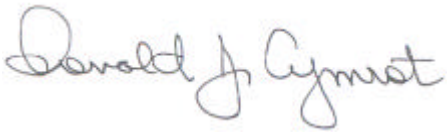
CIM D0006584.A2/Final
August 2002

Alternative Concepts for Employing Navy Reservists: Making an Impact on Force Capabilities

Neil B. Carey • James M. Jondrow • Angelyn Jewell •
Timothy A. Roberts • Carol S. Moore • Rebecca L. Kirk •
John P. Hall • John D. Keenan

4825 Mark Center Drive • Alexandria, Virginia 22311-1850

Approved for distribution: August 2002



Donald J. Cymrot, Director
Workforce, Education and Training Team
Resource Analysis Division

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Introduction

The latest Quadrennial Defense Review (QDR) tasked the Department of Defense to perform a Comprehensive Review of Active/Reserve Force Mix, organization, priority missions, and associated resources. The review will recommend options for changes to address new challenges and opportunities, including consideration of innovative approaches that can improve the use of the Reserve Component (RC). To support the Comprehensive Review, the Office of the Secretary of Defense (OSD) (Reserve Affairs, Manpower and Personnel) asked the Center for Naval Analyses (CNA) to identify and develop examples of concepts that could improve capabilities and/or alleviate high-demand/low-density constraints in the Navy and Marine Corps, and to report its findings. OSD asked us to focus on documenting the potential impact that reserves have on increasing overall force capabilities. The concepts could be ones that the Navy is already experimenting with—as long as they highlight the contributions that the Reserves can potentially make to overall capabilities.

In this paper, we describe seven concepts for using reservists and reserve units to extend the capabilities of active units in the Navy. One of the seven concepts also applies to the Marine Corps. In addition to discussing the background and feasibility of each initiative, we make more specific recommendations, including further research needed or extending initiatives already being tried.

The initiatives offered here take into account characteristics of Navy and Marine Corps operations:

- Forward deployed
- Constrained by transit times
- Limited by the need for an interdeployment workup cycle.

Naval warfighting units are forward deployed and are able to bring immediate force to bear in a contingency. Although reservists can be used in forward-deployed settings, the required timelines of arrival to support forward-deployed forces restrain the extent of reservists' immediate contribution. Further, forward deployment is preceded by an extended workup period, when teams learn what is expected and develop trust in one another. However, there are enabling functions and sustainability roles that are appropriate to reservists, both on board forward-deployed units and at bases in CONUS.

We also take into account the unique attributes of reservists, such as possessing important military-specific skills, understanding the Navy/Marine Corps culture, and the ability to supplement the active duty force at predictable, high-priority times (e.g., during carrier weapons onloads).

We found promising initiatives in the areas of carrier and carrier aviation, maintenance, surface combatants and other surface ships, assistance during nondeployed periods, and emerging skill niches.

Background on the Navy Reserve

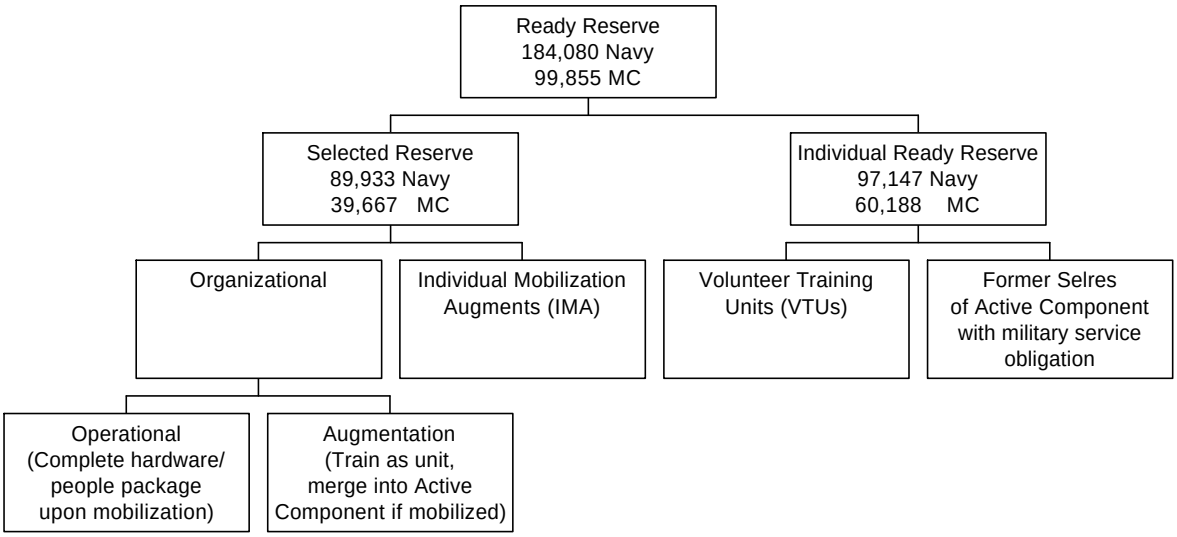
Before we introduce the concepts for employing Navy Reservists, we will provide background on the categories of Navy Reserves, the general capabilities an RC is meant to provide, the capabilities that the Navy Reserve in particular provides, and the current size of the Navy Reserve forces.

Categories of the Reserve

The Navy Reserves consist of personnel in different categories of readiness. All reserve manpower is assigned to one of three RC categories [1]: Ready Reserve, Standby Reserve, and Retired Reserve. The Ready Reserve is composed of military members who are liable for recall to active duty to augment the active components in time of war or national emergency. The Selected Reserve consists of those units and individuals within the Ready Reserve that have been designated as so essential to initial wartime missions that they have priority over all other reserves. All Selected Reservists are in an active status. In this

paper, we will focus on the Ready Reserve[1] and especially the Selected Reserve (SELRES) shown in figure 1.

