

Evaluating the Navy Aviation Career Continuation Pay Proposal

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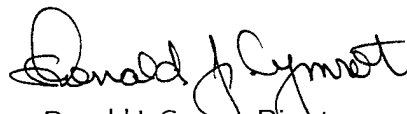
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Center for Naval Analyses

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Feb



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REPORT DOCUMENTATION PAGE

Form Approved
OPM No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources gathering and maintaining the data needed and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22302-4302, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.+

1. AGENCY USE ONLY (Leave Blank)	2. REPORT DATE February 1999	3. REPORT TYPE AND DATES COVERED Final
4. TITLE AND SUBTITLE Evaluating the Navy Aviation Career Continuation Pay Proposal	5. FUNDING NUMBERS N00014-96-D-0001 PE - 65154N PR - R0148	
6. AUTHOR(S) CS Moore, HS Griffis	7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Center for Naval Analyses 4401 Ford Avenue Alexandria, Virginia 22302-1498	
8. PERFORMING ORGANIZATION REPORT NUMBER CAB 98-140	9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Deputy Director for Military Personnel Plans and Policy Division (N13B)	
10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES		
12a. DISTRIBUTION AVAILABILITY STATEMENT CLEARED FOR PUBLIC ;DISTRIBUTION UNLIMITED	12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The Assistant Deputy Chief of Naval Operations (Manpower and Personnel) asked CNA to evaluate a proposed aviator retention bonus, Aviation Career Continuation Pay (ACCP). In this briefing, we estimate the impact of ACCP on the retention of naval aviators, predict the costs of meeting requirements under ACCP, and make comparisons with retention and cost under the existing aviation retention bonus. The report finds that ACCP will generate minor shortages of jet pilots, but retention in the prop, helo, and NFO communities will increase. In general, ACCP costs more than ACP because it purchases equality as well as a given rate of retention. ACCP is a relatively cost-effective means of providing equality.		
14. SUBJECT TERMS Careers, costs, compensation, naval aviation, naval personnel, personnel retention, salaries	15. NUMBER OF PAGES 52	
	16. PRICE CODE	
	17. LIMITATION OF ABSTRACT SAR	
18. SECURITY CLASSIFICATION OF REPORT Unclassified	19. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	20. SECURITY CLASSIFICATION OF ABSTRACT Unclassified

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18
299-01

Evaluating the Navy Aviation Career Continuation Pay Proposal

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In April 1998, the Assistant Deputy Chief of Naval Operations (Manpower and Personnel) (N1B) asked CNA to evaluate a proposed aviator retention bonus, Aviation Career Continuation Pay (ACCP). In this briefing, we estimate the impact of ACCP on the retention of naval aviators, predict the costs of meeting requirements under ACCP, and make comparisons with retention and cost under the existing aviation retention bonus.

If adopted, ACCP would be implemented as a Navy instruction consistent with anticipated legislative changes. The Navy has incorporated some features of ACCP into its FY99 retention bonus program. However, legislative changes will be required before the Navy can fully implement the ACCP program we describe in this briefing.

Why ACCP?

- OSD—working to revise legislation governing aviation bonuses (Sec. 301b of USC Title 37)
- Navy proposal is ACCP
 - Fits within OSD’s draft guidelines
 - Responds to aviators’ dissatisfaction with ACP
- ACCP—a retention bonus that differs from ACP in that it emphasizes
 - Retaining highest quality aviators across communities
 - Providing equality across communities and stability in bonus amounts

The Navy designed ACCP as part of OSD’s effort to change military aviation bonuses, and the proposal is consistent with the several broad guidelines laid out by OSD for new legislation. It was also designed to address the dissatisfaction that many naval aviators have voiced toward the existing military aviation retention bonus, Aviation Continuation Pay (ACP).

ACP is paid in annual installments to eligible aviators between the expiration of their minimum service requirements (MSRs) and the 14th year of service (YOS). In the Navy, 14 YOS corresponds to the end of the department head (DH) tour. We will discuss specific concerns with ACP later in this briefing. A second bonus, Aviation Career Incentive Pay (ACIP), is a career entitlement that affects retention. The ACCP program would replace ACP; it would not affect ACIP (but we anticipate new legislation for that program as well).

