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BRIEFING

An Analysis of Sabbatical Leaves for Navy Surface Warfare Officers

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PREFACE

Because the career track for Navy Surface Warfare Officers (SWOs) keeps them at sea for extended periods, they have less time available for their families or for attending to other personal needs. The Commander, Navy Personnel Command, is considering implementation of various programs that would provide SWOs with sabbatical leave options, which could allow them to return to, or remain in, service.

Sabbatical leave programs may mitigate the effects of this challenging career path and, in return, may help sustain the long-term health of the SWO force. The options under consideration include a facilitated return to service, allowing those who have separated an increased opportunity to return; a one-year leave of absence with medical, dental, and commissary benefits; and a personal leave option that would allow a SWO to take extended time on leave between duty stations.

The Assistant Commander, Navy Personnel Command, sponsored this project. This briefing was the result of a quick-turnaround evaluation of whether these programs might, indeed, help the Navy meet its goal of retaining more SWOs. The briefing describes the programs under consideration, evaluates the likely return on investment through changes in strength and accession levels for each program, and provides concluding observations. Our findings should be of interest to military personnel managers, analysts, and policymakers interested in the issue of sabbatical leave.

This research was conducted for the Department of the Navy within the Forces and Resources Policy Center of RAND's National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the unified commands, and the defense agencies. Comments are welcome and may be addressed to Harry J. Thie, thie@rand.org.

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An Analysis of Sabbatical Leaves for Navy Surface Warfare Officers

***Roland J. Yardley, Kevin Brancato,
Harry J. Thie, Megan Abbott***

In recent years, the Navy has begun to experience retention challenges among its Surface Warfare Officers (SWOs). These challenges stem in large part from SWOs' sea-duty-intensive career path that keeps them away from their homeports for extended periods, reducing the time they have to devote to their families or to attend to other personal needs.

In response to these retention concerns, the Navy is considering several programs that allow greater accommodation of the personal needs of its SWOs, particularly through the increased use of sabbatical leaves. To assist in this process, the Navy asked RAND to evaluate three potential extended-leave programs:

- a facilitated return to service (RTS) option that would provide those who have left the Navy an opportunity to return to service
- a one-year leave of absence (LOA)
- a personal leave (PL) option that would offer all SWOs up to three months of leave between duty stations.

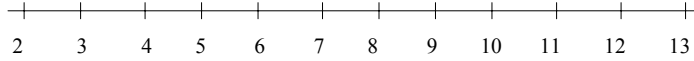
The Navy requested a quick-turnaround analysis to determine whether these programs might be beneficial for retention of more SWOs. This documented briefing provides the findings of our analysis. Specifically, the briefing

- describes the parameters of the programs as developed through discussions with the research sponsor
- outlines the process by which we calculated the potential cost savings of each program, based on associated changes in strength and accession levels

- addresses the relevant manpower implications
- provides concluding observations based on the analysis.

SWOs Initial Career Path

NDRI



- **Initial Training**
- **Division Officer Tour Options**
- **Shore Tour**
- **Department Head School (DHS)**
- **Department Head Tours**

RAND

At the heart of the Navy’s concerns over SWO retention rates is that so few officers remain in the Navy long enough to serve as department heads (normally 10.5 years of commissioned service). To understand the difficulty in retaining officers to this stage, it is important to appreciate the particular challenges of the SWO career path. Much of a SWO’s sea duty occurs during the first half of his or her career. Thus, if SWOs complete their department head tours, a good portion of the concentrated sea-duty assignments and extended time away from home is already behind them. These extended sea-duty tours during an officer’s first 10.5 years, however, are presumed to be a key factor in officers’ decisions to leave the service before they reach the point at which they are considered for department head school.

Let us consider the SWO career path in more detail. A SWO’s initial assignment is aboard a ship as a division officer, where he or she serves from 30 to 42 months. Officers complete their SWO qualifications during these initial assignments, after which they continue on to various post-division officer shore tours. These tours can include attending the Naval Postgraduate School or taking advantage of another graduate education opportunity or an assignment onshore in the vicinity of the home port of the last assigned ship.

Also during this time, Navy Personnel Command selects SWO-qualified officers to attend Department Head School (DHS). This course, given in Newport, RI, prepares officers to head a department on a surface ship. After completing DHS, officers normally complete two consecutive 18-month tours at sea. While on these DH tours, SWOs achieve higher-level qualifications and are screened for the next career sea tour, as executive officer. The DH tours are followed by a shore assignment, before the officer returns to sea as an executive officer.

As this discussion demonstrates, the first 10.5 years of a SWO's career are dominated by long periods of sea duty. The shore duty between the division officer and DH tours is the only substantial opportunity for officers to complete additional education, spend sustained time with family, and attend to personal obligations. Adding new extended leave programs will therefore provide SWOs with supplemental options to meet their personal needs and encourage them to remain in service through completion of their DH tours.

What RAND Was Asked to Do

NDRI

- **Evaluate selected extended leave programs for Surface Warfare Officers to include:**
 - **Facilitated Return to Service (RTS)**
 - **One-year Leave of Absence (LOA)**
 - **Personal Leave (PL)**
- **For each of these programs, address:**
 - **Manpower assumptions**
 - **Navy investment (in present discounted value terms)**
 - **Program benefits: Return on investment**
- **Authority to implement addressed by Navy**

RAND

As a means of addressing the challenges of long sea-duty assignments, such as attending to family issues, completing additional education, and addressing personal needs, the Navy formulated three specific sabbatical leave programs for the Surface Warfare community. RAND was then asked to evaluate all three:

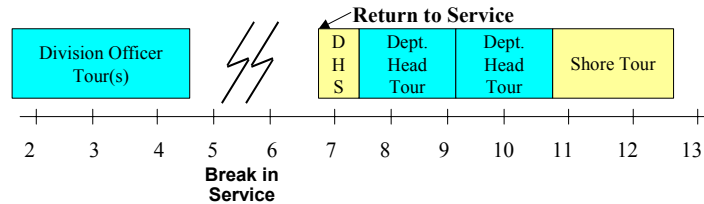
- a Facilitated Return to Service (RTS) Program, in which an officer who has separated from the Navy within the previous two years is allowed to return to active duty
- a one-year Leave of Absence (LOA), in which the officer forgoes pay and allowances for the duration of leave but is afforded medical, dental, and commissary benefits
- a Personal Leave (PL) program, which allows an officer up to 90 days extended leave between assignments. (Officers currently enjoy a 30-day delay before reporting, but this new program would permit an officer to use up to 45 days of his or her own earned leave time, combined with up to another 45 days of additional leave contributed by the Navy.)

