)	432
Supply (310X)	683

The pilot program aims to increase language proficiency and regional expertise in the Reserves, but the Navy not only needs to develop this capacity, but also retain those reservists with these skills. In order to benefit from paying reservists a bonus to take language and culture classes, the Navy needs the reservists to stay in the force and to use these acquired skills while they are serving.[6]

6. We add that, when mobilized, reservists should be sent to regions related to their competencies in order to maximize the benefit.

Many incentive programs in the Navy require additional obligated service for those who participate as a way of ensuring some return on the Navy's investment. This option was not preferable for this pilot program as it would likely be a large disincentive to participation. Instead, the option of requiring participants to have remaining obligated service in order to be eligible for the program allows for the Navy to receive the return on investment without the additional obligation requirement. The Navy has selected to impose a two-year remaining obligated service requirement for participants in this pilot program.

Further, while all reservists have an obligation to remain in the Reserve for a specific amount of time, many do not have a specific requirement to remain in SELRES for the duration of their contract. In other words, some reservists are able to transition between SELRES and the Individual Ready Reserve (IRR). For a number of reasons, including differences in laws and policies, it is more difficult to mobilize members of the IRR than members of SELRES. As a consequence, we recommended that the Navy specify that the obligated service be in SELRES specifically.

The eligibility criteria lead to the following totals. These are estimates from the IEMF and IOMF in the IMAPMIS, as of June 2009.

- There are about 55,000 total SELRES reservists, including both officer and enlisted.
- About 22,000 SELRES reservists (18,000 enlisted and 4,000 officers) are from the eligible ratings / designators.
- Between 12,500–16,500 SELRES reservists, including both officer and enlisted, are from eligible ratings or designators and have at least 30 months left on their contract as of June 2009. This estimate includes about 12,500 SELRES reservists from eligible enlisted ratings.[7]

7. We do not have dates for when officers will leave the Reserves. The range of numbers includes the 4,000 SELRES officers from eligible designators.

With the general structure of the pilot in place, we had to determine what amount of money would incentivize reservists to participate in the pilot program. The next section explains how we approached the incentive question, and it recommends pay levels based on our research and analysis.

Bonus parameters

One of our main tasks was to determine the level of bonus the Navy should offer reservists for each course, and whether it should be the same for all courses and all reservists. In order to derive a reasonable value for the inauguration of the pilot, we conducted research on a number of factors, such as the costs and availability of different types of courses, and we conducted discussion groups with reservists in several Navy Operational Support Centers (NOSCs). Our recommendations are based on the premise that the initial bonus amounts and parameters are intended to be a starting point only, and that ongoing analysis of pilot data will provide guidance as to how the incentive structure should be modified to achieve any specific goals. We describe metrics that will help to determine the effectiveness of the bonus in a later section.

We turn now to a discussion of our recommendations regarding the levels of bonus and how we arrived at these values.

Levels of bonus

We began our research by conducting searches of a random selection of public two-year and four-year colleges to determine (1) the availability of various foreign language courses at IHLs, (2) the number of credit hours conferred for language and culture courses, and (3) the tuition and fees charged at different types of institutions. We eventually restricted our search to public institutions because tuition and fees at private colleges are far greater than those charged by public IHLs, and thus we concluded that a majority of reservists who participate in the pilot will most likely select a public IHL. This is a reasonable assumption since a majority of college students attend public institutions; 96 percent of college students enrolled in a two-year college and 62 percent of college students enrolled in a four-year college in the fall of 2007 were enrolled in public institutions [16].

Our research yielded several insights. First, we found that two-year colleges offer fewer of the languages included in the pilot than what are offered at four-year colleges. Even so, many of the two-year colleges we surveyed offered at least introductory courses in either Arabic, Chinese, and/or Japanese. We found relatively few two-year colleges in the south, however, that offered any eligible foreign languages. And because of their mission, two-year colleges offer predominantly classes at the first- or second-year college level (generally referred to as lower division classes, with course numbers in the 100's and 200's respectively), while upper division classes (third- and fourth-year college classes, numbering in the 300's and 400's, respectively) are the exclusive domain of four-year institutions.

Secondly, we found that culture courses generally confer three credits,[8] regardless of the discipline, while foreign language courses typically confer four or five credits, with some institutions offering language courses for six credits.

Our third major finding was that two-year colleges have the lowest tuition and fees per credit hour. For instance, according to the American Association of Community Colleges, the average annual tuition and fees for full-time attendance in public community colleges is $2,402, while it is $6,585 for public four-year colleges[9] [17]. We also found a wide variation in tuition and fees charged at public institutions across states; figure 1 summarizes the range of tuition costs per credit hour that we found.[10]

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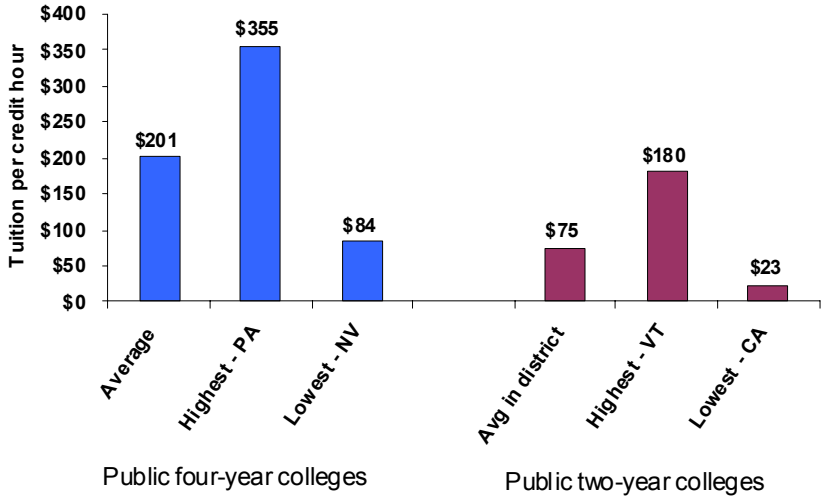
8. While not all IHLs are on a semester or credit hour system, the majority of public institutions do conform to these conventions. To simplify our discussion, we refer to semesters and credit hours only, but the findings pertain to all courses that are similar in nature.

9. Data are derived from the most recent available information as of January 2009.

10. Note that some colleges include fees as part of tuition, while others list fees separately. We did not include separate fees in our calculations. We report averages for in-district community college tuition only, and note that the costs for out-of-district community colleges are sometimes significantly higher.

Figure 1. Average tuition per credit hour[a]



a. Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS) for the 2007–2008 school year

Next we conducted research into the availability of Veterans' education benefits that reservists might be able to use to offset the costs of taking a course at an IHL. There are two basic types of education benefits available to servicemembers: (1) GI Bill benefits, which vary depending on when servicemembers first entered the service; and (2) Tuition Assistance (TA). We provide details regarding these benefits in appendix B. However, it is worth noting here that the intended purpose of both GI Bill and TA benefits are the pursuit of a degree, and the one-time classes for this pilot program do not meet this intention.

We conclude from our research that, for the purposes of this pilot, only those reservists who have not previously earned a Bachelor's degree—which excludes all officers and some enlisted—and who are matriculated[11] in a degree program with some remaining electives or foreign language requirement to fulfill, might be able to use GI Bill benefits to offset the costs of courses taken as part of the pilot. In

11. A matriculated student is someone who has been granted admission to a college or university as a degree-seeking student. Students generally do not have to have a declared major to be classified as "matriculated."

addition, the Navy does not offer TA to reservists who are not on active duty for the duration of the course. Hence, we conclude that very few reservists will be able to offset the costs of a course with Veteran's educational benefits.

In summary, then, we found that language courses generally confer more credits than culture courses, so they would also cost more for reservists enrolled less than full-time.[12] In addition, reservists may be able to take many lower division courses at both two- and four-year colleges, but upper division classes can be taken only at four-year colleges. On average then, upper division classes will cost more than lower division classes. These findings led us to recommend that the bonus vary based on the discipline (i.e., language versus culture) and the level of the course (lower versus upper division).

We also recommend that the level of bonus be the same for officers and enlisted taking the same type of course. Both enlisted and officers will incur identical tuition costs for each type of course. While officers typically earn more and may therefore require a higher incentive to produce equivalent participation rates, officers already have undergraduate degrees and have already either studied a foreign language in high school or college,[13] and/or taken one or more courses in their undergraduate program that would have introduced them to at least one of the cultures or regions included in this pilot. If the goal is simply to develop some general LREC skills in as many reservists as possible, relatively fewer officers than enlisted reservists would need to take a course to satisfy this objective.

Ultimately, some differential in bonus rates may be required to achieve specific enlisted and officer goals. Absent these goals at the

12. Colleges generally charge per credit hour for students enrolled less than full-time (typically 12 or more credits per semester).

13. According to the U.S. Department of Education, approximately 50 percent of the high school graduating class of 2004 who immediately enrolled in a four-year college after graduation had completed more than 2 years of study in a foreign language in high school [18]. We acknowledge that the majority of these students did not study a language included in this pilot, but their curriculum most likely introduced them to aspects of a culture other than their own.

beginning of the pilot, however, and lacking information regarding the percentage of both enlisted and officers who have previously taken a college course that is in the spirit of this pilot, we concluded that the simplest strategy was to offer identical bonus amounts to enlisted and officers, and to modify levels as more information regarding goals and participation rates emerged.

Methodology for estimating bonus levels

Using average tuition costs and the number of credits conferred by IHLs for culture and language courses, we constructed a method for calculating the level of bonus for each of the four categories of classes: (1) lower division language, (2) upper division language, (3) lower division culture, and (4) upper division culture.

The first step in our calculation was to estimate the average cost of each type of course. For simplicity, we used only the average tuition costs cited above for each type of IHL, ignoring additional costs, such as fees, books, transportation, childcare, and so on. We also did not account for any differentials in the availability of education benefits or financial aid to offset the cost of courses. We expect that information gathered from the pilot will help the Navy determine whether additional costs are significant, whether they are disproportionately borne by certain types of reservists (such as single parents), and whether a disproportionate number of reservists participating in the pilot receive GI Bill benefits or other types of financial aid. This type of information may help inform modifications to the structure of the incentive; we discuss a number of alternatives later.

We then calculated the number of hours that a student would likely spend on each type of course, using the following assumptions: (1) the number of credits a course confers is also a measure of the number of hours the course convenes each week, (2) a semester consists of 15 weeks, (3) students will spend approximately 1 hour each week outside of class for each hour in class on homework and studying.[14]

14. We acknowledge that 1 hour outside of class is a low average and that students who wish to earn a high grade will likely spend more time. Conversely, some reservists may already have a background in the discipline or language, some may be taking a refresher course, and some reservists may be satisfied to receive a "C" grade. A 1-hour average then suffices for our purposes.

Finally, CNA conducted discussion groups in four NOSCs in August 2009 to determine the level of bonus that would be necessary to incentivize reservists to enroll in courses, and what other types of incentives might also be effective in obtaining similar types of outcomes. Details regarding these discussion groups are provided in appendix C.

The discussion groups generated 200 completed comment cards from reservists, 58 percent of whom were in the ratings (96 enlisted) and designators (20 officers) targeted for the pilot. One of the questions we asked the reservists was what level of bonus would they require to take a course. We asked them to assume that the cost of a course was between $800 and $1,000 to normalize their responses. The median level of bonus—the amount required to incentivize 50 percent of reservists to participate in the pilot—was $2,500 ($2,000 for enlisted and $5,000 for officers). We used this value as a starting point, and we then adjusted the level up or down based on whether it was a language or culture course, or upper versus lower division course.

Table 5 below describes the assumptions regarding each type of class, the recommended level of bonus, and the average hourly compensation that would result for each type of class given our assumptions. So, for instance, we assume that all foreign language courses will confer four credits and all culture courses will confer three credits, and that the average tuition per credit hour at two-year and four-year colleges is $100 and $300, respectively.[15]

The last column of table 5 is an estimate of the hourly bonus each reservist would receive after paying tuition. So, for instance, we estimate that the average reservist who takes a lower division language course will take it for four credits, study an additional 4 hours each week for 15 weeks, and receive a net bonus of $1,600, after paying tuition. This translates to roughly $13.00 per hour spent on attending the class and studying / homework.

15. We use averages for simplicity. In a later section, we discuss an alternative to this type of bonus that takes into account not only the variation in the costs of different types of institutions and courses, but also the fact that some reservists may have some or all of the costs covered by GI Bill benefits or other types of financial aid.

Table 5. Recommended bonus amounts and assumptions used

	Number of credits	Total cost of course	Bonus	Bonus minus cost of course	Number of hours in class/study per course[a]	Average net bonus per hour of class/study
Lower division language	4	$400	$2,000	$1,600	120	$13.33
Upper division language	4	$1,200	$2,500	$1,300	120	$10.83
Lower division culture	3	$300	$1,250	$950	90	$10.56
Upper division culture	3	$900	$1,500	$600	90	$6.67

a. A semester typically consists of 15 weeks of classes. The number of credits per course is also the number of hours of class convening each week. We assume an additional hour outside of class each week for studying/homework for each hour of class convening. For instance, a four-credit class would meet 4 hours each week, with an additional 4 hours of study/homework each week, for a total of 8 hours each week for 15 weeks.

The net hourly compensation estimate can be thought of as a metric by which reservists may consider alternative uses for their time (something economists refer to as "opportunity costs"). Referring to appendix C, many reservists noted their opportunity costs in their discussions of the level of bonus necessary to incentivize them to take a course, stating for instance, that the incentive, in addition to covering the monetary costs for the course, would need to compensate them for their time away from families and jobs.

Reservists who are hourly employees may require compensation that is similar to what they would receive if they spent the time working overtime or in a second job instead of in class and studying. Salaried employees may have fewer opportunities to earn additional income during non-work hours, but they may compare the perceived value of their free time to this estimate. For both types of reservists, however, the benefits of taking a course for the pilot may include more than the bonus the Navy offers. In addition to the benefits that may accrue if they are mobilized to a country for which their course was relevant, their college course may benefit them in their civilian job or in their interactions with their community at large.

The bonus is structured so that the first courses (i.e., lower division) taken in a language or culture receive higher net hourly

compensation than higher-level courses. We construct the bonus this way because the incentive is designed to encourage reservists, particularly those who have never studied a foreign language or culture, to gain some knowledge and awareness by taking courses for credit. This implies that most will be taking a lower division course, at least at first. Those who have never taken a course in the particular discipline, or perhaps any college course, may need additional incentive to encourage them to attempt even a basic introductory course.

We also construct the bonus so that language courses have a higher net hourly bonus. We do this for a number of reasons. First, there is far less uniformity in the number of credits conferred for a language course than for a culture course; reservists taking a language course may be enrolled in five or even six credit hours, which would incur both greater expense and greater time commitment. Secondly, two-year colleges offer a narrower range of languages, which means that even for lower division language courses, a significant number of reservists may be required to attend public four-year institutions.