Figure 1. Personnel categories in Navy and Marine Corps Ready Reserve [1, 2]



Within the Ready Reserve, shown in figure 1, the Individual Ready Reserve (IRR) is composed of members who have a reserve obligation but do not wish to affiliate with a Reserve Unit, or they have been unable to find a position [2]. The Selected Reserve is also sometimes called the drilling reserve. These members are assigned paid billets, drill 24 days per year, and perform 2 weeks of active duty training. Individual Mobilization Augmentees

1. In addition to the Ready Reserve shown in figure 1, the Navy must also recall Retired and Standby personnel to meet current and projected Navy mobilization requirements [2]. The Retired Reserve is composed mostly of active and reserve personnel who receive retired pay on the basis of active duty and/or reserve service. The Standby Reserve is made up of members who maintain their military affiliation without being in the Ready Reserve, who have been designated key civilian employees, or who have a temporary hardship or disability. They are not required to perform training and are not part of units [1].

(IMAs) are SELRES who receive training and are preassigned to a billet in an active component, Selective Service, or the Federal Emergency Management Agency (FEMA), which must be filled on, or shortly after, mobilization. Reservists unable to be assigned to a paid billet (too senior, wrong rate or designator) may drill with the Selected Reserve and accumulate retirement points in Volunteer Training Units (VTUs). These reservists, like other members of the IRR, can apply for Active Duty for Special Work (ADSW) or recall to active duty.

The capabilities an RC in general is meant to provide

The traditional role of the Reserve Component of the Armed Forces is to contribute capabilities needed in war but not in peace. A logical extension of this is to provide capabilities that:

1. Are traditionally military rather than civilian, contractor, or direct purchase. If this tradition is not well founded in logic, it need not be followed.
2. Experience intermittent demand, whether in wartime or peacetime.
3. Require skills that can be maintained with periodic practice or in the private sector.
4. Would be expensive to maintain in the military and less expensive to maintain in the private sector. Examples include skills such as medicine that are regularly used in the private sector.

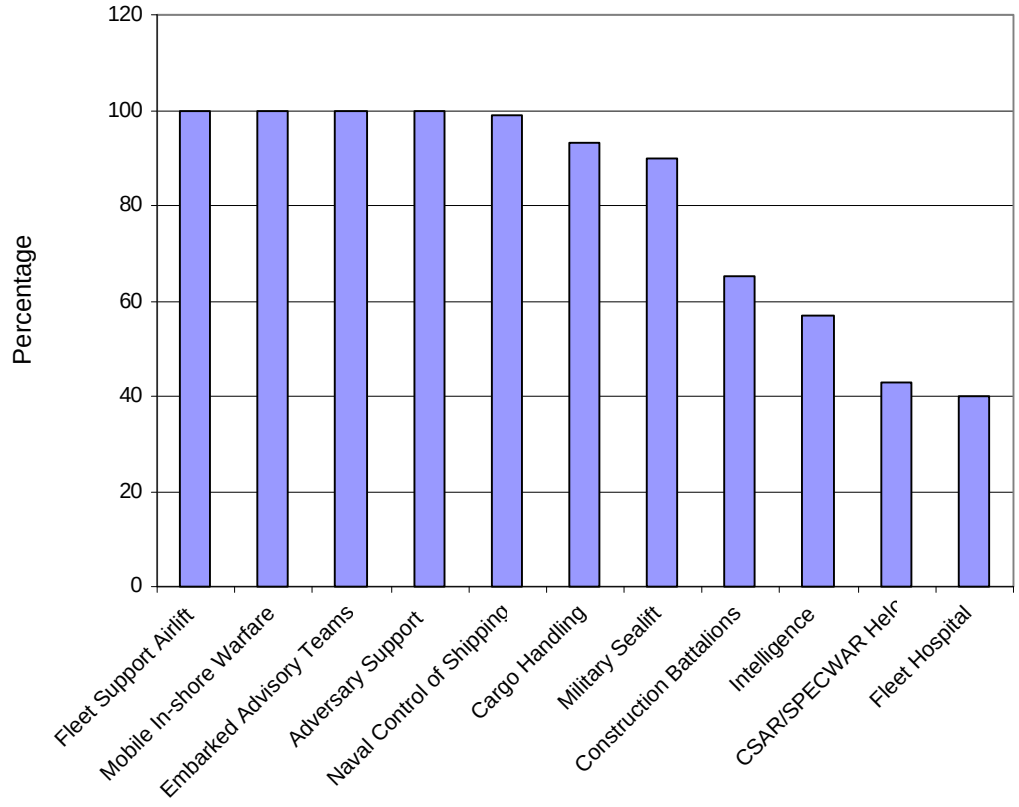
A good example of this type of capability in the Navy Reserve is adversary squadrons, all of which are in the Reserve.

The capabilities the Navy Reserve in particular provides

The focus of this paper is on the use of the Reserve to increase the Navy's capabilities. Figure 2, from the Chief of Naval Reserve Command briefing, demonstrates the current contribution of the Reserve Component in a number of missions in support of the Navy and the Marine Corps. Today, the Naval Reserve provides 100 percent of the Navy's resources for four important capabilities: fleet support airlift,

mobile in-shore warfare, embarked advisory teams, and adversary support. This shows that the Naval Reserve force is a major, regular contributor to the active force's wartime functions.

Figure 2. Naval Reserve percentage of Navy's total capability in selected wartime functions



Size of the Navy Selected Reserve

Table 1 presents the size of the Department of the Navy's Selected Reserve in fiscal 2000 [1] by DoD occupation area. It shows that the SELRES force makes a large contribution to several occupations.

Enlisted Selected Reserves are 60 percent as large as the active duty force of Craftsworkers,[2] 45 percent of Functional Support and Administration Specialties, and almost 28 percent as large as the active duty's pool of Healthcare Specialists.