ACCP is meant not only to serve as a retention bonus but also to provide greater equality across communities, to create stability in bonus amounts, and to target high-quality aviators. The interest of Navy leadership in ACCP lies, partially, in the view that such a program will benefit both morale and retention. In addition, the belief that ACP simply no longer works as a retention tool is fairly widespread.

What Is ACCP?

- Fixed retention bonus paid to all eligible aviators on a per-tour basis
 - DST/Super JO \$20K/tour (non-jet pilots/unobligated)
 - Department Head \$24K/tour
 - XO \$19K/tour
 - CO \$24K/tour
 - PCC/Nonscreen O-5 \$20K/tour
 - DCAG/CVN XO \$24K/tour
 - CAG/CV \$24K/tour
- New legislation required to implement above program

This slide shows ACCP as it was proposed in late spring 1998, when we began our analysis. Partly as a result of our findings, the Navy has since modified the ACCP proposal. We will discuss those modifications as we progress through the analysis.

Two features of ACCP distinguish it from ACP. First, aviators will earn ACCP when they commit to any of the tours listed above, some of them very senior. The post-DH tours fall outside the legal seniority limit of ACP. Thus, new legislation will be required to implement ACCP.

Second, ACCP bonus amounts are equal across communities. In contrast, current law allows the services to offer *any* amount of ACP up to \$25,000 per contract year to a shortage community. Since the inception of the ACP program in FY89, the Navy has based bonus amounts on the size of expected department head shortages in each community for that year. Some communities have never been eligible for ACP, while others—such as VFA—have received large bonuses in most years.

As with ACP, aviators become eligible for ACCP when they reach MSR. Because their initial obligations usually expire after 10 YOS, jet pilots usually will not qualify for the \$20,000 bonus for the disassociated sea tour (DST) or Super JO tour (9-10 YOS).

Multiplying these bonus amounts by annual requirements, ACCP will cost \$18.9 million per year. This is significantly higher than the \$11.3 million per year that MPN planners had projected for ACP spending over the coming years. By our estimates, however, \$11.3 million in ACP will not meet future requirements.

Outline

- Potential advantages of ACCP
- Value of ACCP
 - Original and modified proposals
- ACCP impact on retention
 - Quantity and quality
- Costs of ACCP vs. ACP
- Policy recommendations

We begin our analysis by reviewing the shortcomings of existing military aviation bonuses, and the potential of ACCP to address those shortcomings. We then examine ACCP itself, computing its value to aviators and its consequent impact on retention. We predict the quantity of retention and also examine the ability of ACCP to attract the highest quality aviators. We then compare the costs of meeting requirements under the ACCP program with the expenditures necessary under ACP. We conclude with some suggestions for improving the cost- and retention-effectiveness of ACCP.

Shortcomings of ACP

- Doesn't target sea billets other than DH
- Paid to officers who never make it to DH
- Concerns about rewards for ability/quality
- Concerns about equality—"haves/have nots"
- Maximum value still lags below FY89 levels
 - Gradual erosion of retention-effectiveness

Aviation management wants to be better able to address shortages (and potential shortages) of personnel in billets other than department head. For example, the disassociated sea tour, which occurs before the department head tour, is a non-flying sea billet, which is hard to fill. Because it comes just after the end of the MSR, it may even discourage good aviators from a career. A bonus specifically targeted to that tour may improve retention.

Although post-DH retention is a lesser problem, aviation leadership has been concerned about post-command commander resignations. Aviators earn ACP at this point in their career, but that bonus does not reward sea duty in particular.