Given the lack of specific goals for the pilot program, we recommend offering the same bonus regardless of language or region studied. In the future, if detailed requirements are established, the pilot program can easily be adapted to offer different levels of bonus depending on the curriculum.

Other recommendations

In designing the pilot program, we worked closely with the sponsor and other stakeholders. We made several recommendations on the different parameters and then worked to obtain consensus. This section presents some other recommendations we made that the Navy either adapted or did not include in the program at all. For each, we describe the recommendation and the course of action the Navy has chosen.

Pre-approval

We recommended a pre-approval process. Because of the ambiguity in the types of relevant culture courses, we were concerned that reservists may unintentionally take courses that do not satisfy the

intent of the pilot. To minimize the Navy paying for irrelevant courses, or worse, denying payment to reservists who took courses in good faith, we recommended that each NOSC approve courses before the reservist enrolls, or at least prior to the course withdrawal period.

Another benefit of pre-approval is the provision of timely information regarding how many and which reservists are participating in the pilot. Specifically, we recommended that part of the pre-approval process include the requirement that each NOSC forward relevant information about reservists granted approval to the appropriate Navy personnel in charge of the pilot. This would allow the Navy enough time to analyze the data and determine whether the incentive needs to be modified in time for reservists to register for classes for the second semester of the pilot. In addition, having data on those who registered would provide insight into whether participants were registering but not successfully completing their course of study.

Rather than a pre-approval process, the Navy opted to require that each reservist participating in the pilot submit to their NOSC Educational Services Officer (ESO) a bonus application form and a copy of the course description from the school's course catalog within 60 days of registering for the course. This notification process should still provide the benefit of timely data.

Yearly cap

Given limited funds, the Navy can either choose to fund fewer reservists to take many classes, or fund more reservists to take fewer classes. We concluded that the goal of the pilot was to do the latter; maximize the number of reservists who take a limited number of courses to expose them to other cultures and/or languages. Hence, we recommended that the Navy cap the incentive to no more than two classes per reservist per year. Instead, the Navy has capped the incentive at $5,000 per year, which will cover up to 2 to 3 classes at the full bonus amount, depending on the type and level of class, and some partial bonus for one additional class.

SELRES-specific obligation

As we noted before, the Navy chose to require participants to have 24 months of remaining service obligation in order to be eligible for the pilot. This was done in lieu of requiring an additional obligated service for receiving the bonus, which we felt would be too much of a disincentive given the size of the bonus. However, the Navy has not yet adopted a SELRES-specific remaining obligation which would ensure that participants are active members of the SELRES and eligible to mobilize to use their acquired LREC skills, for 24 months after they receive the bonus. If participants are allowed to transition to the IRR, the Navy will not be able to achieve the full return on its investment.

FLPB restrictions

OCNR has stated one goal of the pilot is to incentivize reservists to expand linguistic skills, regional knowledge, and cultural awareness in order to improve effective interaction with foreign nationals. This seems to imply an introductory to intermediate level of proficiency in either a language or culture, or both. The FLPB, on the other hand, incentivizes servicemembers to obtain a greater level of proficiency; servicemembers must test at least at a level 2 proficiency in both listening and reading on the DLPT.[16] Therefore, a reservist who is already receiving the FLPB in a language does not require this pilot incentive to develop his or her LREC skills. Hence, we recommend that this bonus not be offered to reservists taking classes in a language for which they are already receiving the FLPB. This would not prohibit them, however, from receiving the bonus for a course in another language or a relevant culture course. The Navy has not yet included any restrictions on FLPB recipients in the provisions of the pilot program.

Goaling NOSCs

We suggested that the Navy assign goals to each NOSC, requiring that at least 2 percent of the total number of reservists in the included ratings/designators participate in the program. If the total is less than

16. See appendix A for a discussion of language proficiency levels and the ACE guidelines on how DLPT scores equate to course credit.

100, they should be goaled for one reservist. Experience with an experiment to recruit pre-trained Hospital Corpsmen (HMs) into the Active Component supports the notion that goals are useful in achieving certain desirable outcomes. The HM experiment is documented in [19]. Briefly, in February 1996, Commander Navy Recruiting Command (CNRC) goaled six of the 31 Navy Recruiting Districts (NRDs) to recruit 50 radiographers and 25 clinical lab technicians. The remaining NRDs were also asked to participate, but without specific goals. In the first 8 months of the experiment, 21 HMs were recruited, for an average of 2.6 pre-trained recruits per month. The goaled NRDs accounted for almost two-thirds of these recruits. In FY 1997, the Navy dropped the experiment label and the six NRDs were no longer goaled. In the next 12 months, just eight pre-trained HMs were recruited, for an average of about 0.7 recruits per month, a decrease of 75 percent in monthly new recruits.

Establishing goals, as with the HM experiment, ensures that both parties, in this case, reservists and NOSC Commanding Officers (COs), are fully engaged in achieving the Navy's objectives. The bonus, coupled with other personnel goals accomplished by taking a relevant course, incentivize the reservist to participate. Many reservists, however, may not be familiar with local postsecondary institutions or specific requirements for enrolling in courses if they are not matriculated, and some reservists may be reluctant to take a college course if they have never done so in the past. Goals could incentivize NOSC COs to provide time during a weekend drill for a local college representative to present information regarding how to register for a class, which courses would be relevant for the pilot, and perhaps even help reservists to register for a course.

Similar to the HM experiment, we recommend that no penalty should be imposed if the NOSC misses its goal, but it would be useful if the CO provided feedback as to why they did not meet the goal. It would also be useful if the NOSC COs gave recommendations as to how to make the incentive attractive to more reservists. The Navy has not yet set any goals for participation from the NOSCs.

Include non-deploying ratings and designators in eligible participant group

One concern raised during the course of our research was that reservists may perceive that their chances of being mobilized would increase if they participated in the pilot. This hypothesis could be tested by including in the pilot ratings and designators with the full range of mobilization rates. We could then determine whether participation rates vary with rates of mobilization, holding all other factors constant. This is especially important if the Navy wants to ensure that a certain minimum percentage of reservists in all ratings and designators have the necessary proficiency envisioned by the pilot.

So, for instance, if it was found that reservists in ratings/designators with the lowest rates of mobilization had the highest level of participation, this would indicate that the bonus level may need to be correlated with the rate of mobilization.

Ultimately, however, the Navy selected only those ratings and designators with a high rate of mobilization, which will make it difficult to discern the effect of perceived mobilization on the rate of participation.

Reimburse participants if mobilized

Some state institutions have policies to reimburse reservists who are mobilized after they have begun a course and after the period to withdraw without penalty has ended. These institutions may reimburse servicemembers for tuition and fees under these circumstances, but books and other supplies are often not reimbursed. Reservists who are unable to complete the course due to mobilization will have incurred other types of expenses as well, such as travel and perhaps child care. If reservists agree to take a course with the understanding that these types of expenses are covered in the "net bonus" amount, yet they receive no bonus because they were involuntarily mobilized, they may refuse to participate in the future. The experiences of these reservists may also make other reservists less likely to participate. If so, higher bonuses would be required to achieve the same level of participation than if they were reimbursed. Therefore, we recommend that reservists who are involuntarily mobilized be reimbursed for any out-of-pocket expense that is not otherwise reimbursed by the institution. However, OCNR did not include any provisions for reimbursing mobilized reservists.

Alternatives for the pilot program

Before CNA was brought on to help develop the pilot, the Navy had made several decisions regarding both the method of developing the desired LREC skills and the shape of the incentive. First, the Navy determined that only courses taken for credit at IHLs would be eligible for the pilot program. Second, the Navy decided that the bonus would be structured as a one-time lump-sum cash bonus paid after successful completion of an eligible course. However, there are alternatives to both the method and the incentive, and we discuss some of these here. It was beyond the scope of the study to fully develop the alternatives presented here. However, we offer these for consideration in the future as the Navy develops more specific LREC strategies and goals.

Alternative incentives

The Navy offers many different incentives for different programs. Some incentives are paid on a monthly basis rather than as a one-time bonus. Some incentives are offered tax-free as allowances rather than bonuses. For the pilot program, we consider some options for the incentive that the Navy should consider when evaluating the success of the current bonus.

Not all incentives should necessarily target the same populations (i.e., officer and enlisted individuals already in SELRES); not all reservists (or potential reservists) will deem each incentive to be equally attractive. Variation in current and potential reservists' interests, abilities, and perceived benefits of various incentives provides the Navy with opportunities to offer a more cost-effective bundle of incentives to achieve its goals.

One of the suggestions from the discussion groups was to simply reimburse the participant for tuition, with no additional bonus. The Navy could potentially pay for this through the use of TA. The USD(P&R)

memo [20] instructs the Services to extend TA benefits to service-members taking a foreign language course, regardless of whether the course is part of a degree program. We recommend that the Navy offer this benefit to reservists, and that it be extended to regional courses taken for the pilot program as well.

Providing TA to reservists who take a course that is relevant to the pilot would minimize the difference between bonuses awarded for similar courses, since no reservist would be paying for tuition or fees. Other costs would remain (such as books, parking, transportation, child care, and so on), as would their differentials, but tuition and fees no doubt comprise a large portion of the total cost of attendance.

In addition, some reservists in the discussion groups were concerned about having to pay for the class out-of-pocket, only to be reimbursed months later (see appendix C for some of the concerns expressed). Many reservists may in fact be unable to participate because they do not have the savings required to pay for the course and wait months to be reimbursed. This type of problem is mitigated with TA, since the Navy TA pays the tuition and fees charged by educational institutions up front.

If the TA option is not feasible, the Navy could consider offering a two-tiered incentive that achieves many of the same objectives—reducing the variation in the net bonus amount and relieving reservists of the requirement of paying for the course up front. The first tier would reimburse tuition and fees charged by the college that are not covered by other financial aid or military education benefits. Similar to TA, this first tier should be paid directly to the IHL, or at least to the reservist upon receipt of official notification of their enrollment in the course. The second tier would be a standard bonus that could continue to vary by level and type of course, or by any other course or reservist characteristic that is deemed necessary.

Another option is to offer a monthly stipend to participants rather than a one-time bonus at the completion of a course. The Army recently began to offer a similar incentive to new ROTC cadets to study Arabic, Pashto, Chinese-Mandarin, Korean, Persian-Farsi, Persian-Dari, Urdu, Indonesian, Swahili, or Hausa [21]. As long as the cadet successfully completes the course, he or she is paid for the

months enrolled in a critical language course in the following amounts: $100 a month for first-year level courses, $150 a month for second-year level courses, $200 a month for third-year level courses, and $250 a month for fourth-year level courses (maximum $3,000 over an academic year). Besides standard classroom-based college language courses, the bonus program covers participation in language-immersion programs and study-abroad programs.

Several other options were suggested by the discussion groups, and these could work as stand-alone incentives or as additions to the bonus. (See appendix C for a summary of the alternatives) One option that the discussion groups suggested was to provide drill credit, or alternatively retirement credit, for the time spent in an eligible course. Counting the time towards the drill requirement would likely diminish the amount of drill time spent supporting Navy commands, but there are possibilities with offering some fraction of the drill time for successful completion of a course, or other similar modifications.

Another suggestion is to provide promotion points for the next exam cycle for successful completion of eligible coursework. This incentive would obviously only impact junior and mid-grade enlisted reservists. The Navy recently began to award points for a college degree towards advancement. Given that two points are awarded for an Associate degree and four points for a Bachelor's degree, this may not be feasible unless the points were awarded for some required level of proficiency in the language or culture. Working with Navy College and partner colleges, the Navy may want to create Certificates in Ethnic Studies, so that the points would only be awarded for successful awarding of the certificate. In addition to providing a metric for awarding points, servicemembers may be more willing to take several courses if they provided them with some type of credential (and they may be able to use GI Bill benefits since a certificate may satisfy the definition of an education objective). Even so, since a certificate would be far below the requirements for an Associate degree, the award should probably not confer more than one point. Another related option would be to require completion of some set of relevant courses as a requirement for advancement to senior paygrades (including officers).

The discussion groups also suggested guaranteeing active duty time in conjunction with the region studied. This option was popular with reservists who were concerned they would never utilize their acquired LREC skills. However, the Navy would have to determine whether this assignment would happen after any course, or after a sequence of courses that developed an appropriate amount of language proficiency or regional expertise.

Finally, while not very popular with the discussion groups, the idea of awarding a Navy Enlisted Classification (NEC) or an Additional Qualification Designation (AQD) was suggested. The reservists who participated in the discussion groups did not see the direct benefit of having an additional NEC or AQD. However, despite its apparent lack of value as an incentive, creating NECs and AQDs would be a good way to track the LREC skills acquired through this program, and could be worthwhile in that respect.

Alternative methods

In addition to varying the incentive, the Navy should consider alternative methods for developing the LREC capacity. The legislation calls for a pilot program that provides a bonus to reservists who participate in "an education or training program to acquire proficiency in a critical foreign language or expertise in foreign cultural studies" [1].

Loosen restrictions on types of classes eligible for the pilot

One clear option is to remove the requirement that courses be taken for academic credit. We found many colleges, especially two-year institutions, that offer some of the languages included in the pilot as part of their continuing education program. These courses typically do not confer credit. Another option would be to allow reservists to take courses at non-accredited institutions. There are several language institutes, such as the Boston Language Institute and the Tennessee Foreign Language Institute, that are not accredited but offer instruction in a variety of languages, and they are often able to customize programs based on the customer's needs.

If there is specific concern that these types of courses, either non-credit or those taken at non-accredited institutions, are not rigorous enough, the Navy can also require the reservist to take the DLPT and score at least a 0+ on at least one component in that language in order to receive the bonus. Requiring all reservists to take the DLPT after completing a language course may be a good general practice; it helps to quantify the level of proficiency of each reservist and helps to identify the increase in proficiency with increasing college courses in a language.

Use language learning software

The "education or training program" called for in the legislation is non-specific. It is possible that a self-paced program of instruction, using software such as Rosetta Stone, would count. If so, this could also be tied to a requirement to take the DLPT upon completion. According to [22], all active Army, Army National Guard, Army Reserve, Department of the Army civilians, United States Military Academy (USMA), or ROTC contracted cadets have free access, via Army e-Learning, to Rosetta Stone software in over 30 languages.

The Marine Corps Center for Advanced Operational Culture Learning also has a contract with Rosetta Stone that allows Marines to take courses through the MarineNet distance learning portal. The contract offers the software to active duty, active reserve, selective Marine Corps reserve, mobilized inactive ready reserve and Marine civilian employees [23].