We evaluated the three programs independently. As we will discuss in the ensuing pages, we utilized general and program-specific manpower assumptions for each sabbatical option. Then, we used a return-on-investment (ROI) framework to determine the required Navy investment and the relative program benefits.

While our findings suggest various benefits for each program, the authority to implement these programs will be addressed by the Navy through its legal and legislative offices.

Facilitated Return to Service Program

NDRI



- **Allows quality officers who voluntarily separated the opportunity to come back**
 - Performance based
 - Career clock adjusted
 - None of usual red tape
- **Program size assumed to be small**

RAND

The Facilitated RTS program is a performance-based option that would allow quality officers who have separated after completion of their division officer tours to return to the service as Navy department heads.

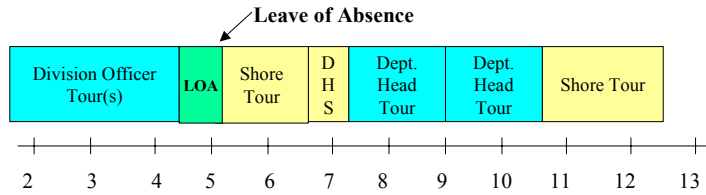
The program would only be offered to officers who have left the service within the previous two years. RTS program administrators would screen the records of anyone desiring reentry; those qualified and selected could return at any point within two years after their resignation. The career clocks of returning SWOs would then be adjusted by the length of the break in service, and the officers would pick up their careers where they had left off. After meeting the requisite medical and physical fitness reentry standards, the SWOs would then proceed to DHS.

Currently, the number of officers allowed to return to service is strictly limited. The reason for the limitation is that returning officers are counted against new accessions on a one-for-one basis. That is, for every officer allowed to return, the Navy's end strength of active duty officers must be reduced by one new accession. The RTS program, however, would eliminate the "red tape" by establishing a streamlined process for SWO reentry. The Navy is internally addressing problems associated with counting accessions under the RTS program against end strength.

Because this program is intended to be selective, the number of officers who would be allowed to return is presumed to be small.

One-year Leave of Absence Program

NDRI



- **Merit based**

- **Sign contract to serve two Dept. Head tours—eligible for Surface Warfare Officer Continuation Pay (SWOCP)**

- **No pay, but with medical and dental benefits**
- **Career clock adjusted**

- **Program size assumed to be small**

RAND

The Leave of Absence (LOA) program is a merit-based option designed to offer a limited number of officers on active duty the opportunity to depart for up to one year to attend to personal issues, e.g., to pursue advanced education or spend time with family. The Navy Personnel Command would determine the criteria for being selected for this program and would screen, select, and notify the applicants.

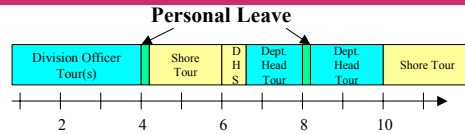
Prior to their leave, however, officers would be required to sign a contract that would bind them to complete both DHS and two DH tours upon their return. As with all officers completing such tours, participants in this program would be eligible for Surface Warfare Officer Continuation Pay (SWOCP), which provides a total of \$50,000 (paid in increments) to department heads.

While on the LOA program, officers would not receive any pay or allowance but would be eligible for military medical, dental, and commissary benefits. Upon their return, officers would be required to meet the requisite medical and physical fitness reentry standards. As with the RTS program, the officer's career clock would be adjusted by the amount of time the officer is on the LOA.

Given the lack of pay during the leave and the merit-based screening for participants, we assumed that the number of program participants would be small.

Personal Leave Program

NDRI



- **90 day breather between assignments**
 - **Officer contributes 45 days from accumulated leave, Navy matches with 45 additional days**
- **Officer works out arrangements with detailer**
- **May be taken twice during first 12 YCS**
- **Program size assumed to be large**

RAND

The Personal Leave (PL) program is the most broad-based option. All officers would be eligible to take PL twice during the first 12 years of commissioned service. The leave would consist of a three-month break between duty stations. The officer would contribute 45 days of his or her earned leave time, and the Navy system would match it with up to 45 more days, for a total of 90 days.

Unlike the RTS and LOA programs, PL involves no selection process, and interested officers would not need to submit an application. Those electing to participate in the PL program would merely need to work with their individual detailers to make arrangements.

While on PL, the officer would still be considered on active duty, so there would be no effect on officer's career clock. Participants would also continue to receive regular military compensation and benefits.

Because all officers are eligible, the expected number of participants is assumed to be large.

Manpower Assumptions

NDRI

- **SWO annual man-years and end strength do not change**
- **SWO retention follows historic patterns**
 - **Used NPC provided data from FY87–FY02**
 - **May not represent future retention patterns**
 - **Serves as base case**
- **Changes in force profile to maintain man-years and end strength can be accomplished through decreased SWO accessions**
 - **900 accessions in base case**

RAND

In addition to these program parameters and our assumptions about each program’s size, we required further assumptions to shape our modeling, facilitate our analysis, and calculate ROI. We applied several assumptions across all three programs.

First, we assumed that SWO annual man-years and end strength would not change from year to year during our analytical time frame.