Another concern about ACP is that it is paid to officers who never fulfill their obligations, which drives up costs. ACP contracts are signed well before the department head tour starts. Even though the contract obligates aviators through 14 YOS, between 10 and 30 percent of ACP recipients attrite before then. Reasons include injury, failure to select to O-4, and lateral transfer to another officer community. The Navy can mitigate this problem by awarding ACP contracts more selectively (bringing attrition closer to 10 percent). Although there is no ACP screen in effect now, it has been used in the past. Unfortunately, a screen puts community managers in the uncomfortable (and, some would say, inappropriate) position of predicting results of O-4 and lateral transfer boards. Partly for this reason, the CNO has ordered a "pay all takers" policy for ACP awards.

Aviation leadership also fears that ACP does not do enough to attract and reward quality personnel. Aviators who will go on to executive officer (XO) and commanding officer (CO) tours get paid the same as those who either fail to select for those billets or leave before they are eligible.

Equality (and, similarly, year-to-year stability) is also a concern. The Navy has paid its aviation communities differing amounts because expected shortages differ (the Air Force has tended to pay equal ACP bonuses). There is some concern that the resulting inequality creates castes of "haves" and "have nots," undermines morale, and, perhaps, harms retention.

Whether equality does affect retention is controversial. Most economic analysts and compensation specialists believe that it does not. On the other hand, most of the aviators we spoke to insisted that inequality does harm retention.

A final problem with ACP is that bonus amounts have eroded over time, especially for jet pilots. The value of ACP is vulnerable to changes in MSR (which may be either legal or institutional) and to inflation. As a result, ACP is not as generous a program now as it was when it started in FY89. In fact, despite FY98 legislation to increase both ACIP and the maximum ACP, the combined value of these programs to jet pilots still lags below FY89 levels. Eroding value can help explain why ACP may appear to have lost its retention-effectiveness over time. A backup slide shows how the value of ACP and of ACIP has changed since FY89.

Can ACCP Improve on ACP?

- Advantages of ACCP
 - Incentive for service in critical sea billets
 - Pays only if undertakes tour
 - Targets more dollars to high-quality aviators
 - Perceived as providing equity across communities
- Advantages of ACP
 - Targeted to greatest “at risk” point (MSR)
 - Flexibly targets shortages (typically jet pilots)
- ACP may be a good program, but one that has not paid sufficient bonuses

Both programs have strengths and weaknesses. ACCP addresses most of the concerns about ACP, but in so doing, sacrifices some of ACP's advantageous features.

ACCP is the only aviation bonus that specifically provides an incentive for sea duty. It includes a bonus for the DST and for post-DH sea tours.

Aviators do not earn ACCP unless they serve in the specified sea tour. ACCP also targets relatively more dollars to high-quality aviators than does ACP. We discuss quality targeting in greater detail later.

As we have seen, ACCP also requires that all aviators be paid the same amount for the same tours. ACCP is clearly a better across-the-board retention tool than is ACIP, which is paid to all aviators regardless of type of duty. Later, we examine the costs of equality.

ACP also has some advantages over ACCP. It concentrates dollars to aviators when they are at the greatest risk of leaving—the years between the end of the MSR and the start of the department head tour. After the department head tour, retirement exerts a strong retention pull. There is some question as to whether ACCP payments to more senior aviators are really necessary.

In addition, the Navy can fine-tune ACP to target shortage communities. There is a real risk that ACCP will pay too little to retain jet pilots, to whom

the Navy generally offers large ACP bonuses. ACCP bonuses may also be too high for other communities, committing the Navy to spend retention dollars, even when requirements could be met with no bonus. We will project ACCP shortages and surpluses later in this briefing.

With these trade-offs in mind, it's worth observing that ACP may be a well-structured program that simply is not generous enough. It may need to be repaired with increased bonus caps, together with a Navy commitment to program enough ACP funds to cover projected shortages.

Focus of Value and Retention Analysis

- We examine monetary value of ACCP to predict impact on retention from MSR to DH tour
- This analysis does not (and cannot)
 - Account for any impact of pay equality on retention
 - Account for any impact of non-pecuniary factors (e.g., leadership) on retention
 - Predict impact on retention at later career stages (e.g., post-DH)

Our retention metric is the fraction of aviators who remain in the community between MSR and the start of the department head tour (at YOS 11). We assume that aviators who make it to that point will go on to serve in department head billets. It is right after the MSR that aviators are at the greatest risk of leaving, until retirement eligibility at YOS 20. Retention also drops off at YOS 15-16, but most aviators who leave at that point do so because of failure to select to O-5. Furthermore, department head billets are probably the hardest to fill because they require specific training. For example, an F-14 pilot can't be a department head in an F/A-18 squadron. In other sea tours, the assignment policy is less rigid.