A recent Business Wire article [24] announced that the Marine Corps had just signed a contract to continue and expand its Rosetta Stone contract, by providing all active and reserve Marines with access to the Rosetta Stone speech recognition software on all Navy Marine Corps Intranet (NMCI) computers on every Marine Corps base.

The Navy does not provide access to Rosetta Stone software. Instead, it provides free access to Critical Language-150 (by Transparent Language, Inc) to active duty, reservists, and Navy civilians via Navy Knowledge Online, at no cost to the user [25].

Consider study abroad and immersion programs

The brick-and-mortar type courses that are currently eligible for the pilot program are not the only language and regional courses available at many institutions. In fact, most degree programs focusing on a specific language or region require study abroad as part of the degree requirements. The Navy could focus on these study abroad opportunities for the training, rather than on classroom instruction.

There is already one program within the Navy exploring this avenue. Southern University's Navy ROTC program, which includes students from Southern, LSU, Southeastern Louisiana University, and Baton Rouge Community College recently received a $285,000 grant from the Institute of International Education to provide African language study, African cultural immersion, and study abroad opportunities [26].

The grant provides intermediate-level proficiency in African languages and cross-cultural involvement opportunities through study abroad in countries such as Uganda, Kenya, Senegal, Tanzania, and South Africa. Southern offered African language courses and participated in cultural events throughout the fall 2009 semester and the university will conduct study abroad projects in the summer of 2010.

One possible issue with study abroad programs is the potential cost and time required. While classroom instruction would take a couple hours each week, study abroad programs would have the reservist out of the country for at least a couple weeks, at which time they would be away from their job and family.

Contract with schools to offer other programs, flexible courses

CNA has conducted extensive research on partnering with community colleges to provide training and as a source of high-quality pretrained recruits (see, for instance, [27] and [28]). That research, combined with input from the discussion groups (see appendix C), led us to a number of recommendations for additional options to achieve the Navy's goals.

First, reservists expressed concern that local colleges might not offer the types of courses that would either qualify for the pilot or that they might not offer the breadth of language courses that they would like to take. In locations where this is determined to be a deterrent to participation, we recommend that the Navy consider contracting with local postsecondary institutions to develop tailor-made courses. Because of their mandate, two-year colleges are more likely to provide custom courses, and they are also the most cost effective; however, some public four-year institutions may also be willing to partner with the Navy. The Navy would most likely have to guarantee a minimum number of students who would enroll in the class each semester, but more reservists may be willing or able to participate if the institutions are willing to be flexible in terms of the class convening times. For instance, more reservists may be able to enroll if courses were offered only on non-drilling weekends. Alternatively, discussion group participants suggested that the Navy could bring instructors to the NOSC and hold classes at NOSC facilities. However, if this were done during the drill weekend, it would take time away from reservists' support of other Navy activities.

Another option would be to contract with institutions to create compressed courses that convene full-time for two weeks. The Navy may want to consider attendance in such a course as satisfying annual two-week Active Duty for Training (ADT) requirements for some types of reservists. This was a recommendation offered in the discussion groups.

The Navy should also consider partnering with local public IHLs to provide tutoring to reservists, perhaps on drilling weekends at the NOSC, if necessary. Many reservists may be reluctant to participate in the pilot if they have never attended college or if they feel that they have been out of college too long to be able to succeed in a college course, and they do not want to fail to be reimbursed for their costs. Support systems, such as those provided by tutoring on campus or at the NOSC, may help to reduce failure rates and increase the confidence of some of these reservists enough to encourage them to participate.

Other considerations

This section has focused on other ways of delivering the LREC skills within the requirements set forth by [1] for the pilot program. However, there are other options for the Navy to develop LREC skills, many of which the Navy already uses.

The Navy has increased heritage recruiting to bring in servicemembers who already have specific LREC capabilities. The IHLs that provide courses for the pilot program may also provide a rich source of pre-trained potential SELRES recruits with proficiency in a strategic language or culture. Hence, another option for increasing the inventory of reservists with these skills is to recruit from these programs.

Pre-deployment training is one avenue used to give servicemembers some critical LREC skills that they will almost certainly need during a deployment. In addition, the Navy could consider compressed courses, such as an introductory course in Arabic or Japanese, as requirements for all newly accessed members of SELRES, to be taken at the end of initial skills training.

Metrics

The 2009 NDAA authorized the pilot and required that the Secretary of Defense submit a report to Congress on the results of the pilot no later than 31 March 2012 [1]. The USD(P&R) memo that tasks the Navy with executing the pilot provides further guidance on reporting requirements, stating that the Navy's report to OSD should contain, at a minimum, "the number of reservists receiving this compensation, the education or training program study pursued by language and/or region, the effectiveness of the pilot in securing increased study and [a] recommendation on whether the pilot should be continued or expanded" [2].

This section presents our recommendations on the types of metrics and data the Navy should compile in order to satisfy the reporting requirements. It is worth noting that data issues will preclude us from the preferred method of analyzing program success—difference-in-difference estimation.[17]

Data

The Navy has tasked the Reserve Forces (RESFOR) N7 office with collecting the data on the pilot program and performing the preliminary analysis. We have suggested several pieces of information that should be collected and tracked.

In order to link pilot program participants to other personnel databases, personal identifiers such as SSN should be collected. As of now, there are no plans to add fields to the personnel files that would indicate participation in the pilot or development of these LREC skills, but in the long run this will be key to achieving return on the training investment and to calculating the available LREC capacity.

17. We describe the difference-in-difference methodology in appendix D and note the data limitations that make it infeasible for this program.

In addition to personal identifiers, information about the course taken should also be captured. The course level and discipline are necessary in order to calculate the appropriate incentive. From the requirements that OSD laid out, it is also necessary to track the language or region studied. To these, we also include the institution name, the course name, the number of credits, the cost of the course, course start date, and course end date. Further, some additional information that might prove useful could include whether the participant is enrolled in a degree program, and if so, the degree and major field of study. It might also be useful to know how many other courses the participant is taking. We also suggest collecting data on any education benefits he or she might be using and how much cost the participant is bearing out-of-pocket for the pilot program course. It should be made clear that this information will not affect the incentive that the participant receives. Finally, at the end of a course it will be necessary to collect the grade received in order to verify that the incentive should be paid.

Collecting these data will help RESFOR N7 provide appropriate metrics on the pilot program. In general, there are two sets of metrics that the Navy should compile regarding the pilot program: metrics to show whether the pilot is working overall and metrics to determine whether the incentive is appropriate or if adjustments need to be made.

Metrics to show whether the pilot is working

Given the lack of necessary data for the difference-in-difference methodology, we looked to other metrics that would show whether the pilot has been successful in terms of increased participation. Without a baseline of participation and without specific goals, it is difficult to define program success, but the metrics we discuss here should suffice for the purposes of the report to Congress.

The metrics on the number of reservists and the breakdown by language and/or region that USD(P&R) requests provide a general overview of participation in the pilot program, and give insight into its success. We suggest differentiating the analysis of participation even further in order to address problems with participation that may

emerge. We discuss these problems and the types of information necessary to address them in the next section.

There are also many outcomes that the Navy can look at to determine if the pilot has been successful in building the needed capability and to begin to measure the return on the Navy's investment. First, the Navy should look at the retention of participants in the program. If the intent of the pilot is to build a cadre of reservists with LREC skills, they will need to retain those that are trained. The pilot program provides a natural experiment to estimate the effect of LREC course participation on SELRES retention. While we wouldn't be able to fully quantify the relationship between LREC participation and retention without full pre- and post-pilot participation data, we can still estimate the continuation impact of the pilot program using continuation rates before and after the pilot is implemented. This analysis could provide a useful metric in determining whether to continue or expand the pilot program.

Promotion is another outcome that can be measured, looking at whether participants advance faster or at higher rates than non-participants, all else equal, and comparing these relative rates before and after the pilot began.

The pilot is being specifically targeted to those ratings and designators that are expected to have the most interaction with native populations, and these occupations are heavily mobilized. While there is no suggested policy that will target participants for mobilization, the Navy can still look at mobilization outcomes to measure return on its training investment. Do participants mobilize to an area that matches the language or region that they studied? Do participants mobilize at all? Are participants more likely to volunteer for mobilization or extend a mobilization? Do mobilized reservists who participated in the pilot receive better evaluations than non-participants?

One potential issue with the mobilization metrics is the dwell-time ratio for reservists. Navy reservists who are mobilized for a deployment are not eligible to mobilize again for a period five times the length of the deployment (a 1:5 ratio) [29]. Therefore, by targeting heavily mobilized ratings for the pilot, many participants may be in the dwell period and not eligible for mobilization.

Another measurable outcome of the pilot program relates to the proficiency level achieved through the program. While one course in a language may not bring one to a proficiency level where they would earn the FLPB, the Navy can look to see if reservists are taking multiple courses through the program, especially in sequence (like Japanese I and then Japanese II). Further, the Navy can look at DLPT test scores and FLPB recipients to see if program participants are more likely to take a DLPT and/or more likely to qualify for the FLPB after participation. It is possible that program participants may have already taken a DLPT, so another outcome could be higher test scores. Finally, are participants more likely than non-participants to transfer into a language or culture-related rating or designator, such as Cryptologic Technician - Interpretive (CTI) or Intelligence Specialist (IS) for enlisted reservists or Foreign Area Officer (FAO) for officers?

Finally, the Navy could analyze the impact of as Sailor's participation in the pilot on his or her peers. Sailors may be influenced by the success or difficulty of those around them in completing LREC courses of study, and the Navy could use a peer effect model to determine the role of peer influences on a Sailor's decision to pursue LREC study.

Metrics to determine whether pilot program adjustments are needed

The legislation authorizing the pilot program does not specify any metrics regarding the size or shape of the incentive, but determining these parameters is an imperfect process. This paper has described the analysis that underlies the decisions made, but the true test of the pilot parameters we have set will be in the response of reservists to the incentive.

We submit, however, that it is not enough to simply measure the absolute number of reservists who receive the bonus and determine that the participation rate is "sufficient" (absent goals for the pilot, however, even this determination is problematic). If only certain types of reservists are participating in sufficient numbers, or only certain languages or cultures are being studied, then the parameters of the incentive may not be sufficient to satisfy the Navy's longer range

strategic goals of expanding the pool of reservists with the necessary skills. Analysis of some key factors will provide insight into whether the incentive should be adjusted or restructured or whether other changes need to be made.

Potential pilot program problems

There are several problems that could potentially arise regarding the pilot program, and there are various causes of these problems. The first step in addressing problems, however, is to be able to accurately identify them. We define the following potential problems:

1. Not enough or too many officers and/or enlisted are participating.[18]
2. A disproportionate number are participating in certain ratings or designators, or paygrades.
3. Participation rates are skewed towards certain reservist characteristics, based on gender, race/ethnicity, marital status, etc.
4. Different geographic areas are not participating at sufficient rates.
5. Reservists are under- or over-selecting only certain languages or regions to study.

Similarly, we identify various potential causes for the problem:

1. The incentive is not sized correctly.
2. Reservists suffer a lack of information.
3. Reservists lack sufficient support.
4. Courses are not available.

Each issue can be met with different solutions, which is why understanding the cause of the perceived problems in participation is important.

18. If participation is higher than expected, the outlays from the incentive payment could divert funds that otherwise would go to other programs and could impact the Navy's ability to perform other vital missions.

Possible scenarios

As part of our research into metrics and potential issues with the pilot program, our sponsor asked us to discuss possible scenarios that might happen and suggest courses of action to improve the pilot program in each situation. We use our list of potential problems and solutions to derive various scenarios with the caveat, again, that without specific goals, these situations do not have much meaning. Further, there are multiple possible causes to these situations that should be understood before action is taken to fix them. That said, we discuss six potential scenarios:

1. Participation is generally too low.
2. Participation is generally too high.
3. Participation trends towards certain languages, regions, or disciplines.
4. Participation is skewed to a specific group or demographic.
5. Participation is skewed to a certain U.S. region.
6. Significant numbers of participants do not complete their course of study.

Scenario 1: Participation is generally too low.

In the first scenario we consider, OCNR feels that overall participation is too low, or OCNR defines a target participation goal and the pilot does not reach it. If this happens, there are several possible courses of action, dependent on what the root cause is believed to be. Increasing the incentive, across the board, would incentivize more participation. However, if lack of information is the problem then increasing the incentive would have minimal impact, and increasing the advertising would have more impact. Determining where gaps in participation exist, even if participation is generally too low, would help to target advertising and outreach. Finally, expanding the eligible pool of reservists to include additional ratings and designators could help increase participation.

Scenario 2: Participation is generally too high.

Conversely, participation may be deemed too high, especially from a budgeting perspective. The pilot program is being funded with Navy money, which means it is shifting funds from other programs. If participation is too high, there are again multiple options for the Navy to consider. First, decreasing the incentive would likely decrease participation and would help alleviate budgetary concerns. Reducing the eligible ratings and designators to reduce the potential participant pool or instituting a hard cap on participation would also be possible courses of action.

In a somewhat different course of action, the pilot program could switch to a two-tiered incentive, where the first piece is a tuition reimbursement and the second is a fixed bonus. This is aimed more at reducing the cost to the Navy rather than decreasing participation, and it will only reduce the cost to the Navy if participants are using other education benefits to pay for their course.[19] If that is the case, the pilot program incentive would not have to cover the tuition side, and would only have a smaller lump-sum bonus at the end.

Scenario 3: Participation trends towards specific languages, regions, or disciplines.

If OCNR determines that they need a broad range of LREC capacity and that participation is too focused in a specific area, they may need to adjust the incentive so that it is higher for those courses that are currently not being taken. Conversely, the incentive can be decreased for courses that are heavily taken. Another option would be to implement caps on specific courses, making it a first-come-first-served type of incentive where they only approve the incentive up to the cap. It is possible that the issue could be a lack of course availability or unfamiliarity with some of the less well known languages or regions.

19. We describe earlier that many participants will not be eligible for educational benefits. However, we might expect that the first cohort of participants will largely come from those already enrolled in degree programs, who may be using educational benefits to cover the cost of the course.

Providing demonstrations of languages or regional studies at the NOSC about the less popular courses could help increase participation. In the case of course availability, the Navy could consider contracting with IHLs to offer new courses that meet their needs.

Scenario 4: Participation is skewed to a specific group or demographic.

There is the potential that participants will primarily come from the same rating, paygrade, gender, race / ethnic group, or other subset of the eligible pool. If specific requirements are developed that set goals by any of these groups, the pilot program might need to be adjusted to meet these goals. OCNR should try to determine whether the non-participating groups have the same opportunity to take courses—perhaps a non-participating rating has experienced heavy mobilization—and determine if adjustments need to be made. The courses of action are similar to the third scenario: the incentive can be adjusted, both upwards and downwards, for groups that are under- or over-participating, or specific caps on participation can be instituted. For participation issues that vary by demographic characteristic, different bonus amounts would not work, and the Navy would have to look for other causes of the discrepancy in order to alleviate the problem.