We also assumed that future SWO retention patterns would mirror recent trends. The Navy Personnel Command provided SWO retention data for fiscal years 1987–2002. Using these data, we averaged the continuation rates from one year of commissioned service (YCS) to the next. This process allowed us to generate a retention profile for use in projecting future retention trends. Using a profile based on past retention patterns presents a number of challenges, however, since future patterns may not replicate the past. These challenges include the following:

- The retention data underrepresent female SWOs. At present, they make up a greater part of the SWO community profile, and they retain at lower rates than their male counterparts.
- Changes in operational tempo may have effects on future retention patterns.
- SWOCP was not introduced until 1999, so the historical averages underrepresent its effects.

The net effect of these influences on retention profiles is unclear. Therefore, we chose to remain faithful to the historical data. We then used this data to establish a “base case” from which to compare and contrast the effects of each of the proposed programs. The

base case exemplifies what will happen in the future if none of the sabbatical programs are implemented.

In addition to these assumptions, we also operated under the hypothesis that adopting any of these programs would change the SWO force profile. That is, some SWOs would stay longer as a result of their participation in a sabbatical program, and fewer officers would be required elsewhere. As stated above, however, our analysis assumes that annual man-years and end strength do not change. To balance the increased retention with these constants, our analysis lowers the number of accessions into the community. Specifically, we set the number of accessions in the base case at 900, since this was representative of the number of accessions for 1999 through 2002. We then lowered this number accordingly for each program under analysis.

Program Cost Analysis: Data & Assumptions

NDRI

- Used 2003 basic pay table for retirement costing
- Used Naval Center for Cost Analysis COMET data for officer and program costs. COMET data represent full life-cycle cost of creating an officer to include accession costs, pay, medical, dental, retirement, etc.
- Incorporated Surface Warfare Officer Continuation Pay (SWOCP) and Surface Warfare Officer Critical Skills Bonus (SWOCSB) separately
- Program specific outlays:
 - RTS – additional PCS move at YCS4
 - LOA – medical and dental benefits
 - PL – regular military compensation
- Administrative program costs are assumed to be minimal
- Program Cost is the sum of all administrative and program specific outlays needed to execute the program

RAND

The Navy asked us to conduct an ROI analysis for the RTS, LOA, and PL programs, given the aforementioned assumptions and parameters. This method allows us to compare and contrast how the system responds to specific programs and to the base case extrapolated from historical data. ROI is thus defined as the difference between the program benefits (how much more or less outlay is needed to man the new force profile) and the direct program costs (permanent changes of station, pay when not working, benefits). This difference is then divided by the program costs. The result is multiplied by 100 to achieve an ROI percentage.

To determine the ROI for each program, we conducted a program cost analysis. The analysis focused on officer and program costs and the benefits that will be achieved. We calculated the benefits from the potential cost savings that might result from effects of each program on accession levels and retention patterns. The costs include program administration and altered compensation as a result of the changes in the force profile (e.g., the effects of having more senior officers).

Our cost analysis was accomplished through two sources: the 2003 basic pay table and the Cost of Manpower Estimating Tool (COMET) database. Retirement compensation was a crucial element of determining the costs of each program, so we used the 2003 basic pay table to determine the retirement pay for those who stay for 20 years and retire under the base case and for under each program's changed force profile.

Next, we used the Naval Center for Cost Analysis (NCCA)'s Cost of Manpower Estimating Tool (COMET) database to establish specific officer and program costs. We determined the following costs particular to each program:

- The RTS program would bring an additional cost for a permanent change of station (PCS) move for the returning service member.
- The LOA program involves the added cost of military medical and dental benefits for all participants.
- The PL program necessitates a significant cost to the Navy because it must pay each officer's regular military compensation (RMC) for the period in which it contributes up to 45 days of leave for each participant.

We also accounted for further costs the Navy would incur that are not in the COMET data. If a greater number of SWOs reach the DH tours, more officers will be eligible for the various payment incentives already in practice. For instance, we factored in the cost of SWOCP, for which all participants in the LOA program would be eligible, and the Surface Warfare Officer Career Critical Skills Bonus (SWOCSB), payable to SWOs who remain on active duty through the fourth anniversary of their promotion to lieutenant commander. Lacking data on the effects of such programs on officer behavior, we made the conservative assumption that those who do not participate in the programs would be unaffected in cost and retention terms.

Finally, we determined that the costs of administering each program are minimal. Administrative costs would include the time it takes officers to apply for these programs, the time spent on the selection process, and the extra time detailers would need to coordinate the needs of the program participants and Navy commands. Since these costs were considered to be minimal, they were not factors in our analysis.

With our data and assumptions in place, we were able to generate total program costs—the sum of all administrative and program-specific outlays needed to execute the program.

Cost of a Force Profile

NDRI

- **Used present discounted value (PDV) framework**
 - Discount rates per OMB standards
- **Used steady-state framework to calculate:**

$$\text{Cost of an officer } YCS_x = \text{Cost } YCS_1 + \text{PDV cost } YCS_2 + \dots + \text{PDV cost } YCS_x$$
$$\Sigma \text{ Cost of all officers} = \text{Cost of force profile}$$

RAND

Having established our sources and assumptions for the required outlay for the Navy to implement these programs, we next turned to the costs of the new force profiles these programs would generate. Specifically, we considered the profile costs under (1) the base case, with no new sabbatical leave program and with the SWO force following historic accession and retention patterns, and (2) the new program, with the parameters previously discussed for RTS, LOA, and PL.

To determine the relative force profile costs for each of the proposed programs and the base case, we used a present discounted value (PDV) framework¹ (see Appendix A) to generate a net present value (NPV) for each option. An NPV is the discounted value of expected net benefits from a given program. It is calculated by discounting future benefits and costs using an appropriate discount rate, and subtracting the total discounted costs from the total discounted benefits.