Table 1. Size of the Department of the Navy's Enlisted Selected Reserve, FY 2000 [1]

		Naval Selected Reserve					
		Enlisted (Reserve)		Enlisted (Active)		Reserve percent of active	
Occ. code	Occ. specialty	USNR	USMCR	USN	USMC	Navy	Marines
0	Infantry, Gun Crews and Seamanship Specialties	7,389	9,803	33,289	33,744	22.2%	29.1%
1	Electronic Equipment Repairers	7,068	1,107	46,918	9,899	15.1%	11.2%
2	Communications and Intelligence Specialists	4,291	2,638	26,327	11,244	16.3%	23.5%
3	Healthcare Specialists	6,800	0	24,401	0	27.9%	N/A
4	Other Technical and Allied Specialists	563	440	6,645	3,904	8.5%	11.3%
5	Functional Support and Administration Specialties	14,425	4,711	31,858	24,914	45.3%	18.9%
6	Electrical/Mechanical Equipment Repairers	13,567	4,648	79,323	25,263	17.1%	18.4%
7	Craftsworkers	9,749	1,120	16,254	3,859	60.0%	29.0%
8	Service and Supply Handlers	3,429	5,478	13,397	20,185	25.6%	27.1%
9	Nonoccupational	699	5,748	35,671	22,026	2.0%	26.1%
	Unknown	19	6				
	Total	67,999	35,699	314,083	155,038		

With this background, the following sections lay out specific initiatives to improve the ability of the Reserve to add to naval capabilities.

2. Craftsworkers in the Navy include *metalworkers*, such as welding and machinists; *construction*, such as steel working and woodworking; *lithography;* and other occupations.

1. Augmentation of carrier flight deck and ordnance ratings

Issue

The Navy's aircraft carriers are an essential component of the National Strategy because of their ability to project global presence and, if necessary, to exercise overwhelming naval airpower. A recent CNA study [3] found that several enlisted and officer positions for a carrier and air wing are typically undermanned—limiting the carriers' ability to supply firepower in a time of crisis. It is not feasible or desirable to support the carriers with full manning during routine periods; during times of crisis, however, adding a small number of additional personnel could effectively double the firepower of a carrier. The arrival of these personnel would be the equivalent of the arrival of a second carrier, without the costly process of repositioning a carrier from another area of the world.

In the concept that we describe here, we propose to augment specific flight deck and ordnance ratings in times of crisis that limit carrier firepower capacity. Much of this augmentation could come from the Reserves. Doing so would be fast and inexpensive and could be covert [3]. These are important attributes for the current military strategy [4]. This concept would both enhance capabilities and help to relieve a high-demand/low-density constraint on the use of aircraft carriers. It would fit the traditional role of the Reserves in providing capabilities needed in wartime but not in peacetime.

Background

In July 1997, USS *Nimitz* carried out a 4-day high-intensity surge strike operation to demonstrate a carrier's firepower generation in a littoral warfare scenario. CNA supported the design, data collection, and

assessment of the demonstration [5]. The CNA study concluded that augmenting specific ratings could greatly increase the firepower that can be generated. Specifically, augmenting a carrier and its embarked air wing with about 210 personnel can double the firepower of a carrier. (For comparison, a carrier's typical crew is about 3,000 personnel, and the embarked air wing would have about 2,000 personnel.) Many of the rates/Navy Enlisted Classifications (NECs) needing augmentation could come from the Reserves, provided the reservists are given adequate training. The timelines of arrival on board the CVN currently preclude most reservists from this augmentation group. Most augmentation will come from the active component, with reservists playing the critical role of backfilling those vacated positions [3].

Sustainability of carriers will be enhanced by the arrival of a second augmentation cell of about 170 specially trained personnel. The timeline required for the arrival of this second cell is less stringent, and many of its members could conceivably come from the Reserve. We will discuss this further in concept 2. The CNA analysis also recommended a billet structure for the CVN Reserve Augment units.

Discussion

Almost all of the augmentation that we propose would apply to enlisted reservists, with only a few additional officers. Reference [3] found that different groups required different amounts of training to maintain proficiency. The individuals in flight deck rates/NECs (ABH, ABE, and ABF) required little training beyond 2 weeks of active duty to maintain proficiency. Additional training time is beneficial, but not required. Drill weekends add little to the readiness of these individuals, beyond completing administrative requirements.

Reference [3] also found significant benefit from organizing drill units functionally where reservists are recalled by specific rates/NECs, vice in units. This allows focused investment in upgrading and maintaining the facilities at which these units drill and eases the commanding officer's job of developing, implementing, and monitoring a comprehensive individual training plan (ITP) for each person in the unit. Currently, some reserve units have a large number and

variety of rates/NECs assigned to them. This dilutes the amount of time the commanding officer can devote to individual reservists in each rate/NEC and can adversely affect the quality of the training provided. Although ITPs are shared among units, there is no required uniformity in the ITPs. Further, the gaining command has no formal requirement to provide input to the ITP.

Recommendation

Where appropriate, assign carrier reservists to drill units based on functional training requirements. This would involve assigning a reservist to two drill units—one based on demographics that would be responsible for administering general oversight of the reservist, and a second unit based on the reservist's rate/NEC that would be responsible for retaining currency in the reservist's specialty area. This is a new concept that could be implemented on a trial basis with the carrier reserve units. If successful, this recommendation could be extended throughout the reserves. Assignment to two drill units would be an experiment that would need to be monitored for feasibility.

Feasibility

Successful implementation of this recommendation would require:

- Additional travel funds, as some reservists may live far from their operational training units
- Coordination between the administrative unit and the operational training unit.

Reservists can fill many of the augmentation requirements to increase the sustainability of carrier firepower. To fill either of these roles, the naval reservists must be current in their rate/NEC (see the appendix). Some reservists may live far from their main functional reserve unit, causing the need for more transportation funds for functional units. There might be difficulties maintaining the morale of those reservists who would either travel further to train with members of their rates/specialties, or who switch rates/specialties to train with their local units. However, it could also be argued that reservists'

morale would improve when they have more opportunities for rate / specialty-specific training. As discussed in [3], facilitating integration of reservists would include bringing them on board during times when the carrier is not being evaluated (such as FLEETEX or JTFEX) and making sure that administrative details are addressed before reserves embark.