Scenario 5: Participation is skewed toward a certain U.S. region.

Another possibility is that participants will be centered in certain NOSCs or grouped in certain regions of the U.S. This grouping could have an impact when the Navy tries to utilize the acquired skills; say, for example, that the Navy needs a West Coast unit but all of the participants, and therefore the LREC capacity, are on the East Coast. There are several possible reasons why this might occur. One possibility is that the NOSCs are not providing enough information or support to the reservists, and another is that the courses simply don't exist. In the first case, working with the specific NOSCs and targeting those NOSCs with additional advertising should increase participation. In the latter case, we suggest the Navy contract with local institutions to develop eligible programs. Another possibility is that the courses in non-participating areas have prohibitively high tuition costs. In that case, either increasing the incentive targeted to these areas or switching to the two-tiered bonus structure discussed before,

where one part is tuition reimbursement and the other part is a lump-sum bonus, should help alleviate those problems.

Scenario 6: Significant numbers of participants do not complete their course of study.

Collecting data up front on who has registered for pilot program courses will provide insight into the number of participants who start a program but either do not complete it or do not receive a passing grade and therefore are not eligible for the incentive. This scenario seems to be the clearest problem for pilot program success—if participants are not successfully completing their studies then the Navy will not be building any LREC capacity through the pilot.

There are again multiple courses of action if this scenario occurs. The Navy could survey participants to determine the causes of their non-completion. Depending on the results of this survey, the Navy could do several things. For example, tutoring programs and study groups could be created to help students complete their programs. These programs could be NOSC-based or centralized through online or distance learning. The Navy could also screen prospective participants by having them complete the Defense Language Aptitude Battery (DLAB)[20] and obtain a specified score, before entering the program. While this might help ensure that those who enter the program successfully complete the course, it might also bring participation down overall.

20. The military uses the DLAB to measure aptitude for learning a foreign language.

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The way ahead

The Navy is publishing an Office of the Chief of Naval Operations (OPNAV) instruction to implement the language and culture pilot program for the Navy Reserve. The instruction includes many of the recommendations CNA made during the course of developing the pilot, and they are summarized in this paper. However, the implementation of the pilot program is only the first step. Once the instruction is released, the Navy will need to advertise the program and begin to track the data of those who participate. The success of the pilot will depend on the Navy's ability to adapt the program once data are collected and on the Navy's progress in closing some of the gaps that exist overall in their LREC program.

The pilot program has been authorized to run until December 2013. However, the Navy must report on the pilot's success to OSD by November 2011. This timeline will include at most two academic years on which to collect data. However, there is still opportunity for the Navy to get useful feedback from the program and to revise it as necessary. We recommend reviewing the parameters on a semi-annual or annual basis to ensure that the pilot program is still targeting the desired groups—both the eligible population of reservists and the targeted languages, regions, and academic disciplines. The strategic language list is updated each year, and the review of pilot program parameters could coincide with that document's release.

Further, the Navy and DOD are still working to define requirements for LREC capabilities. The lack of these requirements is one of the main challenges to the success of any LREC program. If requirements are developed and validated during the timeline of the pilot program, the Navy should use those requirements to define goals for the pilot and adapt the program to meet those goals.

On the other hand, issues with identifying the inventory of LREC skills has also been a challenge. Metrics for these skills and tests for

proficiency, especially regional expertise, need to be developed in order to determine the capabilities that this pilot as well as other LREC programs truly provide.

Tracking the data on pilot program participation could be used as one measure of LREC skills attainment, and this could be very useful to the Navy moving forward. The pilot program data should be linked into the manpower and personnel data systems so that the Navy can both quantify and access its cadre of language- and regional-skilled servicemembers. The House Armed Services Committee (HASC) report includes as one of its general recommendations that the Services use a secondary occupational code or special experience identifier for general purpose forces with LREC skills, and that these identifiers be used by commanders for making assignments. On a related note, the Navy will have to determine to what degree these LREC skills degrade and what refresher training is necessary to maintain them.

In the long term, even after the pilot is completed, the Navy should continue to track relevant coursework as a measure of these skills. Further, the Navy should also consider policies that aim to utilize these LREC skills during mobilization. This does not mean the Navy should necessarily target LREC-skilled reservists for mobilization, but at the least they should try to match mobilization to skills, i.e. send a reservist with regional expertise in Southeast Asia to the Philippines rather than to the Caribbean. Tracking the data on what they studied would facilitate any such policy.

Finally, this paper has brought up several alternatives to consider, both in the structuring of the incentive and in the method of obtaining LREC capabilities. The Navy should weigh the costs and benefits of the alternatives and determine the best mix of incentives and training methods for achieving its LREC goals.

Appendix A: Proficiency levels

Interagency Language Roundtable (ILR) language skill level descriptions [30]

Scores for the Defense Language Proficiency Test (DLPT) are based on the ILR guidelines for language proficiency. Though typically DLPT tests listening, reading, and writing skills, with Oral Proficiency Interviews (OPIs) for testing speaking, we present the ILR language skill levels for all four categories—listening, reading, speaking, and writing.

Listening

Listening 0 (No Proficiency) No practical understanding of the spoken language. Understanding is limited to occasional isolated words with essentially no ability to comprehend communication.

Listening 0+ (Memorized Proficiency) Sufficient comprehension to understand a number of memorized utterances in areas of immediate needs. Slight increase in utterance length understood but requires frequent long pauses between understood phrases and repeated requests on the listener's part for repetition. Understands with reasonable accuracy only when this involves short memorized utterances or formulae. Utterances understood are relatively short in length. Misunderstandings arise due to ignoring or inaccurately hearing sounds or word endings (both inflectional and non-inflectional), distorting the original meaning. Can understand only with difficulty even such people as teachers who are used to speaking with non-native speakers. Can understand best those statements where context strongly supports the utterance's meaning. Gets some main ideas.

Listening 1 (Elementary Proficiency) Sufficient comprehension to understand utterances about basic survival needs and minimum courtesy and travel requirements in areas of immediate need or on very

familiar topics, can understand simple questions and answers, simple statements and very simple face-to-face conversations in a standard dialect. These must often be delivered more clearly than normal at a rate slower than normal with frequent repetitions or paraphrase (that is, by a native used to dealing with foreigners). Once learned, these sentences can be varied for similar level vocabulary and grammar and still be understood. In the majority of utterances, misunderstandings arise due to overlooked or misunderstood syntax and other grammatical clues. Comprehension vocabulary inadequate to understand anything but the most elementary needs. Strong interference from the candidate's native language occurs. Little precision in the information understood owing to the tentative state of passive grammar and lack of vocabulary. Comprehension areas include basic needs such as: meals, lodging, transportation, time, and simple directions (including both route instructions and orders from customs officials, policemen, etc.). Understands main ideas.

Listening 1+ (Elementary Proficiency, Plus) Sufficient comprehension to understand short conversations about all survival needs and limited social demands. Developing flexibility evident in understanding a range of circumstances beyond immediate survival needs. Shows spontaneity in understanding by speed, although consistency of understanding is uneven. Limited vocabulary range necessitates repetition for understanding. Understands more common time forms and most question forms, some word order patterns, but miscommunication still occurs with more complex patterns. Cannot sustain understanding of coherent structures in longer utterances or in unfamiliar situations. Understanding of descriptions and the giving of precise information is limited. Aware of basic cohesive features (e.g., pronouns, verb inflections) but many are unreliably understood, especially if less immediate in reference. Understanding is largely limited to a series of short, discrete utterances. Still has to ask for utterances to be repeated. Some ability to understand facts.

Listening 2 (Limited Working Proficiency) Sufficient comprehension to understand conversations on routine social demands and limited job requirements. Able to understand face-to-face speech in a standard dialect, delivered at a normal rate with some repetition and rewording, by a native speaker not used to dealing with foreigners,

about everyday topics, common personal and family news, well-known current events, and routine office matters through descriptions and narration about current, past, and future events; can follow essential points of discussion or speech at an elementary level on topics in his/her special professional field. Only understands occasional words and phrases of statements made in unfavorable conditions, for example through loudspeakers outdoors. Understands factual content. Native language causes less interference in listening comprehension. Able to understand facts; i.e., the lines but not between or beyond the lines.

Listening 2+ (Limited Working Proficiency, Plus) Sufficient comprehension to understand most routine social demands and most conversations on work requirements as well as some discussions on concrete topics related to particular interests and special fields of competence. Often shows remarkable ability and ease of understanding, but under tension or pressure may break down. Candidate may display weakness or deficiency due to inadequate vocabulary base or less than secure knowledge of grammar and syntax. Normally understands general vocabulary with some hesitant understanding of everyday vocabulary still evident. Can sometimes detect emotional overtones. Some ability to understand implications.

Listening 3 (General Professional Proficiency) Able to understand the essentials of all speech in a standard dialect including technical discussions within a special field. Has effective understanding of face-to-face speech, delivered with normal clarity and speed in a standard dialect on general topics and areas of special interest; understands hypothesizing and supported opinions. Has broad enough vocabulary that rarely has to ask for paraphrasing or explanation. Can follow accurately the essentials of conversations between educated native speakers, reasonably clear telephone calls, radio broadcasts, news stories similar to wire service reports, oral reports, some oral technical reports and public addresses on non-technical subjects; can understand without difficulty all forms of standard speech concerning a special professional field. Does not understand native speakers if they speak very quickly or use some slang or dialect. Can often detect emotional overtones. Can understand implications.

Listening 3+ (General Professional Proficiency, Plus) Comprehends most of the content and intent of a variety of forms and styles of speech pertinent to professional needs, as well as general topics and social conversation. Ability to comprehend many sociolinguistic and cultural references. However, may miss some subtleties and nuances. Increased ability to comprehend unusually complex structures in lengthy utterances and to comprehend many distinctions in language tailored for different audiences. Increased ability to understand native speakers talking quickly, using nonstandard dialect or slang; however, comprehension is not complete. Can discern some relationships among sophisticated listening materials in the context of broad experience. Can follow some unpredictable turns of thought readily, for example, in informal and formal speeches covering editorial, conjectural, and literary material in subject matter areas directed to the general listener.

Listening 4 (Advanced Professional Proficiency) Able to understand all forms and styles of speech pertinent to professional needs. Able to understand fully all speech with extensive and precise vocabulary, subtleties and nuances in all standard dialects on any subject relevant to professional needs within the range of his/her experience, including social conversations; all intelligible broadcasts and telephone calls; and many kinds of technical discussions and discourse. Understands language specifically tailored (including persuasion, representation, counseling, and negotiating) to different audiences. Able to understand the essentials of speech in some non-standard dialects. Has difficulty in understanding extreme dialect and slang, also in understanding speech in unfavorable conditions, for example through bad loudspeakers outdoors. Can discern relationships among sophisticated listening materials in the context of broad experience. Can follow unpredictable turns of thought readily, for example, in informal and formal speeches covering editorial, conjectural, and literary material in any subject matter directed to the general listener.

Listening 4+ (Advanced Professional Proficiency, Plus) Increased ability to understand extremely difficult and abstract speech as well as ability to understand all forms and styles of speech pertinent to professional needs, including social conversations. Increased ability to

comprehend native speakers using extreme nonstandard dialects and slang, as well as to understand speech in unfavorable conditions. Strong sensitivity to sociolinguistic and cultural references. Accuracy is close to that of the well-educated native listener but still not equivalent.

Listening 5 (Functionally Native Proficiency) Comprehension equivalent to that of the well-educated native listener. Able to understand fully all forms and styles of speech intelligible to the well-educated native listener, including a number of regional and illiterate dialects, highly colloquial speech and conversations and discourse distorted by marked interference from other noise. Able to understand how natives think as they create discourse. Able to understand extremely difficult and abstract speech.

Reading

Reading 0 (No Proficiency) No practical ability to read the language. Consistently misunderstands or cannot comprehend at all.

Reading 0+ (Memorized Proficiency) Can recognize all the letters in the printed version of an alphabetic system and high-frequency elements of a syllabary or a character system. Able to read some or all of the following: numbers, isolated words and phrases, personal and place names, street signs, office, and shop designations. The above often interpreted inaccurately. Unable to read connected prose.

Reading 1 (Elementary Proficiency) Sufficient comprehension to read very simple connected written material in a form equivalent to usual printing or typescript. Can read either representations of familiar formulaic verbal exchanges or simple language containing only the highest frequency structural patterns and vocabulary, including shared international vocabulary items and cognates (when appropriate). Able to read and understand known language elements that have been recombined in new ways to achieve different meanings at a similar level of simplicity. Texts may include descriptions of persons, places, or things; and explanations of geography and government such as those simplified for tourists. Some misunderstandings possible on simple texts. Can get some main ideas and locate prominent

items of professional significance in more complex texts. Can identify general subject matter in some authentic texts.

Reading 1+ (Elementary Proficiency, Plus) Sufficient comprehension to understand simple discourse in printed form for informative social purposes. Can read material such as announcements of public events, simple prose containing biographical information or narration of events, and straightforward newspaper headlines. Can guess at unfamiliar vocabulary if highly contextualized, but with difficulty in unfamiliar contexts. Can get some main ideas and locate routine information of professional significance in more complex texts. Can follow essential points of written discussion at an elementary level on topics in his/her special professional field. In commonly taught languages, the individual may not control the structure well. For example, basic grammatical relations are often misinterpreted, and temporal reference may rely primarily on lexical items as time indicators. Has some difficulty with the cohesive factors in discourse, such as matching pronouns with referents. May have to read materials several times for understanding.

Reading 2 (Limited Working Proficiency) Sufficient comprehension to read simple, authentic written material in a form equivalent to usual printing or typescript on subjects within a familiar context. Able to read with some misunderstandings straightforward, familiar, factual material, but in general insufficiently experienced with the language to draw inferences directly from the linguistic aspects of the text. Can locate and understand the main ideas and details in material written for the general reader. However, persons who have professional knowledge of a subject may be able to summarize or perform sorting and locating tasks with written texts that are well beyond their general proficiency level. The individual can read uncomplicated, but authentic prose on familiar subjects that are normally presented in a predictable sequence which aids the reader in understanding. Texts may include descriptions and narrations in contexts such as news items describing frequently occurring events, simple biographical information, social notices, formulaic business letters, and simple technical material written for the general reader. Generally the prose that can be read by the individual is predominantly in straightforward/high-frequency sentence patterns. The individual does not

have a broad active vocabulary (that is, which he/she recognizes immediately on sight), but is able to use contextual and real-world cues to understand the text. Characteristically, however, the individual is quite slow in performing such a process. Is typically able to answer factual questions about authentic texts of the types described above.