In our case, we determined the cost of each officer based on the number of YCS he or she has accumulated by the time of separation or retirement; based on the year, different discount rates will apply to officers. The Office of Management and Budget (OMB) governs discount rates for this type of analysis standards (OMB, 1992).

After we determined the cost of *each officer* in the force under the base case and each program, we summed the cost of *all officers* to determine the total cost of the force profile under the base case and then under each sabbatical program.

¹ OMB (1992), Appendix B, provides guidance for discounting.

Program Benefits (1)

NDRI

- **More officers serve longer, fewer are accessed**
- **How we determined the benefits:**
 - **New programs yield new force profiles**
 - **Then, we calculated cost of each new force profile in steady-state man-years and,**
 - **Compared costs of new profile vs. base case profile**
- ***Program benefit = difference in force profile costs***

RAND

With these cost calculations in place, we next turned to the program benefits. The overall benefit for these sabbatical leave programs is that more officers will serve for longer periods (through DH tours), which in turn reduces the need for new accessions. A more-senior, experienced force reaps greater rewards in terms of the training delivered to each individual. In turn, the longer officers stay in service, the fewer are needed to replace them, reducing the need for new accessions. Fewer accessions means training demands are lessened—another benefit.

For our analysis, however, we determined the benefits by positing that offering these new programs would directly affect the composition of the force. Each program will yield different results based on the unique program parameters established in concert with our sponsors. Given these parameters, the RTS, LOA, and PL programs will yield a new steady-state² SWO force profile. Using data described earlier, we costed each profile within the PDV framework, then compared the costs of each new profile (with more officers serving longer and with fewer accessions) to the base case profile. For our analysis, the program benefit is defined as the difference in the total outlay required to produce the new cost profile as opposed to the base case.

²*Steady state* refers to the unvarying or equilibrium condition that is representative of changes in the force profile per the general and specific program parameters and assumptions.

Program Benefits (2)

NDRI

- **Other program benefits**
 - **More experienced force**
 - **Enhanced unit readiness**
 - **Increased value of human capital**
 - **Improved perception of SWO leadership**
- **Complement to SWOCP**
- **Offers an attractive alternative to today's generation of junior SWOs**

RAND

While our analysis calculated the Navy benefit in NPV terms, there are other, less quantifiable benefits, such as improved unit readiness, a more-experienced force, and improved perceptions of SWO leadership as a result of the program being offered. All of the programs appear to result in a better overall force with a profile of SWOs who are better qualified, more highly motivated as a result of a sabbatical program, better trained, more experienced (older), and in numbers necessary to better man the force. This would result in a great benefit to the SWO community, but the exact degree is difficult to measure. Although these benefits are not accounted for in our cost analysis, they are important factors for evaluating these programs.

The Navy has recently introduced monetary incentives to increase the retention of officers to stay through their department head years, as the supply of post-department heads has been below requirements for several years. While the Navy was downsizing in the 1990s, SWOs were under-accessed, and retention during this period dropped below historic patterns. Attractive employment alternatives for junior officers during this period contributed to the reduction of the SWO force. To stem the tide of SWO departures, the Navy offered SWOCP, targeting it at officers making their first retention decision—normally as they are completing their division officer tours. This program pays an officer \$50,000 in intervals to complete his or her department head tours. SWO sabbatical programs can complement SWOCP and other quality-of-service programs to assist in keeping the SWO community as an attractive employment alternative for those facing their initial retention decisions.

Today's workforce is quite different from that of previous generations. Young professionals are more mobile, less committed to an employer, marry and settle down later in life, have greater expectations for family and leisure time, value benefits more,

and want to have a greater influence and responsibility at an earlier age. The offer of a sabbatical program may provide a benefit that meets the needs of today's workforce.

Return on Investment

NDRI

- **Given these benefits and costs, we evaluated programs from an ROI perspective:**

$$\text{ROI}\% = (\text{Program Benefit} - \text{Program Cost}) / \text{Program Cost} * 100$$

- **Even if a program has a negative ROI, it still might be advisable from a “right thing to do” or competitive employer perspective**
- **Extended leave programs are frequently offered in private industry:**
 - **Benefit of employment**
 - **Retain quality employees**

RAND

At this point, we were able to determine each program’s ROI, the difference between program benefits and program costs.

It is important to note, however, that ROI may be positive or negative for these programs, but even a program that has a negative return may be valuable. Private industry frequently offers extended-leave programs as a benefit of employment, and these have proven effective in retaining quality employees. As these programs become more commonplace, it may be necessary to offer similar programs to remain competitive as an employer and to prevent the outflow of quality personnel to employers who offer more (people-friendly) benefits of this nature (Thie, Harrell, and Thibault, 2003).

Extended-leave programs may also be thought of as the right thing to do for Navy officers. The Chief of Naval Operations espouses “covenant leadership,” meaning that the Navy takes care of those who work hard and endure many hardships (Kennedy, 2000). Keeping the faith with the officers who may have a personal and private need that these programs can meet may be more important than a positive ROI and may, in fact, be the “right thing to do.”

Return to Service (1)

NDRI

- **Assumptions**
 - SWOs leave and return at YCS4
 - 15 SWOs return to service each year
 - When they return, SWOs stay for 4 years, then follow historic retention patterns; retire at 20 YOS
- **Results of steady-state model**
 - 15 RTS participants yields 10 more SWOs to remain through YCS9
 - **Difference (5) due to reduced accessions**
 - More officers serve longer, fewer are accessed to keep total man-years constant
 - ~ 17 decreased accessions
 - Smaller accession cohort yields 5 less SWOs to YCS9
 - 15 participants represent 7.5% +/- 0.3% of those who departed in previous 2 years
 - **High ROI**

RAND

Now that we have outlined the cost analysis framework and the ROI measurements, let us turn to the results of our analyses. To explain our findings for each program, it is necessary to characterize the additional program-specific assumptions we used to determine these results. That is, beyond the assumptions we applied across all three programs, we also operated under a set of assumptions unique to each one. Because of time and resource constraints, it was necessary to scope our analysis; our sponsors thus identified likely periods during which SWOs would participate in the selected programs. The assumptions for participation in each program are different, and it is possible that evaluations of participation in other periods would produce different results. First, let us consider the RTS program.