Our predictions are based on the statistical model in CNA Research Memorandum 89-61,* which relates aviation pay to YOS 6-11 retention. The Navy uses the same model to help formulate each year's ACP program.

This analysis does not account for any impact of pay equality on retention. To the best of our knowledge, no formal empirical work exists that relates the amount of bonus equality (or inequality) to retention in particular communities, or to aggregate retention.

Similarly, we do not account for any impact of factors that do not relate to military compensation. These factors include leadership, quality of

*Donald J. Cymrot, *Implementation of the Aviation Continuation Pay (ACP) Program*, April 1989.

working life/assignments, duration and frequency of family separation, civilian salaries, and civilian hiring. Changes in any of these will probably affect retention. However, we assume they are fixed and that the bonus is the only retention driver that changes over the next several years.

Finally, we are unable to predict the impact of ACCP on retention beyond the years between MSR and YOS 11. Post-command commander retention has been of concern to aviation leadership for several years now. The bonus was designed, in part, to address shortfalls in these sea billets. However, we know of no statistical models that estimate the impact of pay on post-DH retention.

What Is ACCP Worth? Methodology

- ACCP expected present value
 - Evaluated at MSR
 - 10-percent discount rate
 - Separate selection probabilities for jet, prop, helo, and NFO communities
- Selection to XO/CO and beyond—two cases:
 - Optimistic expectations
 - Aviators assume they are in top 30% of DHs
 - Average expectations
 - Aviators' expectations same as actual probabilities of selection/promotion

The first step in our retention analysis is to measure the value of ACCP from the standpoint of the aviator at the end of MSR. We perform separate calculations for jet pilots, prop pilots, helo pilots, and NFOs. The timing of the bonus payments that we assume is shown in a backup slide.

We assume that aviators base their stay-leave decision on the present value of the bonus earnings that they expect from the MSR forward, and that they discount future earnings at a rate of 10 percent.

The bonus earnings that an aviator expects depend, in part, on how he perceives his chances of selecting to the more senior ACCP billets. Using data on historical selection rates and future requirements, we estimated the probability that an aviation department head will select for each of the subsequent bonus-eligible billets. These probabilities differ among the four aviator groups: jet pilots have the best chance of selecting for command, followed by helo pilots, prop pilots, and NFOs.

We then developed two separate calculations based on different assumptions about career expectations beyond department head. The first assumption is that aviators are optimistic about their prospects of selection to XO/CO and subsequent billets. The second is that aviators have average expectations. In our analysis, aviators are optimistic if they are certain that they will make XO. From our data, this means that an aviator believes himself to be in the top 30 percent of department heads.

Aviators have average expectations if they equate their own chances of selection from department head to XO to the averages we find in the data. This implies that aviators know, and act upon, historical averages and other indicators of their chances when deciding whether to remain in the Navy. The probabilities of reaching XO reflect both the retention decisions of the aviator and the selection decisions of the Navy.

For both the average and optimistic cases, we make the simplifying assumption that an aviator who stays expect to be a department head with 100 percent probability. Our retention metric is the fraction of aviators who retain through the eleventh year of service; it is reasonable to assume that a decision to stay to that point reflects an intention to serve in a department head tour. We apply this assumption in computing present values expected under both the ACP and ACCP programs. In reality, there is a chance of attrition prior to YOS 11, which we incorporate into subsequent estimates.

We show results for both the average and optimistic cases, for two reasons. First, it allows us to see how sensitive ACCP results are to expectations. We are not sure how optimistic aviators are. Most of the aviators we spoke to said it was reasonable to assume that any aviator the Navy wants to retain will rank himself in the top 30 percent of all department heads.