Reading 2+ (Limited Working Proficiency, Plus) Sufficient comprehension to understand most factual material in non-technical prose as well as some discussions on concrete topics related to special professional interests. Is markedly more proficient at reading materials on a familiar topic. Is able to separate the main ideas and details from lesser ones and uses that distinction to advance understanding. The individual is able to use linguistic context and real-world knowledge to make sensible guesses about unfamiliar material. Has a broad active reading vocabulary. The individual is able to get the gist of main and subsidiary ideas in texts which could only be read thoroughly by persons with much higher proficiencies. Weaknesses include slowness, uncertainty, inability to discern nuance and/or intentionally disguised meaning.

Reading 3 (General Professional Proficiency) Able to read within a normal range of speed and with almost complete comprehension a variety of authentic prose material on unfamiliar subjects. Reading ability is not dependent on subject matter knowledge, although it is not expected that the individual can comprehend thoroughly subject matter which is highly dependent on cultural knowledge or which is outside his/her general experience and not accompanied by explanation. Text-types include news stories similar to wire service reports or international news items in major periodicals, routine correspondence, general reports, and technical material in his/her professional field; all of these may include hypothesis, argumentation, and supported opinions. Misreading rare. Almost always able to interpret material correctly, relate ideas and "read between the lines," (that is, understand the writers' implicit intents in text of the above types). Can get the gist of more sophisticated texts, but may be unable to detect or understand subtlety and nuance. Rarely has to pause over or reread general vocabulary. However, may experience some difficulty with unusually complex structure and low frequency idioms.

Reading 3+ (General Professional Proficiency, Plus) Can comprehend a variety of styles and forms pertinent to professional needs. Rarely misinterprets such texts or rarely experiences difficulty relating ideas or making inferences. Able to comprehend many sociolinguistic and cultural references. However, may miss some nuances and subtleties. Able to comprehend a considerable range of intentionally complex structures, low frequency idioms, and uncommon connotative intentions; however, accuracy is not complete. The individual is typically able to read with facility, understand, and appreciate contemporary expository, technical, or literary texts which do not rely heavily on slang and unusual items.

Reading 4 (Advanced Professional Proficiency) Able to read fluently and accurately all styles and forms of the language pertinent to professional needs. The individual's experience with the written language is extensive enough that he/she is able to relate inferences in the text to real-world knowledge and understand almost all sociolinguistic and cultural references. Able to "read beyond the lines" (that is, to understand the full ramifications of texts as they are situated in the wider cultural, political, or social environment). Able to read and understand the intent of writers' use of nuance and subtlety. The individual can discern relationships among sophisticated written materials in the context of broad experience. Can follow unpredictable turns of thought readily in, for example, editorial, conjectural, and literary texts in any subject matter area directed to the general reader. Can read essentially all materials in his/her special field, including official and professional documents and correspondence. Recognizes all professionally relevant vocabulary known to the educated non-professional native, although may have some difficulty with slang. Can read reasonably legible handwriting without difficulty. Accuracy is often nearly that of a well-educated native reader.

Reading 4+ (Advanced Professional Proficiency, Plus) Nearly native ability to read and understand extremely difficult or abstract prose, a very wide variety of vocabulary, idioms, colloquialisms, and slang. Strong sensitivity to and understanding of sociolinguistic and cultural references. Little difficulty in reading less than fully legible handwriting. Broad ability to "read beyond the lines" (that is, to understand the full ramifications of texts as they are situated in the wider cultural,

political, or social environment) is nearly that of a well-read or well-educated native reader. Accuracy is close to that of the well-educated native reader, but not equivalent.

Reading 5 (Functionally Native Proficiency) Reading proficiency is functionally equivalent to that of the well-educated native reader. Can read extremely difficult and abstract prose; for example, general legal and technical as well as highly colloquial writings. Able to read literary texts, typically including contemporary avant-garde prose, poetry, and theatrical writing. Can read classical/archaic forms of literature with the same degree of facility as the well-educated, but non-specialist native. Reads and understands a wide variety of vocabulary and idioms, colloquialisms, slang, and pertinent cultural references. With varying degrees of difficulty, can read all kinds of handwritten documents. Accuracy of comprehension is equivalent to that of a well-educated native reader.

Speaking

Speaking 0 (No Proficiency) Unable to function in the spoken language. Oral production is limited to occasional isolated words. Has essentially no communicative ability.

Speaking 0+ (Memorized Proficiency) Able to satisfy immediate needs using rehearsed utterances. Shows little real autonomy of expression, flexibility, or spontaneity. Can ask questions or make statements with reasonable accuracy only with memorized utterances or formulae. Attempts at creating speech are usually unsuccessful.

Speaking 1 (Elementary Proficiency) Able to satisfy minimum courtesy requirements and maintain very simple face-to-face conversations on familiar topics. A native speaker must often use slowed speech, repetition, paraphrase, or a combination of these to be understood by this individual. Similarly, the native speaker must strain and employ real-world knowledge to understand even simple statements/questions from this individual. This speaker has a functional, but limited proficiency. Misunderstandings are frequent, but the individual is able to ask for help and to verify comprehension of native speech in face-to-face interaction. The individual is unable to produce continuous discourse except with rehearsed material.

Speaking 1+ (Elementary Proficiency, Plus) Can initiate and maintain predictable face-to-face conversations and satisfy limited social demands. He/she may, however, have little understanding of the social conventions of conversation. The interlocutor is generally required to strain and employ real-world knowledge to understand even some simple speech. The speaker at this level may hesitate and may have to change subjects due to lack of language resources. Range and control of the language are limited. Speech largely consists of a series of short, discrete utterances.

Speaking 2 (Limited Working Proficiency) Able to satisfy routine social demands and limited work requirements. Can handle routine work-related interactions that are limited in scope. In more complex and sophisticated work-related tasks, language usage generally disturbs the native speaker. Can handle with confidence, but not with facility, most normal, high-frequency social conversational situations including extensive, but casual conversations about current events, as well as work, family, and autobiographical information. The individual can get the gist of most everyday conversations but has some difficulty understanding native speakers in situations that require specialized or sophisticated knowledge. The individual's utterances are minimally cohesive. Linguistic structure is usually not very elaborate and not thoroughly controlled; errors are frequent. Vocabulary use is appropriate for high-frequency utterances, but unusual or imprecise elsewhere.

Speaking 2+ (Limited Working Proficiency, Plus) Able to satisfy most work requirements with language usage that is often, but not always, acceptable and effective. The individual shows considerable ability to communicate effectively on topics relating to particular interests and special fields of competence. Often shows a high degree of fluency and ease of speech, yet when under tension or pressure, the ability to use the language effectively may deteriorate. Comprehension of normal native speech is typically nearly complete. The individual may miss cultural and local references and may require a native speaker to adjust to his/her limitations in some ways. Native speakers often perceive the individual's speech to contain awkward or inaccurate phrasing of ideas; mistaken time, space, and person references; or to be in some way inappropriate, if not strictly incorrect.

Speaking 3 (General Professional Proficiency) Able to speak the language with sufficient structural accuracy and vocabulary to participate effectively in most formal and informal conversations in practical, social, and professional topics. Nevertheless, the individual's limitations generally restrict the professional contexts of language use to matters of shared knowledge and/or international convention. Discourse is cohesive. The individual uses the language acceptably, but with some noticeable imperfections; yet, errors virtually never interfere with understanding and rarely disturb the native speaker. The individual can effectively combine structure and vocabulary to convey his/her meaning accurately. The individual speaks readily and fills pauses suitably. In face-to-face conversation with natives speaking the standard dialect at a normal rate of speech, comprehension is quite complete. Although cultural references, proverbs, and the implications of nuances and idiom may not be fully understood, the individual can easily repair the conversation. Pronunciation may be obviously foreign. Individual sounds are accurate: but stress, intonation, and pitch control may be faulty.

Speaking 3+ (General Professional Proficiency, Plus) Is often able to use the language to satisfy professional needs in a wide range of sophisticated and demanding tasks.

Speaking 4 (Advanced Professional Proficiency) Able to use the language fluently and accurately on all levels normally pertinent to professional needs. The individual's language usage and ability to function are fully successful. Organizes discourse well, using appropriate rhetorical speech devices, native cultural references, and understanding. Language ability only rarely hinders him/her in performing any task requiring language; yet, the individual would seldom be perceived as a native. Speaks effortlessly and smoothly and is able to use the language with a high degree of effectiveness, reliability, and precision for all representational purposes within the range of personal and professional experience and scope of responsibilities. Can serve as an informal interpreter in a range of unpredictable circumstances. Can perform extensive, sophisticated language tasks, encompassing most matters of interest to well-educated native speakers, including tasks which do not bear directly on a professional specialty.

Speaking 4+ (Advanced Professional Proficiency, Plus) Speaking proficiency is regularly superior in all respects, usually equivalent to that of a well-educated, highly articulate native speaker. Language ability does not impede the performance of any language-use task. However, the individual would not necessarily be perceived as culturally native.

Speaking 5 (Functionally Native Proficiency) Speaking proficiency is functionally equivalent to that of a highly articulate well-educated native speaker and reflects the cultural standards of the country where the language is natively spoken. The individual uses the language with complete flexibility and intuition, so that speech on all levels is fully accepted by well-educated native speakers in all of its features, including breadth of vocabulary and idiom, colloquialisms, and pertinent cultural references. Pronunciation is typically consistent with that of well-educated native speakers of a non-stigmatized dialect.

Writing

Writing 0 (No Proficiency) No functional writing ability.

Writing 0+ (Memorized Proficiency) Writes using memorized material and set expressions. Can produce symbols in an alphabetic or syllabic writing system or 50 of the most common characters. Can write numbers and dates, own name, nationality, address, etc., such as on a hotel registration form. Otherwise, ability to write is limited to simple lists of common items such as a few short sentences. Spelling and even representation of symbols (letters, syllables, characters) may be incorrect.

Writing 1 (Elementary Proficiency) Has sufficient control of the writing system to meet limited practical needs. Can create by writing statements and questions on topics very familiar to him/her within the scope of his/her very limited language experience. Writing vocabulary is inadequate to express anything but elementary needs; writes in simple sentences making continual errors in spelling, grammar, and punctuation but writing can be read and understood by a native reader used to dealing with foreigners attempting to write his/her language. Writing tends to be a loose collection of sentences (or fragments) on a given topic and provides little evidence of conscious

organization. While topics which are "very familiar" and elementary needs vary considerably from individual to individual, any person at this level should be able to write simple phone messages, excuses, notes to service people, and simple notes to friends.

Writing 1+ (Elementary Proficiency, Plus) Sufficient control of writing system to meet most survival needs and limited social demands. Can create sentences and short paragraphs related to most survival needs (food, lodging, transportation, immediate surroundings, and situations) and limited social demands. Can express fairly accurate present and future time. Can produce some past verb forms but not always accurately or with correct usage. Can relate personal history, discuss topics such as daily life, preferences, and very familiar material. Shows good control of elementary vocabulary and some control of basic syntactic patterns, but major errors still occur when expressing more complex thoughts. Dictionary usage may still yield incorrect vocabulary or terms, although the individual can use a dictionary to his/her advantage to express simple ideas. Generally cannot use basic cohesive elements of discourse to advantage (such as relative constructions, object pronouns, connectors, etc.). Can take notes in some detail on familiar topics and respond to personal questions using elementary vocabulary and common structures. Can write simple letters, summaries of biographical data and work experience with fair accuracy. Writing, though faulty, is comprehensible to native speakers used to dealing with foreigners.

Writing 2 (Limited Working Proficiency) Able to write routine social correspondence and prepare documentary materials required for most limited work requirements. Has writing vocabulary sufficient to express him/herself simply with some circumlocutions. Can write simply about a very limited number of current events or daily situations. Still makes common errors in spelling and punctuation, but shows some control of the most common formats and punctuation conventions. Good control of morphology of language (in inflected languages) and of the most frequently used syntactic structures. Elementary constructions are usually handled quite accurately and writing is understandable to a native reader not used to reading the writing of foreigners. Uses a limited number of cohesive devices.

Writing 2+ (Limited Working Proficiency, Plus) Shows ability to write with some precision and in some detail about most common topics. Can write about concrete topics relating to particular interests and special fields of competence. Often shows surprising fluency and ease of expression, but under time constraints and pressure language may be inaccurate and/or incomprehensible. Generally strong in either grammar or vocabulary but not in both. Weaknesses or unevenness in one of the foregoing or in spelling result in occasional miscommunication. Areas of weakness range from simple constructions such as plurals, articles, prepositions, and negatives to more complex structures such as tense usage, passive constructions, word order, and relative clauses. Normally controls general vocabulary with some misuse of everyday vocabulary evident. Shows a limited ability to use circumlocutions. Uses dictionary to advantage to supply unknown words. Can take fairly accurate notes on material presented orally and handle with fair accuracy most social correspondence. Writing is understandable to native speakers not used to dealing with foreigners' attempts to write the language, though style is still obviously foreign.

Writing 3 (General Professional Proficiency) Able to use the language effectively in most formal and informal written exchanges on practical, social, and professional topics. Can write reports, summaries, short library research papers on current events, on particular areas of interest or on special fields with reasonable ease. Control of structure, spelling, and general vocabulary is adequate to convey his/her message accurately but style may be obviously foreign. Errors virtually never interfere with comprehension and rarely disturb the native reader. Punctuation generally controlled. Employs a full range of structures. Control of grammar good with only sporadic errors in basic structures, occasional errors in the most complex frequent structures, and somewhat more frequent errors in low frequency complex structures. Consistent control of compound and complex sentences. Relationship of ideas is consistently clear.

Writing 3+ (General Professional Proficiency, Plus) Able to write the language in a few prose styles pertinent to professional/educational needs. Not always able to tailor language to suit audience. Weaknesses may be in poor control of low frequency complex structures,

vocabulary, or the ability to express subtleties and nuances. May be able to write on some topics pertinent to professional/educational needs. Organization may suffer due to lack of variety in organizational patterns or in variety of cohesive devices.

Writing 4 (Advanced Professional Proficiency) Able to write the language precisely and accurately in a variety of prose styles pertinent to professional/educational needs. Errors of grammar are rare including those in low frequency complex structures. Consistently able to tailor language to suit audience and able to express subtleties and nuances. Expository prose is clearly, consistently, and explicitly organized. The writer employs a variety of organizational patterns, uses a wide variety of cohesive devices such as ellipses and parallelisms, and subordinates in a variety of ways. Able to write on all topics normally pertinent to professional and educational needs and on social issues of a general nature. Writing adequate to express all his/her experiences.

Writing 4+ (Advanced Professional Proficiency, Plus) Able to write the language precisely and accurately in a wide variety of prose styles pertinent to professional/educational needs. May have some ability to edit, but not in the full range of styles. Has some flexibility within a style and shows some evidence of a use of stylistic devices.