Assumptions. For the RTS option, it was assumed that SWOs selected for the program would take their break in service after four years. Further, we assumed that a total of 15 individuals each year would be allowed to return after such a break. Upon reentry, the officer would attend DHS and serve two DH tours, staying for a minimum of four additional years. After serving four years, the RTS SWOs would follow the retention patterns of those commensurate with their YCS. If they stay in the Navy, all would retire at 20 years, which served as the basis for our retirement costing.

Results. Given these assumptions, the steady-state model results indicated that, if 15 SWOs were allowed to return to service, ten additional SWOs would remain through the ninth YCS. Since more officers would be serving longer, changes in the force profile to attain this increase were achieved through decreasing accessions. The decrease in accessions (approximately 17) resulted in a smaller cohort. This cohort, if it follows historic retention patterns, would then have five fewer SWOs remaining to the ninth YCS.

Our results, however, depend on a specific return rate. To have 15 SWOs return to service every year, approximately 7.5 percent of those who left in the previous two years must return. The return rate—or the rate at which officers return after leaving the service—is based on the pool of officers who separated from the Navy during the previous two years. Since one parameter of the RTS program is that officers lose eligibility to reenter service after two years, a first-out, first-in selection of participants will reap the lowest return rate. So, to retain the largest possible pool of eligible officers, the Navy should accept first those eligible quality officers who have had the longest break in service and who are just about to lose their eligibility to return.

Our analysis found that the *ROI for the RTS program was positive and high*. The cost of the program was minimal (one PCS move per returning officer), and the benefit is the return of 15 SWOs, which then results in 17 fewer accessions. Even with the added costs necessitated by a more senior force profile, the reduction in training costs that results from fewer accessions means that the benefits outweigh the costs.

Return to Service (2): Sensitivity Analysis

NDRI

- High ROI for each officer who returns (stays constant)

If this number return annually:

5	10	15	20	25	30
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You bring in fewer accessions, given increased service:

(6)	(12)	(17)	(23)	(29)	(35)
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Increased retention/fewer accessions yield net increase to YCS9:

3	7	10	14	17	21
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However, is it feasible to achieve these return rates?

2.4%	4.9%	7.5%	10.3%	13.1%	16.0%
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RAND

We also conducted a sensitivity analysis for the RTS program. Such an analysis measures the effects of changing one or more key input values about which there is uncertainty on program outcomes. For our purposes, we varied the number of officers who return each year, running the same analysis with 10, 15, 20, 25, and 30 officers. A high ROI is achieved for every officer who reenters after a break in service. For example, if 20 officers were allowed to return annually, 23 fewer accessions would be required to achieve the same SWO man-years and end strength. The increased retention of the 20 RTS participants, combined with the reduced accession cohort, would result in a net increase of 14 SWOs to reach the ninth YCS.

However, to achieve 20 RTS participants, 10.3 percent of SWOs who departed from the previous two years at the YCS4 would have had to return.

As the number of officers allowed to return increases, the feasibility of achieving a higher return rate becomes more challenging. For an RTS program much larger than 30 officers annually, the assumptions of zero management cost and minimal opportunistic separations may not hold.³

³Offering a sabbatical program could lead to opportunistic separations; some officers who would have stayed in the service instead separate and return because the opportunity exists.

Leave of Absence

NDRI

- **Assumptions**
 - SWOs leave and return at YCS5
 - 15 SWOs participate each year
 - When they return, SWOs stay for 5 years, then follow historic retention patterns
 - Gone shorter; stay longer than RTS
 - Costs include medical and dental
- **Results**
 - 15 participants yield 7 more SWOs to remain through YCS9
 - Difference (8) due to accounting for those who would have remained through YCS9 without LOA (5), and
 - Reduced accessions
 - ~ 11 decreased accessions yields (3) less to YCS9
 - Given 15 participants, program available to 2.3 % of cohort at YCS5
 - **Positive ROI**

RAND

Assumptions. As with RTS, we used several program-specific assumptions to conduct our analysis of the LOA option. First, we assumed that SWOs take and return from their LOA at the fifth YCS. Further, our analysis assumed that 15 SWOs would be allowed to participate in the program each year, and that their leave would last for one year. Next, we assumed that when a SWO returns from an LOA, he or she would stay for five years and then follow historic retention patterns. Compared to the RTS program, LOA participants are gone for a shorter period (one year for LOA instead of up to two years for the RTS program), and when they return, they stay longer. In effect, an RTS program participant's career track becomes identical to an "early roller," immediately entering DHS upon their return. LOA program participants differ in that, upon returning from an LOA, they serve in a shore tour before attending DHS.

After returning from the LOA, the SWO would resume his or her career at the point it had left off (at a shore tour), then attend DHS and serve two DH tours, staying for a minimum of five years upon returning. After serving five years, the LOA officers are assumed to follow the retention patterns of those commensurate with their YCS. As with the RTS program, we assumed that if they stay in the Navy, all would retire at 20 years.

As previously noted, the LOA program is based on merit, and the program is small. There may be unintended consequences for the retention or morale of officers who apply and are not selected for this program. This impact is difficult to determine, most likely would be negative, and is not addressed in the ROI calculations.

Results. The steady-state model results indicated that if 15 SWOs were allowed to participate in the LOA program, seven additional SWOs would remain through the ninth YCS. Like the RTS model, more officers serve longer, and changes in the force profile

to attain this longevity increase were achieved through decreased accessions. The decrease in accessions (approximately 11) in turn resulted in a smaller accession cohort. With this cohort following historic retention patterns, three fewer SWOs would remain to the ninth YCS.