Further research needs[3]

A major issue for reservists augmenting carriers is allocation of the available time to train in their required tasks. The appendix lists several areas for further research, including studies to determine (1) the required training time to retain minimal currency in a rate / NEC and feasibility of extending the time for annual training (AT) while reducing the time spent in monthly drills, (2) what training can be accomplished through self-paced, computerized training, and (3) ways to reduce the reservists' administrative requirements (which are roughly the same as those for the active duty).

Increasing the time devoted to training for some specialties brings up other research issues. For recruiting, how much would reservists need to be paid to encourage them to commit to more than 2 weeks' active duty training per year? For policy, should current reservists be *required* to drill more than 2 weeks per year, even though they originally signed up for only a 2-week commitment? Or should this be voluntary? Would employers be willing to hire reservists who train more than 2 weeks a year? Would recruiting and retention of reservists suffer as they ponder the effect that more than 2 weeks' AT could have on their families, civilian promotions, and civilian skill levels?

3. The appendix provides a fuller description of further research needed concerning carrier augmentation.

2. Carrier augmentation of aviation intermediate maintenance within the Aircraft Intermediate Maintenance Department (AIMD)

Issue

The high-intensity operations described in the earlier CNA study [3] make large demands of the aircraft, and require frequent maintenance and checking of aircraft to ensure safety and effectiveness. Thus, aviation maintenance is critical for the sustainment of carrier airpower and the carrier's missions of projecting global presence and exercising overwhelming naval airpower. The earlier CNA study found that augmenting several ratings could double the firepower of the aircraft carrier during surge operations. We suggest augmenting specific intermediate-maintenance ratings in times of crisis that limit the sustainability of carrier firepower. As in issue 1, this would help provide a capability needed in war but not in peace, the traditional role of the military reserve.

Background

This is a different group of ratings than the flight deck and ordnance ratings we discussed earlier, but they are also among those needed to increase the sustainability of carrier firepower. With an additional 170 specially trained individuals (most of whom are in AIMD rates/NECs), high levels of carrier firepower can be sustained indefinitely, provided the global logistics network can support CVN requirements.

Discussion

Reference [3] found that reservists in the rates/NECs AD, AE, AMH, AMS, AS, AT, AZ, and PR can maintain their currency within their current allocated drill time, provided they had ready access to a functioning AIMD for most of their drills. The repair and maintenance of aircraft parts, which is conducted in an AIMD, is extremely specialized and requires use of sophisticated diagnostic and repair machinery. The technology supporting these activities is constantly changing. Easy access to a functioning AIMD and its active duty supervisors/trainers is essential to maintain readiness in these rates/NECs.

For reservists in other AIMD rates/NECs, training in excess of the current time allotted is required. Further, this training could best be conducted in units that are specialized in AIMD functions. The functional organization would ease the task of providing reservists in AIMD rates/NECs with high-quality training.

Recommendation

The Navy already collocates the training of many reservists in AIMD rates/NECs with the active component. We recommend expanding this practice to all reservists in AIMD rates/NECs wherever feasible.

Feasibility

This recommendation has the same feasibility issues as the recommendation for issue 1: (a) additional travel funds, (b) coordination between administrative units and operational training units, and (c) the effect on reserve morale, recruitment, and training. In addition, this recommendation would have the feasibility issue of how to provide equipment suitable for maintaining training. These AIMD rates are more equipment-dependent than are the ratings that we discussed in issue 1. Lastly, some rates/NECs in AIMD might require additional training time beyond the usual 2-week AT to maintain proficiency.

Further research needs

For AIMD training, it is particularly critical to conduct studies to (1) match billets with training facilities, (2) determine the rates/NECs that could be efficiently grouped within the same unit and what facilities are needed to support them, and (3) match reservists' training needs with the active duty's availability to support those needs (see the appendix).

3. Using reservists for increasing ship's time in AOR

Issue

The Navy, rotationally deployed worldwide, is a critical element of DoD's "4/2/1 strategy," as forward-deployed ships provide credible deterrence to would-be aggressors in four global areas of operations (AORs). Yet it takes many ships to *sustain* this global posture, year after year, because individual deployments are limited to 6 months to ensure a favorable quality of sailors' lives. This deployment limitation normally implies that individual ships will spend no more than 6 months per cycle (of about 2 years) in a deployed status. Furthermore, with additional PERSTEMPO, maintenance, and scheduling constraints, the ship is typically prevented from redeploying for about 18 months (although this number varies considerably).

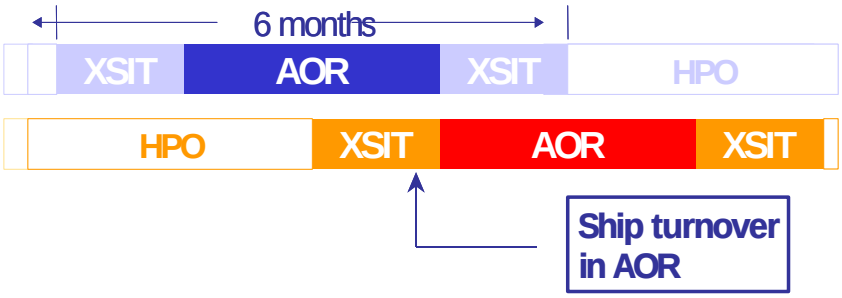
There is a natural desire to have ships spend more time deployed, but without a commensurate demand for increased crew PERSTEMPO. Toward this goal, there is a potential role for reservists in transforming the operational deployments of Navy ships to better support global deterrence. In the concept described here, they have a significant role: returning ships from overseas deployments. Doing so would enhance the Navy's capabilities and contribute to the improved integration of reserves with active duty units. It would contribute to a service needed intermittently, in both war and peace.