Writing 5 (Functionally Native Proficiency) Has writing proficiency equal to that of a well-educated native. Without non-native errors of structure, spelling, style, or vocabulary can write and edit both formal and informal correspondence, official reports and documents, and professional/educational articles including writing for special purposes which might include legal, technical, educational, literary, and colloquial writing. In addition to being clear, explicit, and informative, the writing and the ideas are also imaginative. The writer employs a very wide range of stylistic devices.

Regional proficiency levels

DOD Instruction 5160.70 [5] includes an enclosure with guidelines for regional proficiency levels. The enclosure begins with this introduction:

> The USD(P&R) has developed six regional proficiency skill level guidelines. The skill levels represent an individual's awareness and understanding of the historical, political, cultural (including linguistic and religious), sociological (including demographic), economic, and geographic factors of a foreign country or specific global region. Included in the higher skill levels is a knowledge of U.S. strategic and operational objectives in the country or region, and the ability to conduct critical analysis in applying all aspects of national power across the full range of military operations to most effectively achieve desired outcomes in the country or region. These guidelines are intended to provide the DoD Components with benchmarks for assessing regional proficiency needs, for developing initial and sustainment regional proficiency curricula at Service and JPME[21] schools, and for assessing DoD-wide regional proficiency capabilities. [5]

Regional Proficiency Skill Level 0+ (Pre-Novice) Aware of very basic facts about the country, region, or culture: location, size, neighboring countries, what language is primary, some facts about the government, major personalities, religion(s), some recent history. Knows some facts about the relationship between the region and the United States. Knows major social norms (e.g., "do's and don'ts"). May have received familiarization training about the area. Total exposure to learning about the country, region, or culture is likely to have been brief, possibly immediately prior to assignment or arrival to the region. May have briefly visited the country or region, or have known someone from the culture. Needs assistance in understanding or dealing with nearly every situation involving the country or culture. May have basic communication skills such as a few common greetings in the primary language of the region and some other words or phrases such as: "How much?" or "Where is?" Will have difficulty understanding responses in the language if not accompanied by gestures and drawings.

Regional Proficiency Skill Level 1 (Novice) Limited exposure to the country, region, or area of specialization. Less than 1 year of experience. Knowledge comes from a combination of education / military

21. JPME is Joint Professional Military Education.

experience, area studies, in-country assignments, travel, and specialized professional experience. Shows beginning ability to research and write summaries of events, but has limited ability to explain why the events are significant. Has some level of proficiency related to a job that has relevance to a country, region, or issue, but has very limited knowledge about the country, region, or issue (e.g., an F-16 mechanic who goes to Norway to work with Norwegian F-16 mechanics but knows very little about Norway). Has a basic survival-level understanding of the culture(s) and may have equally basic communication skills in the predominant language(s).

Regional Proficiency Skill Level 2 (Associate) Has 1 to 2 years of experience working in an area of specialization or focused on a country or region at least 50 percent of the time. Has a basic understanding of the region or country. May possess in-depth knowledge that is narrowly defined within a region. Unlikely to understand how specialized knowledge fits with larger regional issues (i.e., knows military threat, but does not understand economic and political infrastructure and implications). Can identify important events, but cannot explain why the event occurred or what might happen because of the event. Writes summaries and may present focused briefings on a narrow area of specialization. Knowledge comes from a combination of education, military experience, area studies courses, in-country assignments, travel, and other educational or professional experience. Has a limited understanding of culture(s). May have elementary communication skills including basic conversation ability in a language spoken in the country or region.

Regional Proficiency Skill Level 3 (Professional) Typically, 2 to 4 years of experience working in an area of specialization or focused on a country or region at least 75 percent of the time. Viewed as a knowledgeable and valuable resource for issues and trends particular to a region or area of specialization. Demonstrates in-depth understanding of a specific subject area and directly related factors that affect or influence that area. Has enough knowledge of the area to make judgments about it and back them up with arguments. Writes and presents overviews or focused briefings based on area of specialization. Knowledge comes from a combination of education, military experience, area studies courses, in-country assignments, travel, mentoring, and

specialized professional experience. Cultural experience reflects the knowledge of someone who has lived in a region or country for 1 year or more; has been immersed in the culture. Likely to have ILR level 2+ to level 3 proficiency in at least one language spoken in the country or region.

Regional Proficiency Skill Level 4 (Senior Professional) Typically, 4 to 7 years in a specialized area, in addition to general experience in a broader subject area. Has a deeper knowledge and understanding of most of the components of a region or country than many or even most natives of the country. Can create and defend novel viewpoints regarding the subject matter; knows the pros and cons of these viewpoints. Consistently identifies deficiencies that affect knowledge of the subject area; designs, advises, or implements appropriate solutions. Has experience initiating the development or drafting of requirements-related documents and takes the lead in responding to requirements levied by others. Has experience developing or drafting policy-related documents or providing major input to such documents. Has experience working directly with senior U.S. military officers or directly with senior U.S. country or regional policy officers on programs that significantly affect U.S. policy in a country or region. Routinely writes and delivers substantive briefings on aspects of the region or country. Knowledge comes from a combination of advanced graduate education, seminars, research, teaching, publishing, area studies courses, in-country assignments, travel, mentoring, and specialized professional experience. Cultural knowledge and experience allow the individual to blend easily in the culture. Almost always has ILR level 3 or higher proficiency in at least one of the languages spoken in the country or region.

Regional Proficiency Skill Level 5 (Expert) Has an in-depth, broad understanding of all aspects of the subject area with typically more than 7 years of specialized experience. Demonstrates deep understanding of issues and trends particular to an area of specialization. Anticipates problems or issues and develops solutions. Knows more than most educated people about the country or region and has a specialized knowledge of regional or country topics. Can discuss the political structure of the country in the context of abstract political theories and can apply these theories to explain or assess behavior, or

knows things about the structure most educated natives of the country would not know. Routinely writes and delivers authoritative papers and briefings to high-level officials on substantive and detailed subject areas. May have experience as a team leader or major contributor to a National Intelligence Estimate or a Theater Security Cooperation Plan related to a region or country. May have experience leading a national-level country team or serving as the DoD senior member of a national-level country team developing policy related to a country or region. Knowledge comes from a combination of advanced postgraduate education, advanced research, teaching, publishing, seminars, in-country assignments, travel, and specialized professional experience. Has the cultural knowledge of someone who is treated like a native by natives of the country; is considered very close to being their equal. Only a few, obscure, infrequent, or out-of-the way practices would be unknown. Would probably function as a member of the educated elite of that country or region. Almost always has ILR level 4 or higher proficiency in at least one of the languages spoken in the country or region.

ACE crosswalk

The American Council on Education (ACE) recently conducted a program review of the DLPT5 Listening and Reading Comprehension Test and the Oral Proficiency Interview (OPI) to determine whether the Defense Language Test Program was worthy of college-level credit recommendation [31]. They concluded that the tests were excellent methods of assessing language proficiency and that college credit would be awarded based on the level of proficiency on the tests. The credits also vary by the degree of language difficulty. Most of the languages included in the pilot are Category III or IV. We summarize those credits in table 6 below.

Table 6. ACE credit recommendations based on the DLPT5[a]

Language difficulty category/language	DLPT5 Level rating	Listening	Reading	Speaking
Category III				
Includes:	0+	2LD	2LD	2LD
Hindi	1	4LD	4LD	4LD
Kurdish-Sorani	1+	4LD+3UD	4LD+3UD	4LD+3UD
Pashto-Afghan	2	4LD+6UD	4LD+6UD	4LD+6UD
Persian-Dari	2+	4LD+9UD	4LD+9UD	4LD+9UD
Persian-Farsi	3	4LD+9UD	4LD+9UD	4LD+9UD
Serbian-Croatian	3+	4LD+10UD	4LD+10UD	4LD+10UD
Urdu	4	4LD+10UD	4LD+10UD	4LD+10UD
Category IV				
Includes:	0+	2LD	2LD	2LD
Arabic (Iraqi)	1	4LD	4LD	4LD
Arabic (Levantine)	1+	5LD+3UD	5LD+3UD	5LD+3UD
Arabic (Modern Standard)	2	5LD+7UD	5LD+7UD	5LD+7UD
Chinese-Mandarin	2+	5LD+10UD	5LD+10UD	5LD+10UD
Japanese	3	5LD+10UD	5LD+10UD	5LD+10UD
	3+	5LD+12UD	5LD+12UD	5LD+12UD
	4	5LD+12UD	5LD+12UD	5LD+12UD

a. Source: DLIFLC DLPT Program website [31].
LD refers to lower-division Baccalaureate/Associate degree credit, UD refers to upper-division credit

For instance, a reservist who scored a 0+ on a test of modern standard Arabic would be awarded 2 credits of lower division Associate / Baccalaureate credit. In our research, we have not found colleges that offer an introductory level language course for 2 credits. Rather, the majority are 4 to 5 credits. If we apply the credit conversion in reverse, then, we would estimate that servicemembers who take the first introductory or elementary level course in one of these languages would score either a 0+ or a 1 level of proficiency. This may be an upper bound, however, as we see from [13] that the Army's Special Forces Q course involves 4 to 6 months of intensive language training and still expects only a 0+ or 1 proficiency level.

Recall that the FLPB requires a minimum level 2 proficiency. For languages in both category III and IV, that level of proficiency would

confer upper division, in addition to lower division credits. Again, drawing on the research we conducted at numerous institutions regarding the number of credits lower division language courses typically confer, we conclude that prior to taking an upper division language course, a reservist would have to complete 4 or 5 lower division courses in that language. According to table 6, the upper division credits awarded for a level 2 proficiency imply an additional 2 or 3 courses, for a total of 6 to 8 courses in a language to attain a level 2 proficiency.

If we also use the ACE recommendations as a guide to the number and types of college courses necessary to attain various levels of proficiency then, to obtain a level 2 cultural proficiency may require 6 to 8 courses in the same region, and perhaps in various disciplines. For instance, a reservist may need to take one lower division course in history, religion, political science, economics of a particular region, and one or two upper division courses in one of these disciplines. Further, certain regional proficiency skill levels note the need for language skills as well. A level 1 proficiency may require half of these courses, and all at the lower division level.

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Appendix B: Education benefits

We researched the availability of various Veteran's education benefits that reservists might qualify for to offset the cost of courses eligible for the pilot. We describe these programs in this appendix.

GI Bill and Reserve Education Assistance Program (REAP)

The most significant education benefits for members of SELRES include the GI Bill, which varies depending on when servicemembers first access and how much time they have spent on active duty, and REAP. The post 9/11 GI Bill and the Montgomery GI Bill (MGIB) for active duty are authorized in Title 38 of the U.S. Code (chapter 33 and chapter 30, respectively). MGIB for members of the Select Reserve (MGIB-SR) and REAP are authorized in Title 10 of the U. S. Code (chapter 1606 and 1607, respectively). Table 7 below summarizes key features of the different GI Bill and REAP benefits.

The Department of Veteran's Affairs administers these benefits. According to their *Certifying Official's Handbook:*

> In all cases, a VA student must be pursuing an approved program of education. Payment is prohibited for pursuit of subjects that are designed for "career enhancement" or that are being taken because a school counselor "recommended" them. Courses pursued must be "required" for or otherwise apply to the student's degree program. [32]

Individuals who are not in an approved college program as a candidate for a degree are referred to as non-matriculated students. The handbook states that for these VA students:

> The enrollment should be for, but is not restricted to, no more than two terms.

Table 7. Education benefits[a]

	Post 9/11 GI Bill	MGIB - Active Duty	MGIB - SR	REAP
Eligibility	Member served on active duty for at least 90 days since 9/10/2001. For reservists, this includes only days on active duty in support of contingency operations. Days spent in initial entry training are not counted until SELRES member has at least 24 months of active duty	Member who first entered active duty on or after 7/1/85 and who had at least a 2-year enlistment Individuals commissioned as a result of an ROTC program are generally not eligible for Chapter 30 benefits	Member who has a 6-year obligation in SELRES signed after 6/30/85. Officers must have agreed to serve 6 years in addition to original obligation Must complete initial active duty for training (IADT)	Member of SELRES who serves on active duty on or after 9/11/01 under 10 USC, for at least 90 consecutive days under a contingency operation.
Benefits	(1) Percentage of tuition and fees (see criteria for amount of benefit below). Limited to in-state tuition for the highest priced undergraduate public IHL (2) Reservists receive monthly housing allowance equal to Basic Allowance for Housing (BAH) for an E5 with dependents if enrolled more than 1/2 time (3) Up to $1,000 annually for books (4) Tutorial assistance up to $100/month	Fixed monthly amount. For those completing at least a 3-year enlistment: Full time - $1,321 3/4 time - $990.75 1/2 time - $660.50 <= 1/4 time - $330.25 For those with less than 3 years of service, full-time monthly rate is $1,073.00	Fixed monthly amount Full time - $329 3/4 time - $246 1/2 time - $163 <=1/4 time - $82.25	Fixed monthly amount that varies with length of consecutive days of active duty (>90 days but less than 1 year, 1 year to less than 2 years, and 2 or more years) Full-time ranges between $528.40–$1,056.80 3/4 time varies between $396.30–$792.60 1/2 time varies between $264.20–$528.40 >=1/4 time varies between $132.10–$264.20
Level of benefit amount (Post 9/11 GI Bill only)	Based on qualifying active duty service >=36 months - 100% >=30 months - 90% >=24 months - 80% >=18 months - 70% >=12 months - 60% >=6 months - 50% 90 days - 40%			

a. Source: [33], [34]

A program of education, according to 38 CFR 21.7020(b)23(ii) is defined as:

> a combination of subjects or unit courses pursued at an educational institution. The combination generally is accepted as necessary to meet requirements for a predetermined educational, professional, or vocational objective.

And according to 38 CFR 21.3021(i), an educational objective:

> is one that leads to the awarding of a diploma, degree, or certificate which reflects educational attainment.

We conclude then that GI Bill benefits are not intended for servicemembers to take individual courses that are otherwise not part of a postsecondary degree program (which includes Associate degrees, Bachelor's degrees and postgraduate degrees). And while non-matriculated servicemembers may take courses up to 2 semesters, the decision to allow non-matriculated students to take courses at an IHL is the exclusive purview of the IHL's governing body. In fact, in our search of IHL policies, we found a number of institutions that will not allow non-matriculated students to enroll or that state that non-matriculated students are not eligible for veteran's benefits. So, while the law provides for some non-matriculated servicemembers to take courses, this is not universally available nor does it appear to be the intent of the legislation.

GI Bill benefits are also typically only provided for the first postsecondary degree in the same level (i.e. the first Bachelor's degree). Since officers already possess Bachelor's degrees, and the pilot is intended for undergraduate courses only, we conclude that officers who participate in the pilot will not be able to use GI Bill benefits to offset their costs.