To achieve these results, however, the program's availability needs to be controlled. Given our model's parameter that the LOA program is offered to 15 participants in their fifth YCS, the program is available to 2.3 percent of the cohort.

Our analysis determined that *the ROI for the LOA program was positive*. One influence on the ROI is the fact that some program participants might have stayed in the service even without the program. Therefore, we posited that, with 15 officers participating, five would have stayed in the SWO community even without this program. This factor drove down the ROI. Nevertheless, the ROI was still positive, and the benefits outweighed the costs.

Leave of Absence (2): Sensitivity Analysis

NDRI

If this number take LOA annually:

5	10	15	20	25	30
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You bring in fewer accessions, given increased service:

(4)	(7)	(11)	(14)	(18)	(21)
-----	-----	------	------	------	------

Fewer accessions/increased retention yields net increase to YCS9:

2	5	7	9	12	14
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However, what percentage of eligibles would you allow to take LOA?

0.7%	1.5%	2.3%	2.9%	3.7%	4.5%
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RAND

We also conducted a sensitivity analysis for the LOA program, once again testing for increasing number of participants from five to 30. We found, on average, a positive ROI for each number of officers taking an LOA annually. For example, if 20 officers were allowed to participate in the LOA program each year, 14 fewer accessions would be required to achieve the same SWO man-years and end strength. The increased retention of the 20 LOA participants, combined with the reduced accession cohort (who follow historic retention patterns), would result in a net increase of nine SWOs reaching their ninth YCS. To accommodate 20 LOA program participants, 3.7 percent of SWOs in their fifth YCS would be allowed to participate.

As noted earlier, it is unlikely that a positive ROI will be maintained for each officer in a large program. Therefore, the Navy must carefully consider the number of officers they would allow to participate in this program. Because participants are chosen on merit, those likely to qualify might too frequently be those who would have remained in the service without the program. Allowing more officers to participate in the program (the “take rate”) increases the risk of such a phenomenon. For this reason, our model does not address programs larger than 30 people.

Personal Leave

NDRI

- **Assumptions**
 - All SWOs take PL at YCS5 and half take at YCS9
 - Costs include man-years lost to Individuals Account due to 45-day contribution from system
- **Results**
 - ROI is negative
 - No possibility of break-even if Navy contributes leave, even with high retention
- **Could a program that “protected” leave use have merit?**

RAND

Assumptions. The PL program analysis was also framed by several assumptions. First, it was assumed that all SWOs would take PL at the fifth YCS and that half would take a PL again at the ninth YCS. Because this program involves the Navy contributing up to 45 of a total 90 days of leave, the cost of the PL program is high. The Navy contribution would result in an increase to the Navy’s Individuals Account (IA), which accounts for personnel who are in transient status. Each time an officer takes a PL, the Navy loses 45 days of productivity.

For our analysis, we costed the Navy’s 45-day contribution as regular military compensation (RMC). We assumed, liberally, that officers would have taken their accumulated 45 days of leave even without the program. Since, in reality, officers are not likely to take all of their leave time, this assumption biases the ROI positively.

Results. Even with this positive bias, the resulting *ROI for the PL program is negative* for each and every taker. In essence, every SWO taking a PL would cost the Navy 45 days of RMC, and all SWOs take a PL and one-half take two PLs. Even if retention improvements resulted from the promise of a PL program, no plausible retention increase would be sufficient to produce a positive ROI.

An option to consider along the lines of a PL program is a protected leave program. Under a protected leave program, officers would be allowed to take any amount of their earned leave between assignments. The Navy would not contribute matching leave. This program would increase the amount of time for an officer between duty stations, provide a breather to take care of personal needs, and reduce the amount of leave lost for officers who fail to use it. Since it would not require a Navy “system match,” it would also be less expensive than a PL program.

We understand that, currently, some officers lose earned leave. Practical matters of operational tours aboard ship and ashore often cannot offer all officers the opportunity to use the full 30 days of leave they earn per year. In turn, some leave is lost because officers begin to accrue more leave than can be “carried over” to the next fiscal year.⁴

“Protecting” the use of all accumulated leave between assignments will benefit officers by reducing the prospect of leave being lost, providing an increased opportunity to use accumulated leave, and thereby recognizing the intensive nature of a sea-and-shore duty assignment.

Of course, any program that increases the use of all earned leave and reduces lost leave will increase the cost to the Navy. Under the protected leave program, for instance, while the officer is using his or her accumulated leave (above the normal 30 days in delay in reporting) between duty stations, the costs would be borne by the Navy’s Individuals Account. Nevertheless, a program that allows an officer to use all earned leave would be valued. As with the RTS and LOA programs, knowing that the benefit is there, whether it is used or not, can increase the satisfaction of the potential beneficiaries of such a program. Officers would have increased confidence in leadership because this program recognizes the challenges some may have with taking all earned leave by providing an option to use it that is not currently available.