Background

The implication of the Navy's deployment arithmetic (6 months deployed, 18 months nondeployed) is that a warship might spend

only about 25 percent of its lifetime deployed.[4] Furthermore, for some distant AORs (such as the Persian Gulf), a ship may spend wholly half of its 6-month deployment transiting to the theater and home again, suggesting that it may spend only 12.5 percent of its lifetime in theater. To illustrate this, the following diagram shows a typical 6-month deployment from San Diego to the Persian Gulf, and the turnover of ships (and their crews) in the AOR. Besides showing the large fraction of the deployment spent in transit (xsit), figure 3 also illustrates that *both* ships are simultaneously deployed for about 6 months, even though only one ship is on station.

Figure 3. Illustration of a traditional ship turnover

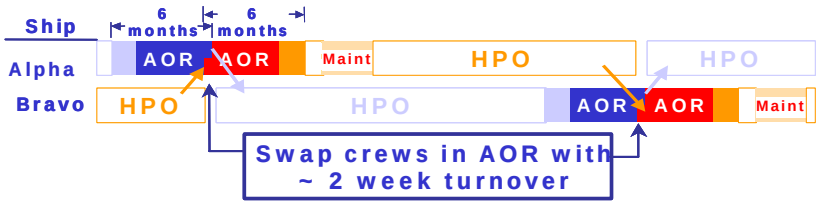


To address the need to increase the deployment percentages, without increasing the PERSTEMPO burden on sailors, the Navy has already begun exploring "crew-rotation" alternatives, which decouple the sailors' PERSTEMPO from the ships' OPTEMPO. An ongoing experiment involves three ships and three crews in the *Sea Swap* concept, which keeps a ship deployed for about 18 months (and in the AOR for about 15 months), and staffs the ship with three successive crews undergoing individual 6-month deployments. Figure 4 shows this scheme, illustrated for simplicity with two ships (alpha and bravo) and

4. There is a tendency, especially outside the Navy, to view this percentage as highly inefficient. That viewpoint overlooks the non-deployed roles that the ships perform, including periods as training platforms for sailors, as well as rotational assignments as the "strategic reserve" in case major war begins.

two crews (blue and gold), eliminates some of the time-consuming ship transits between home and distant AORs (the crews fly to and from theater), and thus holds the potential of offering significant operational utility.[5]

Figure 4. Illustration of an alternative crew rotation (e.g., *Sea Swap*)



Discussion

As discussed in a recent CNA study [6], there are alternatives for crew rotation besides *Sea Swap*. With proper planning, reservists could play an important role as part of the crews involved in *Sea Swap*, or in other experiments in alternative crew rotation policies.

Sea Swap and other alternatives would increase the time that a ship stays in AOR. Besides adding significant enhancements to DoD's global strategy, using reservists in new crew rotation schemes would promote AC-RC interoperability by exposing reservists to state-of-the-art equipment on active ships.

Feasibility

We believe that reserve participation in new crew rotation schemes like *Sea Swap* would be more feasible for surface ships than for aircraft

5. Although this scheme involves the transit, by air, of entire crews, the cost of this transportation is small in contrast to the added percentage points of a ship's deployment in the AOR, given that the acquisition and life-cycle costs of individual warships are measured in billions of dollars.

carriers. There are clearly some difficulties with alternative crew rotation schemes, but many of these difficulties are identical, or similar, to the ones that the Navy is ironing out during the experiments with *Sea Swap*: flying entire crews to / from overseas theaters, with associated costs and force-protection issues; altering ship maintenance schedules; and dealing with short periods of "dislocated crews."

Recommendation

As the Navy embarks on *Sea Swap*, the experiment should be adjusted to incorporate reservists. Because that return is more than 18 months away, there is still time to adjust the experimentation plans, and effectively double the value of the experiment (by exploring two crew-rotation alternatives instead of just one).

Further research needs

Further research should and could be incorporated within the bounds of the ongoing research in support of the *Sea Swap* experiment. However, there is no need to study this effort further, unless the Navy is willing to adapt its experiment to examine this concept.

4. Staffing the ship during nondeployed periods

Issue

Ships require maintenance periods, and crews cannot be deployed 100 percent of the time. Nondeployed periods are an important time for ship maintenance. Nondeployed periods give crewmembers time to spend with families, and are a time for getting prepared for the next deployment. Reservists are already used to help staff many kinds of ships during nondeployed periods. This is a useful role that should be considered for expansion. For example, one especially useful aspect of this role is for reservists to stand watch during weekends in port during nondeployed periods. This is consistent with a reserve role as providing services for intermittent demands, in peacetime as well as wartime.

Background

Before discussing nondeployed periods, we need to define the term *deployment*. The Navy defines it as being away at least 56 consecutive days. In contrast, *underway* can be a much shorter period of time at sea, and usually refers to time at sea while not deployed. As we mentioned earlier, Navy ships spend a large fraction of their time in nondeployed status [6]. During these periods, active duty sailors maintain the ship and its equipment and continue some watch-standing duties. Tasks include painting, cleaning, inspecting, and guarding the ship and repairing equipment. The Navy retains active duty crews even during periods of overhaul. Instead, reservists could take on more of these tasks.

Some types of nondeployed work contribute to attrition of active duty personnel from the fleet and/or represent an inefficient use of recently trained sailors. CNA examined the effect of nondeployed work on attrition of active duty sailors. Focus groups told researchers

that nondeployed periods often involve tedious work. Major preplanned maintenance and inspections are the two categories usually mentioned. All else equal, sailors who have experienced a preplanned maintenance attrite at a higher rate than sailors who have not [7]. Attrition harms readiness directly by creating gapped billets. Furthermore, the ill effect will linger after the gap is filled. Studies show that crew turnover affects readiness in the areas of equipment, supply, training, and personnel [8, 9].

Nondeployed periods are punctuated by frequent operational and training excursions.[6] On average, Navy ships spend 20 to 30 percent of their nondeployed time under way [6, 7]. Much of this time—but not all—is devoted to training active duty personnel for upcoming deployments. These training excursions don't always target the entire crew; mess workers, shopkeepers, and other members may not be directly involved in the training. In such cases, reservists can stand in for active members.