On the other hand, nearly all four-year, and even some two-year colleges have a foreign language requirement, and both two- and four-year colleges require electives as part of a degree. It may be possible, therefore, for enlisted reservists who are receiving GI Bill benefits because they are matriculated students to take one or two courses that both qualify for the bonus and satisfy their degree requirements. We do not know how many reservists in the selected ratings this includes,

but since this only pertains to enlisted reservists who do not already have a college degree, are matriculated in a degree program, and still have electives or a foreign language requirement to fulfill, we surmise that this is a relatively small proportion of the total eligible population.

Tuition Assistance (TA)

TA is an educational benefit that reimburses servicemembers for the tuition of a college course taken during off-duty hours. The requirement that a course must be part of an education program to be eligible for reimbursement generally applies to TA as well. A few years ago, however, the Under Secretary of Defense (Personnel & Readiness) (USD(P&R)) issued a memorandum that exempted this requirement for foreign language courses. Specifically, the memorandum notes that the 2005 Defense Language Transformation Roadmap mandates increased opportunities for foreign language education as a matter of strategic interest and national security. In support of that effort, foreign language courses taken by servicemembers that are identified by the Under Secretary of Defense (Plans) as a strategic stronghold or immediate investment language do not have to be part of a postsecondary degree plan [20].

All of the Services may offer TA to members of SELRES, and in fact both the Army and Air Force offer TA to drilling reservists in good standing. Both Services reimburse 100 percent of tuition, up to $250 per credit hour, and up to $4,500 annually [35].

Navy enlisted reservists are eligible for TA benefits only if they are ordered to active duty for 120 days. Reserve officers are eligible if ordered to active duty for 2 years or more. For both enlisted and officers, they must be on active duty for the whole length of the course. In addition, officers must remain on active duty for at least 2 years upon completion of courses funded by TA [36]. Because of these restrictions, few, if any members of SELRES would be able to have the cost of a language or culture course covered by TA.

Public institution tuition benefits

According to a 2007 article in *USA Today*, many states provide tuition assistance to veterans attending public postsecondary institutions, and every state at that time provided assistance to members of its National Guard units [37]. For instance, Connecticut has waived tuition for veterans since 1974, Massachusetts waives tuition for all veterans, and Montana has allowed state colleges and universities to waive tuition for veterans since 1989.

The definition of an eligible veteran varies by state, and some states may only include servicemembers who have been discharged. It is beyond the scope of this study to estimate the number of reservists who are eligible for state-sponsored veterans' or servicemember's education assistance or financial aid, especially since states may also impose additional requirements, such as those we noted for the GI Bill (such as matriculation). We suspect, however, that relatively few reservists will qualify for these benefits who do not already qualify for the GI Bill. We anticipate that data collected as part of the pilot may also help to provide greater insight as to the availability of the various types of state-sponsored assistance.

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Appendix C: Discussion groups

Because the Navy's timeline in developing this pilot program was so tight, we were unable to administer a survey of potential participants to determine interest in the program and the most efficient incentive level. However, we felt it was necessary to get some feedback from reservists who could potentially participate in the program, so, in August 2009, we held discussion groups at four Navy Operational Support Center (NOSC) sites: NOSC Portland (August 1–2), NOSC Norfolk (August 8–9), NOSC Baltimore (August 15–16), and NOSC Bronx (August 22–23). In all, 17 discussion groups were held at the four NOSCs, and a total of 207 reservists participated.

Overview

Each discussion group began with a set of introductions and then a statement about the interest of VADM Debbink, Chief of Navy Reserve (CNR), in boosting the level of language skills, regional expertise, and cultural awareness (LREC) within the Navy Reserve. The Admiral's interest was put in the context of the Navy's Maritime Strategy that was issued in October 2007 [38]. The strategy emphasizes that prosecuting the Global War on Terror (GWOT) places a premium on cooperating with citizens of other countries, often in their countries and in their languages. It also speaks of the Navy's increasing role performing Humanitarian Assistance/Disaster Response (HA/DR) missions, such as relief to the victims of the tsunami that struck Indonesia in December 2004. Those relief missions have saved countless lives and have also helped improve the image of the U.S. overseas.

The reservists were informed that, in light of the Navy's new strategy statement, the CNR staff is developing a pilot program that would provide incentives for language and cultural study. We also told them that the discussion groups are being conducted to help shape that pilot program. It was emphasized that they were part of a select group of four NOSCs that were chosen to provide feedback. In effect, they

were not just speaking for themselves, but for the entire Navy Reserve. It was also emphasized that all feedback regarding the pilot program would remain anonymous. The intent of the discussion groups was to discuss the reservists' interest in language skills and cultural awareness and to brainstorm ways that the Navy might incentivize them to want to improve their abilities in those areas.

The discussion groups were scheduled for 90 minutes in length and averaged 11 participants each. The largest had 21 participants, and the smallest had four participants. Optimally, they all would have been sized at 8–12 participants each. That size range is preferred because it allows every participant an opportunity to contribute while not being so large or small as to be unworkable from the standpoint of the facilitator. About half of the discussion groups that we held fell outside that size range.

The discussion groups were also segregated by paygrade, with officers and chief petty officers separated from the rest of the enlisted participants. The rationale for doing so is that mixing junior with senior participants tends to inhibit the discussion. The more junior members may be inhibited from speaking freely by the presence of the officers and chiefs, and vice versa. Segregating the officers and chiefs from the rest of the enlisted participants ensures a more free and open discussion.

We also distributed comment cards to the participants at the end of each discussion group. The comment cards allowed the participants to offer more feedback that they possibly hadn't had an opportunity to provide during the group discussion. Time may have run out during the discussion, or some participants may have been reluctant to speak up in a group setting. Many participants took the opportunity to write comments on the back of the cards, which had been left blank for that purpose. Those back-of-the-card comments represented a rich source of feedback. The front of the cards contained a few demographic questions to identify gender, paygrade, and officer / enlisted community and a few questions about experience and interest in other languages and cultures. The last question asked about the lump-sum figure that would incentivize the reservists to take a single college course in either language or cultural studies. That question had already been asked of every participant during the group discussion. It was included in the comment card in case any of the reservists

might have had second thoughts about the lump-sum figure that they had volunteered earlier. The discussion group feedback on the size of the lump-sum incentive was very similar in both the group discussion and the individual comment card responses. We discuss the specific results later in this section.

Participants

All but seven of the 207 reservists who attended the discussion groups completed comment cards, making for a response rate of 97 percent. The comment cards are the only data we have on the paygrades and occupations of the participants. A breakdown of the 200 reservists who completed comment cards is provided in table 8.

Table 8. NOSC discussion group participation

	Officer participants	Enlisted participants	Total participants
NOSC Portland	1	51	52
NOSC Norfolk	18	22	40
NOSC Baltimore	3	29	32
NOSC Bronx	10	66	76
Totals	32	168	200

The 200 reservists who completed comment cards included 32 officers and 168 enlisted reservists. NOSC Bronx had the largest turnout, with 76 reservists. Next was NOSC Portland (52), followed by NOSC Norfolk (40), and NOSC Baltimore (32). We spend 1 day at NOSC Balitmore and 2 days at the other three NOSCs. Each NOSC had more enlisted than officer participants. NOSC Norfolk had the most officers, with 18.

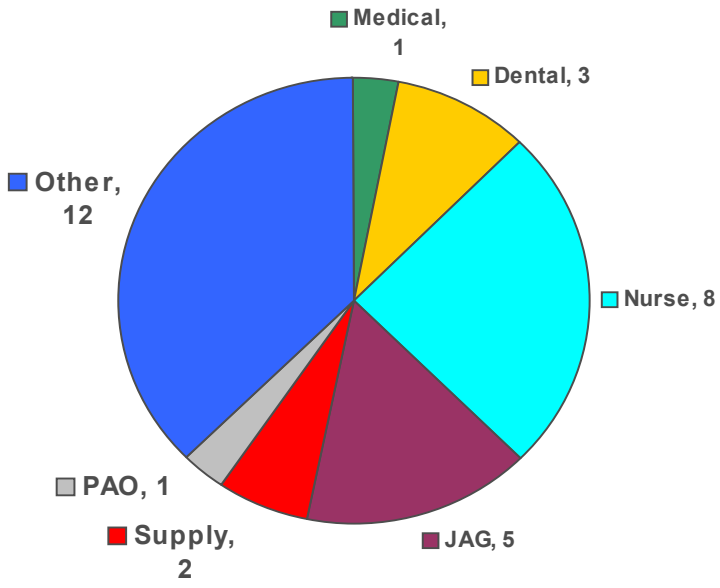
The sponsor requested that we only invite participants who would be eligible for the pilot program to the discussion groups. Eligibility was based solely on occupation, focused on ratings and designators that are most likely to interact with host nation populations during a mobilization. The eligible officer designators are 1655 (Public Affairs), 2105 (Medical Corps), 2205 (Dental Corps), 2505 (JAG Corps), 2905 (Nurse Corps), 3105 (Supply Corps), 4105 (Chaplain Corps), and 5105 (Civil Engineering Corps). The list also included

the following enlisted ratings: BU (Builder), CE (Construction Electrician), CM (Construction Mechanical), EA (Engineering Aid), EO (Equipment Operator), HM (Hospital Corpsman), MA (Master-At-Arms), MC (Mass Communications Specialist), SW (Steelworker), and UT (Utilitiesman). BU, CE, CM, EA, EO, SW, and UT are ratings that are associated with the Navy Seabees.

The commands that we visited were provided in advance with the eligible ratings and designators from which to gather participants. They did what they could to maximize turnout within the subset of their reservists from those officer and enlisted communities. Yet, due to the high interest in the prospect of a cash incentive for off-duty foreign-language study, there were other reservists at each NOSC who opted to join the discussion. There was no way to know who was eligible and who wasn't until after the fact, from a review of the comment cards. Of the 200 reservists who completed comment cards, 116 (58 percent) had officer designators or enlisted ratings that are eligible to participate in the pilot program.

Figure 2 provides a breakout of the officers who participated, by designator.

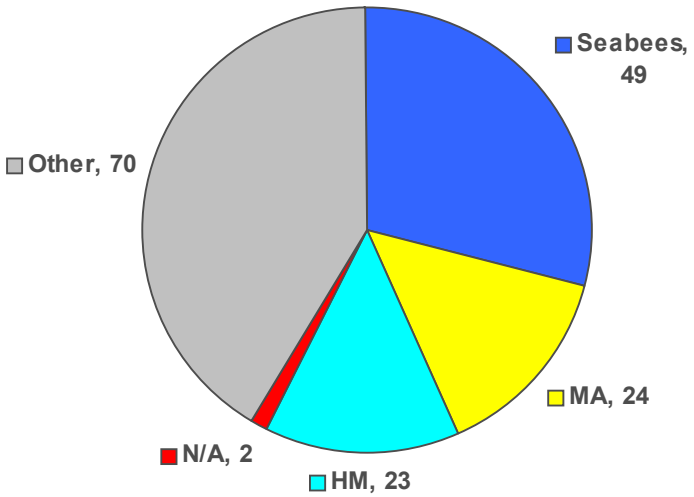
Figure 2. Officer participants



Of the 32 officers who participated, 20 had designators that were eligible for the pilot program. The Nurse Corps topped the list, with eight officers. Next was the JAG Corps, with five officers. The other seven officers were a mix of Dental Corps, Supply Corps, Medical Corps, and PAO.

A breakout of the enlisted participants, by rating, is provided in figure 3.

Figure 3. Enlisted participants



The 168 enlisted participants included 96 with eligible ratings. Just over half of the eligible participants, 49, were from the seven Seabee ratings. The remainder were split between the MA and HM ratings. None of the participants had the MC rating.

Findings

The discussion group participants were generally supportive of the Navy Reserve's promotion of language skills and cultural awareness. They may not have been familiar with the new Maritime Strategy, but they understood that the Navy is becoming more expeditionary and that this more expeditionary focus means that when they are mobilized for active duty, they will increasingly be called upon to interact directly with citizens of other countries. Most of the reservists were

enthusiastic about the prospect of receiving some kind of financial incentive for the study of other languages or cultures.

They expressed a few concerns about the CNR pilot program, though. Some worried that a "one-size-fits-all" incentive might not be practical given tuition differences between states. There were also concerns about the availability of qualifying courses at local colleges. Many colleges do not offer courses in some of the more obscure languages on the CNR list; many offer courses in Chinese or Japanese, though. Another concern that some reservists voiced was that the Navy might tag them for mobilization to the country or region that they had studied (such as the Middle East). The flip side of that was a concern voiced by other reservists that the coursework might be "a waste of time" because they would never have the opportunity to put their newly acquired skills to use.

Incentive

One of the main goals of the discussion groups was to ascertain the bonus amount that would incentivize reservists to participate in the program. Each discussion group voted on the value of the lump-sum incentive that would stimulate the reservists to participate in the pilot program of one course in either language or cultural study. The ground rules were that they were told to assume that college-level courses were locally available and that the per-course tuition would be $800–$1000. Only courses that dealt with the languages or regions on the CNR-approved list would be eligible for reimbursement. The median lump-sum incentive for all the discussion groups was $2,500.[22]

That $2,500 lump-sum incentive is more than twice the per-course tuition that the reservists were told to assume for discussion purposes. As such, it needs to be put in context. To begin with, anything less than full tuition reimbursement was a non-starter for the reservists. They believed very strongly that, if language or cultural study is a priority for the Navy Reserve, then they should not have to pay for it out-

22. The median represents the amount that would incentivize 50 percent of the reservists to take a course.

of-pocket. They also commented that tuition isn't the sole expense involved. There would be other expenses for books and travel, as well as childcare for those reservists with children. Plus, their time is important to them. The incentive would need to compensate them for their time away from their families and jobs. Another consideration was the time value of the reservists' money, in that they would have to pay for the course up-front but would be reimbursed later, upon completion of the course. The reservists also factored in some consideration of the risk of not passing the course and thus not receiving any tuition reimbursement.

Reservists were also asked about the desired incentive size on the comment cards. Inclusion of the question on the comment card ensured that everyone had a chance to indicate their preference without any group pressure. It also permitted an analysis of the subset of responses for those who would be eligible to participate in the pilot program.

Of the 116 eligible reservists who completed comment cards, 99 answered the question by volunteering a dollar figure. The median value of the lump-sum incentive for those who answered the question was $2,500. That finding was consistent with the discussion-group median of $2,500.