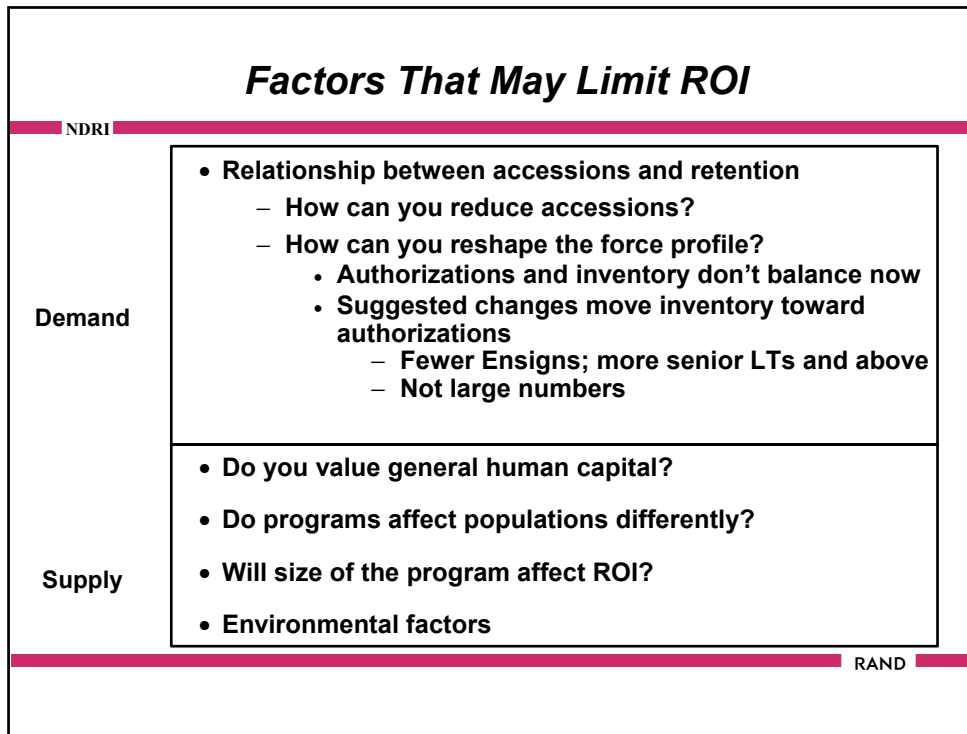
⁴Normally, officers are allowed to carry up to 60 days of leave from one fiscal year to the next. If accumulated leave exceeds 60 days, it is lost at the beginning of a new fiscal year. There is an exception to this rule: If certain circumstances (such as extended deployments) prevent officers from taking leave, they are allowed to save leave over 60 days.

Model Results			
NDRI			
	Program Benefit	Program Cost	ROI
Return to Service	High	Minimal	Positive and high
Leave of Absence	High	Low	Positive
Personal Leave	Low	High	Negative
RAND			

Above is a summary of the results of our analysis, showing overall program benefit, cost, and ROI for all three programs.

Once again, the program benefit is the difference between the cost of the base force profile and the resulting profile from each program's implementation. To sum up our findings, we determined that

- The RTS program is a practically costless opportunity to reach the highly valued goal of increasing the number of officers who remain through DH tours.
- Although the LOA program keeps fewer officers through DH tours than RTS, its benefits are still high. The program costs (medical and dental benefits) are greater than those for RTS but are lower than those for the PL program. The ROI is positive but not as high as for RTS, because the program costs are higher and the program benefits are slightly lower. In the LOA program, a number of officers would likely have stayed without the incentive of the program.
- For the PL program, no plausible increase in retention could provide a program benefit greater than the program cost. Therefore, the ROI was negative. The PL program benefit was low because it was determined that, no matter the amount of increased retention, the program costs will exceed the program benefits.



Despite these findings, two main categories of factors may limit the ROI of sabbatical leave programs: demand and supply. *Demand* relates to the Navy manpower system requirements for SWOs. *Supply* relates to the number of SWOs willing to participate in these programs.

Specifically, as noted throughout this briefing, there is a relationship between the number of accessions needed and the retention characteristics of the force. Higher retention (through YCS9) should decrease the demand for new accessions. However, a factor that may limit ROI is the rising numbers of accessions. A critical underlying assumption behind our cost analysis is that a reduction in accessions is needed to achieve a positive ROI. If commensurate reductions are not implemented, ROI will be lower, possibly even negative.

This point is particularly important given the current state of accessions in the SWO community. At present, it already accepts accessions above authorization levels. In turn, the Navy has increased throughput at NROTC and the Naval Academy, yielding larger accession cohorts to be commissioned starting in FY 2005. These high numbers will limit any ROI; in FY 2005, unless accessions are diverted to other communities, an even greater excess of SWO accessions will occur and further reduce the ROI. In addition, the mismatch of manpower authorizations and inventory in the SWO community is different at different levels. The SWO inventories of O-1s and O-2s is above authorizations, while the inventories of senior O-3s, O-4s, O-5s, and O-6s are under authorizations. A greater balance is possible through the sabbatical programs under consideration here, however. Under the established parameters and assumptions, these programs posit that more officers serve longer and fewer would need to be accessed, so that the total SWO inventory would move closer to the authorizations.

On the supply side, there are questions about human capital gain or loss while officers are on leave. The current system, for example, offers no benefits to officers who fund their own educations while on a break in service or a leave of absence, merely resetting the “clock” on their return. Their greater worth as human capital is not valued. We can estimate the value of human capital by the system’s willingness to pay for it. Conversely, if the Navy pays for the education of an officer on active duty, the clock is not reset. In this case, the Navy values the human capital but has also borne the cost of it. These new programs, however, do not place an implicit value on educational achievements of returning officers by adjusting their career clocks.

In addition to these supply-and-demand concerns, it is important to keep in mind that these programs may affect populations differently, impacting the ROI. Assorted SWO demographic populations—males and females, married and single, dual-military-member couples—may exhibit varying degrees of willingness to participate in these programs. For example, for a dual-military couple, the RTS program may be attractive and suitable if one of the spouses needed to take time off to care for young children. Even if one spouse were to leave the service, the full range of military benefits would be retained by the active-duty spouse (and family members). Further, the spouse who separated may have the opportunity to return to service within two years. This program thus might appeal more to the dual-military couple than to single officers or officers who are married to civilians.

There are key environmental factors that may affect the supply of officers. These factors are difficult to measure and predict and include operational tempo, state of the economy, and job opportunities. The effects of environmental factors on sabbatical programs are dynamic. High operational tempo may drive SWOs out of the Navy, while a more relaxed operational tempo may make continued service more attractive. In an expanding economy, job opportunities may provide attractive employment alternatives. A poor economy and reduced employment alternatives may increase the numbers of SWOs participating in the RTS program.