Active duty sailors who want to use nondeployed periods to plan activities with their families or take advantage of Navy education programs are disappointed. According to [10], sailors

> had not expected the nondeployed time under way when they enlisted and found the work arduous without the same sense of mission that is associated with deployments. In addition, long work hours, irregular scheduling, and unanticipated changes to the schedule created difficulties participating in voluntary education or community activities, as well as scheduling problems for family activities or day care.

Sailors who spend 40 percent of their nondeployed time under way (larger than the average of 20 to 30 percent referenced above) are expected to have attrition rates of 12.4 percent, in contrast with 11.5 percent for sailors who spend only 30 percent of their nondeployed time under way [10].

6. As mentioned earlier, the Navy considers a ship "deployed" when it is away from its home port for at least 56 consecutive days.

Discussion

Expanding the use of reservists would free up active duty manpower or simply permit sailors to enjoy a true standdown. Improving the quality of service in port is especially important now that leaders are contemplating extended deployments as part of Operation Enduring Freedom. Leaders are now predicting a 3- to 5-year conflict and expecting a pace of operations that has not been seen since Vietnam. Planners in the Navy Personnel Command are concerned about the effects on the morale and retention of active duty.

This plan is consistent with work-reduction initiatives started in FY98. It would promote interoperability by exposing reservists to the equipment of the active fleet and to the work practices of active duty sailors. Concerns about specific operational skills may be less relevant in port than at sea. In fact, the Navy has started using civilian contractors to perform in-port maintenance. Reservists provide a middle ground between active duty and contractors and can be part of the in-port mix.

Reservists could perform a variety of tasks. Those qualified in the maintenance of complex equipment could do such work. Lower skilled work is another possibility. According to [7], ships have more E-1--E-3 personnel on hand while deployed than while not deployed. However, there are more E-4--E-6 sailors. These differences are small (up to 15 people in each pay band) but form a consistent pattern. The bottom line is that in-port crews are more experienced, yet less likely to be doing the operational work for which they were trained.

Expanding the use of reservists during selected nondeployed underway periods would free up more active duty manpower for other uses, would improve their quality of life, would promote interoperability, would provide a safety valve for unanticipated changes in a ship's schedule, and could provide good quality training for the reservists.

Recommendation

Expand the use of functional reserve associate units to augment the active crew during nondeployed periods that are not critical for workup on the way to deployment.

Feasibility

Giving reservists these roles without corresponding incentives could have an adverse effect on reservists' morale, recruitment, and retention. If these roles were scheduled to include reservists in more underway or operational exercises, reservists might find these roles more acceptable. An incentive, such as additional pay, could also make these roles more attractive. Many of these roles are most appropriate for lower paygrades or the private sector, but reservists have fewer sailors in lower grades. Reservists might not be available in all skills needed for in-port work. Implementation would need to be structured carefully, with potential changes to sea-shore rotation.

Further research needs

Monitor this expansion program in its early stages.

5. Have the reserve EA-6B squadron train with Marine Expeditionary Units (MEUs)

Issue

The EA6-B Prowler electronic warfare aircraft is a unique national asset that can be deployed from land bases and aircraft carriers. It is included in every aircraft carrier deployment. Its primary mission is to protect fleet surface units and other aircraft by jamming hostile radars, electronic data links, and communications. With the retirement of the EF-111 Raven, the EA-6B was left as the only radar jammer in the Department of Defense. Five new squadrons were stood up, four of which are dedicated to supporting USAF Aerospace Expeditionary Force wings. The EA-6B's importance to all the services means that it is a high-demand, low-density asset.

Our concept is to have the reserve EA-6B squadron operate more often with Marine Expeditionary Units (MEUs) for training, and expand its mission to train as an expeditionary squadron as well as a carrier-based squadron. This would increase the missions and workload they could provide—during peacetime detachments or in times of war.

Background

The EA-6B is an electronic aircraft that performs jamming and electronic surveillance missions. It is a high-demand, low-density (HDLD) asset, supporting Navy, Marine, and Air Force operations. The low-density situation is getting worse because of center wing cracks and airframe fatigue, further reducing an already overworked inventory.

The Navy currently has one reserve EA-6B squadron of four aircraft (VAQ-209). One of the most successful reserve integrations was

during the Kosovo operation when VAQ-209 deployed two aircraft, aircrew, and maintainers to operate from Aviano. The squadron has up-to-date ALQ-99 pods and supporting test benches.

The utilization data for the reserve aircraft suggest that they could expand their roles and accept further missions by adding more reservists. As part of the reserve carrier air wing, the aircrew for VAQ-209 attempts to maintain shipboard qualifications. The documented number of cats and traps suggests that the crews have difficulty maintaining these qualifications on a full-time basis. But they could become qualified in time of war.

Discussion

The proximity of VAQ-209's home in Andrews AFB to MCAS Cherry Point, North Carolina, provides an opportunity for expeditionary training. The Marines employ their four EA-6B squadrons around the globe in land-based missions. We suggest that VAQ-209 increase its training opportunities by training with the Marines, and expanding its roles for more expeditionary missions. With the reserves training expeditionary style, they might be better utilized for short detachments. When you are expeditionary, it is possible to rotate personnel in and out more freely than during a carrier deployment. VAQ-209 has approximately 113 (7 regular officers and 106 enlisted) personnel. Although this is not a large number of personnel, the additional usefulness of the EA-6B could have a significant impact on improving force capabilities.

In larger, extended contingencies, they could become carrier qualified if needed.[7] Several crews could be associated with the aircraft to increase their capacity during peacetime and small contingencies. Among these crews could be a crew or personnel selected to be able

7. We do not mean to minimize what it takes to become carrier qualified. Becoming carrier qualified requires considerable time and effort. It is often not easy to find a window of availability where a squadron can obtain the number of cats and traps to attain or maintain proficiency. Some skills aboard a carrier, such as a pilot's qualification for night landing, deteriorate very rapidly.

to qualify rapidly for carrier operations, if necessary. This is not to underestimate the difficulty of achieving or maintaining carrier qualifications. As noted above, the current arrangement has difficulty maintaining carrier qualifications. But given time and necessity, it would be feasible.