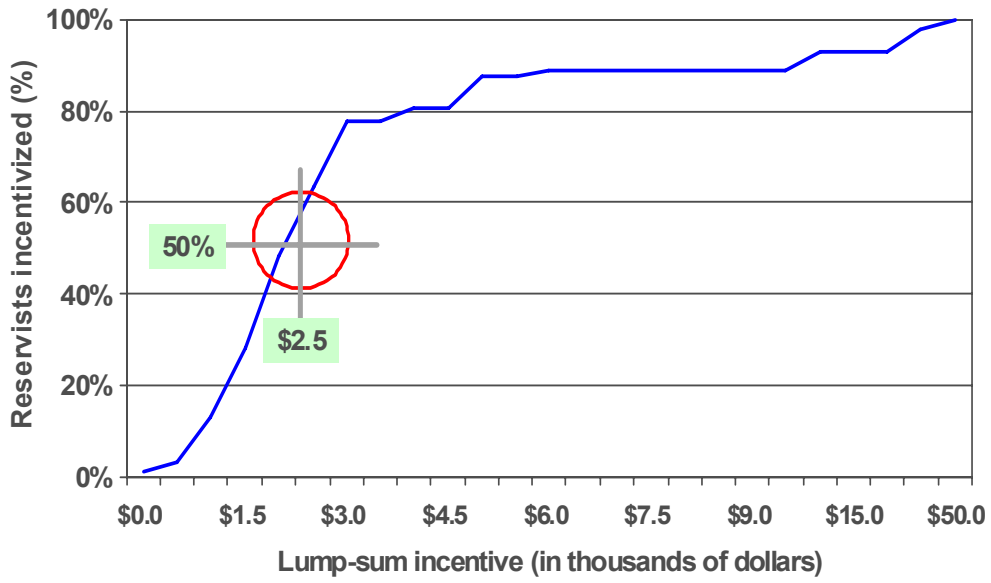
As might be expected, the median for the officer reservists was greater than that for the enlisted reservists. There were 18 eligible officer reservists and 81 eligible enlisted reservists who indicated a lump-sum incentive amount on the comment card. The officers' median lump-sum incentive was $5,000—more than twice the enlisted reservists' median of $2,000. One possible reason for the difference is that most officers already possess college degrees, and so the prospect of further college-level coursework in a language or region is less attractive to them than it might be to an enlisted Navy reservist who may not possess a college degree but hopes to finish one eventually. Officers typically earn more and therefore have higher opportunity costs as well.

Within the subset of eligible officers, the JAG officers stood out. The 20 eligible officers included five JAG officers. Three of the five indicated a lump-sum bonus of $25,000 on their comment cards. (The

other two indicated $5,000.) The explanation that they gave for the especially large lump-sum incentive is that lawyers and others in the legal profession are very sensitive about their "billable hours". To them, time is money—and lots of it.

Figure 4 plots a cumulative distribution of the responses for the 99 eligible reservists who volunteered a lump-sum figure on their comment card.

Figure 4. Cumulative distribution ("supply curve") for the eligible reservists' lump-sum incentive



In economic terms, figure 4 could be said to represent the 99 eligible reservists' "supply curve" for off-duty language and regional study. It depicts, for $500 increments in the lump-sum incentive, the fraction of reservists who would be stimulated to participate in the pilot program. One reservist indicated a willingness to participate in the pilot program for free. Two more were willing to participate for $500. Another $500 stimulated ten more, and so on. At $2,000, not quite half of the respondents—48 percent—were willing to participate. It took $2,500 to incentivize at least half of the respondents. By $4,000, more than 80 percent were willing to participate. Beyond that point,

the diminishing returns from boosting the incentive became pronounced. Getting the last 20 percent to participate in the program was very expensive. An incentive of $10,000 was required to obtain 90 percent participation. It took $25,000 to achieve 95 percent participation. The last holdout wouldn't participate for anything less than $50,000.

The supply curve underscores the utility of looking at the lump-sum incentive that would stimulate the median reservist to participate, as opposed to 100 percent participation. Some reservists have little time or inclination to take a college-level course in a language or region. Their jobs and families may leave little time for study. Or they may already possess a college degree—or even a graduate-level degree—and regard their formal education as complete. Or they may simply not be interested in languages or regional study. As such, getting all eligible reservists to participate in the program could be prohibitively expensive. The median is much less expensive. Lower levels of participation are less expensive still. Figure 4 shows that an incentive of $1,500 stimulated 28 percent of the eligible reservists in the sample.

What about the ineligible reservists? There were 84 ineligible reservists who completed comment cards. Of those, 76 answered the last question about the lump-sum incentive and provided a dollar figure. Their median incentive was also $2,500. There was essentially no difference between the eligibles and the ineligibles in terms of their willingness to participate in the pilot program.

Alternatives

Though the sponsor had already settled on offering a one-time lump-sum bonus for participation in the pilot program, we also asked the reservists to brainstorm other incentive possibilities. A list of options was generated and a vote was taken of how many reservists would be incentivized by each one. Following is a list of the other options that were suggested, in descending order of popularity:

1) Full tuition reimbursement

The most popular of the alternatives, it would provide for 100 percent reimbursement of tuition for a qualifying college-level course in

language or regional study. It could be administered in a manner similar to the Navy's current Tuition Assistance (TA) program for off-duty college study, for which only those serving on active duty are eligible. The TA program currently provides for 100 percent tuition reimbursement for up to 16 semester hours of off-duty college-level coursework per year.

2) Drill credit ("flex drill")

This option envisioned that reservists would receive drill credit for time spent in class. A 4-credit course, for example, would represent 60 hours of drill credit, assuming a 15-week semester. That drill credit would count toward the reservists' annual drill requirement.

3) Retirement credit

This would be similar to option #2 in that it would credit the reservists, for retirement purposes, with time spent in class. It was less popular than option #2 because not all the reservists in the discussion groups were planning on continuing to serve in the Navy long enough to eventually be able to retire with a pension.

4) Guarantee of 2–3 weeks' linked active duty time (ADT)

A novel suggestion of the reservists was the guarantee of active duty time (ADT) in connection with the language or region that had been studied. The ADT could be for a modest period of, say, 2 or 3 weeks. This option was popular with those who were concerned that their language or regional study might be a "waste of time" in that they would not have the opportunity to apply what they had learned.

5) Exam promotion points

Some of the junior and mid-grade enlisted reservists were interested in the Navy's recognizing their LREC study by awarding them one or two promotion points toward their next exam cycle. They understood that the extra points could boost their promotion chances. Awarding exam promotion points would not benefit the chief petty officers and officers, though, because they don't take promotion exams.

6) Award of a new Navy Enlisted Classification (NEC) or Additional Qualification Designation (AQD) for LREC study

The least popular of the options was the award of a NEC for enlisted reservists or an AQD for officer reservists in connection with their language or cultural study. No such NEC or AQD exists at present; new ones would have to be created. While the reservists appreciated the recognition that an NEC or AQD would represent, this option was the least popular because there was no assurance that it would yield a tangible benefit such as compensation or promotion.

The ranking of the options reflects the incentive effect of each one separate from the others. However, there could also be opportunities to mix and match. For example, an award of an NEC/AQD could be combined with an award of promotion points. Or, it could be combined with a less generous lump-sum incentive of, say, $1,000 (instead of $2,500). The lone exception is that the lump-sum incentive and the full tuition reimbursement could not be combined. Any financial incentive for college-level study would need to be along the lines of one or the other.

In addition to alternatives for the incentive, the discussion groups also suggested alternatives for developing LREC capabilities. The reservists suggested some on-line options for the Navy to consider. A number of reservists mentioned that the Army had posted Rosetta Stone language coursework to Army Knowledge Online (AKO). The Navy, they suggested, could do the same by making Rosetta Stone available via Navy Knowledge Online (NKO). Or the Navy could post some other tailored language curriculum to NKO. However, a few spoke of experiencing problems with obtaining access to NKO from home.

Another possibility that the reservists suggested was to bring the instructors to the Navy and hold the courses at each of the NOSC facilities. Each NOSC could become a mini Navy Campus for language and cultural study. The challenge of that plan would be when to hold the courses. Holding them during the drill weekend would subtract time from other planned drill activities. Holding them during other weekends or evenings would not be convenient for reservists who have to travel long distances to the NOSC. Some of the

reservists who drilled at NOSC Portland, for example, said that they came from Idaho—more than 200 miles away.

Languages and regions

Given a choice of language study or cultural study, the reservists in the discussion groups preferred the former over the latter. A vote was taken during each discussion group and language study was always the winner. The reservists' primary rationale for preferring language study was their impression that language skills can be more marketable in the civilian workplace. A secondary rationale of theirs was that language study usually includes a cultural component, more so than the other way around.

The comment cards also asked respondents which of six academic disciplines they would be interested in studying for the key regions. The disciplines were anthropology, geography, history, language, political science, and religion. More than half of the eligible reservists, 61, indicated an interest in language study. It was the most popular of the disciplines. Next was history, with 36 affirmative responses. The other four were clustered together, with between 15 and 20 affirmative responses. All but seven respondents indicated an interest in at least one of the six disciplines.

We also included some LREC-related questions on the comment cards, asking whether participants already had any language or regional skills, and then which languages or regions interested them.

Few of the reservists identified themselves as fluent in any of the 21 critical foreign languages on the CNR list. Only 26 of the 116 eligible reservists—officer and enlisted—indicated at least a minimal level of fluency in any of the languages that were listed. Topping the list was Japanese with seven reservists, followed by Arabic with six reservists. Interest in language study was nearly universal, though.

All but four of the 116 eligible reservists indicated an interest in studying one of the languages on the CNR list. Their top choice was Arabic, with 63 reservists expressing an interest in studying that language. Their next three choices were Japanese (45), Chinese (37), and a tie between Korean and Persian (25). The number of affirmative

responses was greater than the number of respondents because many reservists volunteered that they would be willing to study more than one language. Every language on the CNR list had at least one reservist express an interest in studying it.

Only 43 of the 116 eligible reservists responded that they possessed a special awareness of one or more of the regions that CNR identified. The regions of greatest familiarity were Middle East/North Africa (18) and South Asia (14). Interest in studying about the regions was high, though, as all but nine of the eligible reservists volunteered that they would like to study at least one of the regions. East Asia was the most popular region, with 46 respondents indicating an interest in its study. It was followed by South Asia (40), Middle East/North Africa (39), and Eastern Europe (36).

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Appendix D: Difference-in-difference methodology

The outcome of interest to the Office of the Secretary of Defense (OSD) and Congress is whether the pilot program is effective in generating LREC skills. Specifically, for this pilot, the outcome will be whether the program influences reservists' decisions to take courses related to the desired languages or regions. One methodology used to evaluate this sort of program is difference-in-difference estimation. Ideally we would be able to measure the outcome of interest—participation in LREC courses of study—before and after the pilot was initiated, for both the group of eligible reservists and non-eligible reservists (referred to as the treatment and control group, respectively).

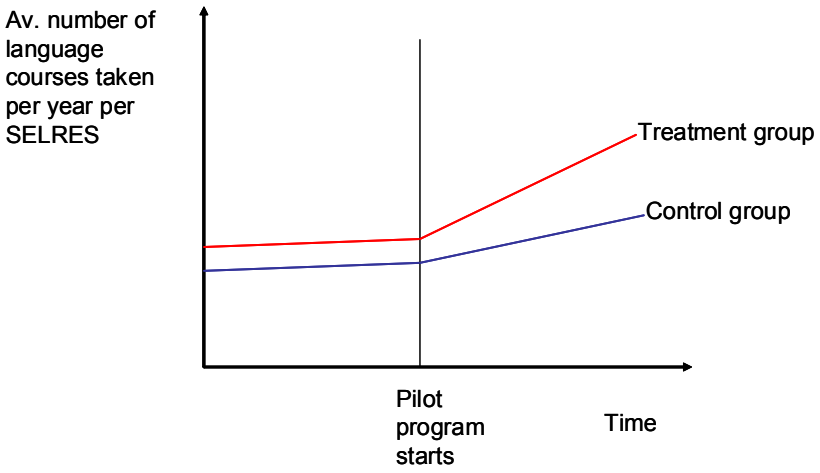
Table 9 shows a simple difference-in-difference example of measuring the treatment effect of the pilot program. The letters "A," "B," "C," and "D" are placeholders for whatever outcome of interest is being measured, e.g., LREC course participation. For example, we would use pre- and post-pilot data on the control and treatment to estimate the effect of the bonus on LREC course participation. The resulting difference-in-difference estimate is the treatment effect of the pilot program and would quantify the effect the pilot program had on LREC course participation.

Table 9. Simple difference-in-difference example

	Time period		
	Before pilot program (1)	After pilot program (2)	Difference (2) - (1)
Treatment group	A	B	B-A
Control group	C	D	D-C
Difference-in-difference			(B-A)-(D-C)

Figure 5 provides an illustration of the data needed to analyze the effect of the pilot program on LREC course participation.

Figure 5. Hypothetical example of number of courses taken by treatment and control groups

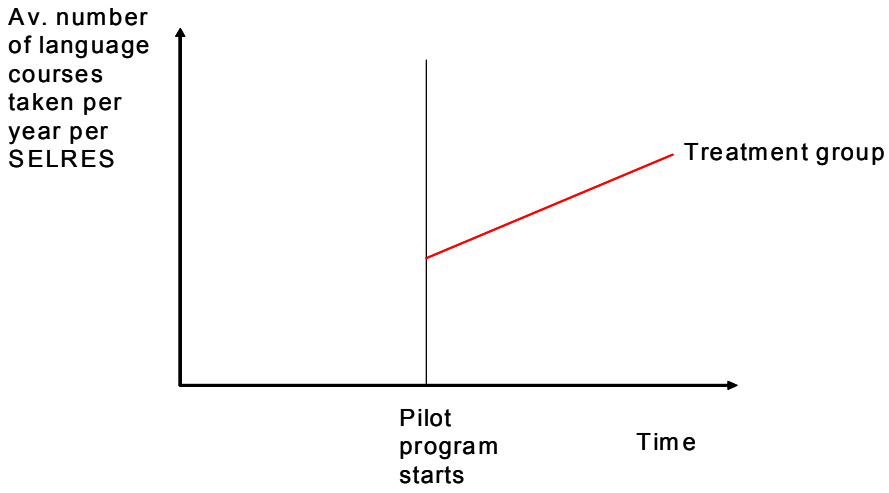


Data issues

The difference-in-difference methodology requires data from before and after the pilot's inception, for both the treatment and control groups. Unfortunately, there is a lack of "before" data for either group, as well as the difficulties in collecting "after" data for the non-eligible ratings. Without these pieces of information, the analysis of the outcome of LREC course participation implicitly assumes that pre-pilot LREC course participation for each group was zero and LREC course participation level for the non-eligible ratings is still zero after implementation of the pilot program. Figure 6 provides an illustration of what the analysis looks like given the data limitations.

Given the problems with available data, the difference-in-difference methodology is not feasible for the analysis of this program.

Figure 6. Hypothetical example illustrating data that will be collected on LREC course participation



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