Finally, as noted earlier, the size of the program may affect its ROI. Since the ROI is linked to program size, we cannot be certain of the ROI for a greater number of participants than the groups we modeled. Further analysis would be required if the program size were to be increased outside the bounds of our model. The structure of the model does not address the more-complex issues required in analyzing larger programs. These issues include the potential increase in opportunistic behavior, sequencing of assignments of returning personnel, and increased program costs.

How Should Program Success Be Measured?

NDRI

- **Goal of extended leave programs: increased SWO retention through department head tours**
- **Individual and Navy perspective**
- **Positive ROI**
 - **RTS measure**
 - **LOA measure**
- **Alignment of authorizations and inventory**

RAND

Given our findings, our sponsors asked us to consider possible measures of success after implementation of the RTS, LOA, and PL programs. The most obvious sign of success would be if the program helps meet the original goal to increase SWO retention through DH tours by enhancing the options officers have for meeting individual needs.

Conceptually, measures of success may be viewed from the institutional perspective—the Navy SWO community—and from the perspective of individual officers given these program options. From the institutional viewpoint, if offering these programs achieves more SWO retention through DH tours, it is a success. To an officer, however, the issue is more complex. For the SWO, success means that the program meets his or her needs and provides a previously unavailable opportunity to continue service. However, although similar forms of extended leave programs have proven successful in private industry, they may or may not meet an officer’s personal needs within the SWO’s career track.

In terms of more quantifiable measures, a common gauge for program success is the measure we used in our analysis to forecast the likely return from these programs: ROI. But this measure has limitations. The steady-state result it produces is possible only because the model holds constant, buffered from all but a specified few of the effects regularly felt in the “real world”—such as changes in accession sources, cohort sizes, changes in pay, and possible deployments. These events can—and do—change the ROI of a program in unexpected ways.

Indeed, calculating success of manpower programs is difficult, as it will depend on information that will not exist in reality, and we cannot isolate the effects of the program to determine the cause. To calculate success in the real world, we must compare the

actual results of the program to what participating officers would have done without the program. Unfortunately, once we initiate any sabbatical program, we can no longer observe what participants and nonparticipants would have done if the program did not exist. Furthermore, the limited number of participants in the programs means that any changes in behavior are likely to be small relative to the natural variation in usual measures of success.

The database does not capture the reasons that SWOs leave the Navy. Although the SWO community does survey junior officers, respondents provide answers to general questions regarding the greatest causes for dissatisfaction, not necessarily the reasons for leaving. A method should be established for capturing the major reasons that departing SWOs leave so that programs can be developed that address these causes for attrition. Future analysis could focus on the primary reasons that SWOs leave the service and on evaluating a sabbatical program's characteristics relative to these reasons.

Simple counts of program outcomes and tracking of participants may be the way to quantify success. For instance, every officer who returns under the RTS program will be a net positive benefit to the Navy. Under RTS, officers will be returned only under service need, at minimal program cost. A small RTS program would be competitive—not all those who want to return will be able to do so. This selectivity should lower or limit “opportunistic” separations, although some officers might leave believing that RTS is an almost guaranteed return.

The RTS, LOA, and PL programs result in a profile of SWOs who are more highly motivated, better qualified, more experienced, and in the numbers necessary to better man the force. These benefits may be difficult to capture in terms of ROI calculations but are still important to consider.

A final consideration is that different factors will weigh on the future retention of SWOs, such as parity in compensation and benefits, the demographic mix of the SWO force, and continued high operational tempos as the war on terrorism continues. Quite simply, all else will not remain equal. Nevertheless, the measures of success as they manifest themselves in program participation and retention rates will indicate that SWOs are interested in these previously unavailable programs and that they offer SWOs greater options for continued service.

Concluding Observations

NDRI

- **From an ROI perspective**
 - **Return to Service is highest**
 - **Leave of Absence is positive**
 - **Personal Leave is negative**
- **ROI is not necessarily the same as “savings”**

RAND

The SWO community put forward three sabbatical options, and we have addressed their implications from a ROI perspective. We developed and determined the ROI for each using specific parameters and assumptions. Our sponsors provided some of the program parameters; some were products of joint discussion and development with them, and some reflected the best judgment of the research team. This research did not directly determine whether a more liberal use of leaves of absence could improve the retention environment. Rather, this research inferred that if a more liberal use of leaves did occur and if such leave programs were bounded by specific assumptions and parameters, a ROI for each program could be estimated.

Our findings were as follows:

- *The RTS program provided the highest ROI.* This result is primarily due to the low investment the Navy would need to make; the increased man-years, through department head, for those allowed to return, and the commensurate decrease in accessions as personnel return to DHS after a break in service.
- *The LOA program will produce a positive ROI.* Although the ROI is not as high as that for the RTS program, because of greater program costs (i.e., medical and dental benefits), the return is positive for every officer who participates.
- *The ROI for the PL program is negative.* The program costs and the number of participants for PL program are high, because the Navy contributes up to 45 days of free leave and because all SWOs would be allowed to participate. Every SWO participant would cost the Navy 45 days of regular military compensation, and no amount of improved retention would produce a positive ROI.

It is important to keep in mind, however, that the ROI should not to be considered the same as savings to the SWO community—at least not initially. This assessment was completed in a steady-state framework. Although the force profiles for the RTS and LOA programs were more economical than the base force profile, accession planning decisions must be made so that the benefits of these programs can be reaped. Specifically, accessions need to be decreased to produce the results of the analysis. If the manpower realities fall outside of the bounds, the calculations will not hold. Offering these programs without instituting a commensurate decrease in accessions will drive down any ROI.

That said, these programs offer significant potential not only in quantifiable benefits but also in SWO community morale. They will likely bring a substantial payoff in terms of demonstrating to officers both the Navy's sensitivity to the demands of their career path and an appreciation for their personal, familial, and educational needs and aspirations.

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