Feasibility

EA-6Bs are a joint asset, and the combatant commanders decide how they will be used. In other words, associating them with the Marine Corps would not eliminate their ability to assist in carrier-based operations. The decision would be up to the combatant commander.

Recommendation

Associate EA-6B squadrons with the USMC for purposes of training. Provide extra crew to increase utilization, and allow selection of a specialized crew that could become carrier qualified if necessary. This is a good example of using reservists to relieve an HDLD situation. In such a case, it is logical that the staffing of the unit would be more than usual for a reserve unit.

Further research needs

This initiative will need to be studied further. Significant issues to be addressed in future research would include the costs of maintaining the squadron at Cherry Point during training and how to select and train crews to become carrier qualified rapidly, if the need arises.

6. Moving workload off ships

Issue

Every job that is performed on a ship requires space aboard the ship, and there is a price to pay for keeping a sailor on a ship: feeding, clothing, and keeping that sailor healthy. Also, moving a sailor off a ship eliminates the need for the other sailors ashore that provide the rotation base. With every additional sailor, there is the possibility that he or she will have a medical problem that requires emergency care or a Medevac that could slow or alter a ship's itinerary. Moving workload off ships allows ships more space, fewer potential disciplinary problems, and a lower cost of operations. Therefore, it makes sense to analyze the work aboard ships to determine whether some sailors could be moved off ship. Some types of workload, such as administration, information technology (IT), and some maintenance,[8] can be moved off the ship, making them more accessible to the Reserve Component, especially when these are subject to intermittent demand or demand that increases greatly during a contingency.

Background

The idea of moving workload off ships is a key part of current initiatives, such as DD-X and Smart Ship. There is historical precedent for such initiatives. The submarine force has successfully moved administrative jobs off submarines by moving Personnel Support Detachments (PSDs) ashore. Many of the maintenance functions that used to be performed by submarine tenders afloat are now done in port.

8. Moving too much maintenance off ship would be detrimental to a ship's readiness, so moving maintenance activities off ship should be studied carefully for feasibility. New technologies that the Navy is considering could lessen the risks of moving some maintenance off ship.

Discussion

Moving work off ships can reduce active endstrength not only by freeing billets for the reserve or private sector, but also by reducing the need for active personnel to provide shore rotation.

One possible target of work moved off ships would be administrative functions. Personnel who perform solely administrative functions are estimated to take 5 to 6 percent of the berthing on ships. It would be particularly appropriate to move administrative tasks off ships that require close coordination with shore commands. An example would be coordinating medical appointments for crewmembers with shore-based Navy medical facilities as the ship is steaming toward a particular port. Often a sailor gets injured during a deployment and needs attention as soon as he/she returns to CONUS. The hospital corpsman aboard ship might be in a different time zone than the Navy medical facility, and does not have access to communications for determining the doctor and time/date that a sailor could visit for an appointment. On the other hand, a shore-based sailor could perform this administrative function more efficiently because he or she is located at the Navy medical facility. Another possible recipient of work moved off the ship would be Ship Intermediate Maintenance Activities (SIMAs) manned by reservists outside fleet concentration areas. These SIMAs could be used for maintenance moved off the ship, into the intermediate category. SIMAs were an area where the Reserve made an important contribution during the Gulf War. A third target would be information technology. Some of these jobs could require access to computer systems, technical advice, and manuals that are difficult to keep aboard ship.

As work comes off ships, the reserve, active, and private sector must be compared. The reserve and active sector may have advantages because of their current experience with the ships and their crews. The private sector might be more efficient.

Feasibility

Feasibility would need to be assessed on a case-by-case basis.

Recommendation/need for further research

Evaluate specific proposals to move work off ships. Include an assessment of the optimal mix of the active, reserve, or private sector for the functions that are moved off ships. As a beginning point for such an analysis, we would consider whether there are functions that require access to shore-based commands, shore-based expertise, or other resources that are more easily obtained ashore.

7. Emerging skill niches

Issue

September 11th has increased our awareness of the importance of intelligence and information operations. For example, many reports suggest that terrorists are interested in disrupting or taking control of computer systems that operate important functions (e.g., dams, electrical grids, power plants) in the United States. Information operations (IO) involve "actions taken to affect adversary information and information systems while defending one's own information and information systems" [11]. Information operations in CONUS are likely to be an expanding need, and many of these jobs seem appropriate for reserve participation. These jobs have many of the attributes that have worked well for the Reserves in the past (such as medical billets): They require specialized technical expertise, they have predictable needs, they require 24/7 coverage by personnel, and many of the jobs require presence in CONUS.

Our concept is to increase reserve participation in such skill niches as IO, IT, linguistics, intelligence, and security/force protection. The Navy has many reservists working in these areas, who are candidates for possible expansion of reserve participation. Given the new emphasis on IO, it seems possible that there are new demands that will not be met by the active force, so IO might be an area where reservists are required to fill these needs. Many of these demands will be intermittent and, hence, would be appropriate for the reserve component.

Background

Changing technology and the changing threat make it necessary that the manning in these areas increase. Technology is constantly changing, making it difficult for active duty personnel who are tasked with

a variety of responsibilities to be current. Further, the threat the country is facing can change rapidly, placing unexpected demands on the military. For example, the need for Pastun linguists shot up rapidly after the September 11th attacks. The demand for people with special skills fluctuates depending on the operational situation, and as such is appropriate for contributions by the Reserves.

Discussion

There is a 24/7 need for intelligence officers to interpret photos, correlate data, and so on, and reservists are especially useful in performing these roles on weekends.

The Navy's reliance on reservists for security and force protection, both at home and abroad, is growing. Currently, the Navy does not have enough Masters-at-Arms (MAs) in its active force to meet the demand.[9] As a result, sailors trained in other areas must perform those tasks.

Feasibility

We do not know how well the Navy could recruit and retain reservists in IO, IT, and languages [12, 13]. IT is well compensated in the private sector, and both IT and languages are technical fields with a limited supply of trained personnel. The demand for these fields, nevertheless, is volatile, and part-time backup work as a reservist might be appealing. A plausible strategy is to start a pilot program and let it grow to its natural size.

Further research

Expansions of reserve participation in IO, IT, languages, intelligence, and security/force protection should be monitored. Special studies

9. Although there has been a shortage of MAs, the Navy believes that the current shortage will be solved fairly soon. It has established an MA career path for active duty that will provide a trained workforce pool to solve the problem.

might address the circumstances where it is most advantageous to use reservists or contractors for particular niches. Issues to be addressed would include the avoidability of costs, availability of personnel, and timelines for gaining security clearances.

Appendix: What is required for a Naval Reservist to remain current in his/her rate/NEC, and how is this best accomplished?

Background

Training opportunities for reservists during peacetime are limited by time and accessibility to facilities. Currently, reservists receive their training during monthly weekend drills and a 2-week annual training (AT) period each year (39 drill days a year). This is a "one-size-fits-all" solution to meeting training requirements that may not be the best approach to maintaining reserve readiness. As CNA found for enlisted rates/NECs supporting carrier firepower, the type and amount of training required to remain current varies significantly among rates/NECs [3].

Reference [3] found that the training requirements to support carrier aviation fell into six groups. At one extreme was the group composed of personnel in flight deck rates/NECs (ABH, AME, and ABF) that required very little training other than AT, provided they had prior active duty service working on a carrier flight deck. People in these rates require only 2 weeks each year working on a flight deck during a period of high operating tempo. Additional training time is beneficial, but not required. Drill weekends typically contribute little to their readiness, beyond completing administrative requirements.

At the other extreme was the group composed of those in rates/NECs supporting AIMD (AD, AE, AMH, AMS, AS, AT, AZ, and PR) that required ongoing training throughout the year in addition to the 2-week AT period. The repair and maintenance of aircraft parts, which is conducted in an AIMD, is extremely specialized and requires use of sophisticated diagnostic and repair machinery. The technology supporting these activities is constantly changing. Easy access to a func-

tioning AIMD and its active-duty supervisors/trainers is essential to maintain readiness in these rates/NECs. While the two-week AT period should preferably take place on board a carrier AIMD, the carrier does not need to be under way, provided adequate AIMD work is available on board. Even with access to an AIMD under the current system of 39 drill days a year, naval reservists cannot retain their qualification in all AIMD rates/NECs. Additional training time for reservists would increase this number of rates/NECs.

Reference [3] found that, in many instances, significant benefit is gained by organizing units functionally. This allows focused investment in upgrading and maintaining the facilities at which these units drill and eases the commanding officer's developing, implementing, and monitoring of a comprehensive training plan (ITP) for each person in the unit. Currently, some reserve units have a large number and variety of rates/NECs assigned to them. This dilutes the amount of time the commanding officer can devote to servicemembers in each rate/NEC and can adversely affect the quality of the training provided. Though ITPs are shared among units, there is no required uniformity in the ITPs. Further, the gaining command has no formal requirement to provide input to the ITP.

Recommended issues for further consideration

Revamp the reserve training program

Tailor the reservists' training time to rate/NEC

Acknowledge that each rate/NEC has different requirements. Determine for each rate/NEC the time required for training and the necessary attributes for the location of that training. Include an assessment for each rate/NEC of the feasibility and desirability of extending AT while reducing monthly drills. Develop for each rate/NEC Reserve-wide training plans that would meet those requirements. Have the supported active duty commands approve those training plans. Include an assessment of the cost of implementing such training plans. Available resources for training should be invested in rates/NECs with the highest return on investment.

Example: Increase length of AT training for flight deck rates/NECs while reducing monthly drill requirements.

Increased flexibility in training location and when training is conducted, to include feasibility of computer-aided training

Some currency can be attained through computerized training syllabi, although few programs currently exist. Determine which rates/NECs could benefit from such programs and develop these programs. Where feasible, allow flexibility to reservists to complete training at their pace and convenience.

Example: Reserve aviation ordnance men currently obtain the minimum certification required for handling ordnance through computer-based training.

Reexamine administrative requirements and the frequency of their occurrence

Currently, the administrative requirements for reservists are nearly as great as those for the active duty, except they must be compressed into 39 days rather than spread over an entire year. Some administrative requirements are required by law, whereas some are included to conform to historical precedence. Determine which of these administrative requirements can be reduced/eliminated and more efficient ways to satisfy those that remain.

Example: Reduce time required for processing orders and pay issues.

Match training opportunities to reservists' needs and active-duty's availability to support

Active duty officers are needed to act as intermediaries and central communications links between the reserve units' commanding officers and the active duty units that they support. (On the carriers, these are the Reserve Liaison Officers.) These officers need to be provided with sufficient information of the skills and training goals of each reservist seeking training at their active duty unit. The supported active duty units should endorse the overarching goals and means for achieving those goals. Allow reservists to report for AT only when

adequate training opportunities are available and the active duty can reasonably accommodate them.

> *Example:* Reserve Liaison Officers need copies of reservists' training records before they arrive for AT.

Revamp the billet structure of reserve units

Match billets with training facilities

Each drill location must have adequate training facilities to support the needs of the rates/NECs that drill at that location. If these facilities are not in place, investment should be made to upgrade the facilities. If the investment is not possible, rates/NECs with substandard training facilities should not be assigned to that unit. This might cause morale problems for some reservists.

Organize appropriate reserve units by job function

Determine which rates/NECs could be efficiently grouped within the same unit and what facilities are needed to support them. Determine existing facilities' capacity to meet these needs and, where deficiencies are identified, the cost of upgrading each facility.

> *Example:* AIMD rates/NECs are not appropriate for units that do not have access to an AIMD.

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