Second, the split helps us to predict how ACCP will affect aviators of varying quality. The results we show for “optimistic” aviators can also be taken to apply to the *best* aviators—the top 30 percent that the Navy will eventually select for command. In this case, we must assume that aviators know their prospects by the time they reach MSR.

MSRs for the four aviator groups are:

- Jet pilots, 8 years after flight school (“winging”)
- Prop and helo pilots, 7 years after flight school
- NFOs, 6 years after flight school.

The Navy adds another year to the legal helo pilot obligation of 6 years. We assume that it takes aviators 2 years to complete flight school. Thus, the representative jet pilot in our study will reach his MSR after completing 10 years of service, prop and helo pilots will have 9 years of service, and NFOs will have 8 years of service.

What Is ACCP Worth?

Expected Present Values at MSR, \$K

<i>Aviator expectations:</i>	Average	Optimistic
Jet	36.6	50.9
Prop	47.4	62.6
Helo	48.2	63.1
NFO	41.5	56.0

Discount rate 10%

Value to jet pilots significantly lower
than value to other communities

We report the expected present value of ACCP above. Under the plan as proposed, jet pilots will earn less than other aviators. The reason is that jet pilots will not earn the DST/SJO bonus. Even if they did, it would not affect their post-MSR valuation of ACCP—and, in turn, it would have no impact on their retention decisions.

Helo pilots will value ACCP more than will prop pilots or NFOs because they have greater chances of selection to XO, CO, and subsequent billets.

Note that aviators with average expectations will value ACCP less than will those who are optimistic. Optimistic aviators will place an average of 33 percent more value on the ACCP package.

Restoring Value to Jet Pilots

- Original ACCP proposal
 - Pays jet pilots less than other communities
 - Pays jet pilots less than recent ACP
 - Jet retention already a concern
- ACCP modification
 - Increase department head bonus for jet pilots
 - Because jet pilots won't get \$20K for DST/SJO tour, we analyze \$20K increase in jet pilot DH bonus
 - Will boost retention while preserving "across-the-board" aspect

Jet pilots tend to earn higher ACP bonuses than do the other communities. ACCP inverts this practice by paying jet pilots less than any other community. Last year, the average jet pilot bonus was about \$17,000 per year, whereas most prop pilots, helo pilots, and NFOs were ineligible for any ACP. Despite these relatively high bonuses, jet pilot retention fell short of expectations (the Navy did, however, meet requirements in most jet pilot communities). Furthermore, shortages of jet pilots are expected to worsen because year groups 92 through 94 are very small. This is true throughout aviation, but especially for the jet pilot communities, which traditionally have the biggest shortages anyway.

We worked out a modification to the original ACCP proposal with N13 and NPC-4 staff. To maximize post-MSR jet pilot retention, ACCP should target more jet pilot dollars to the department head tour. In general, jet pilots will not be eligible for the \$20,000 DST/SJO bonus, so we suggest increasing the department head bonus to jet pilots by that amount. The change preserves the equality aspect of the bonus and at the same time targets retention dollars more cost-effectively.

Suggested ACCP Modification

- Increases department head bonus to jet pilots
 - DST/Super JO \$20K/tour (non-jet pilots/unobligated)
 - **Department Head \$44K/tour for jet pilots--\$24K others**
 - XO \$19K/tour
 - CO \$24K/tour
 - PCC/Nonscreen O-5 \$20K/tour
 - DCAG/CVN XO \$24K/tour
 - CAG/CV \$24K/tour
- Estimated cost: \$20.3M/year
 - Later, we estimate the costs of meeting requirements

Above, we lay out the modified ACCP program. Multiplying these bonus amounts by annual requirements, we arrive at an initial cost estimate of \$20.3 million per year. Later in the analysis, we ask if these bonuses are sufficient to meet requirements. If they are not, we estimate the costs of meeting requirements under ACCP.

What Is Modified ACCP Worth?

Expected Present Values at MSR, \$K

<i>Aviator expectations:</i>	Average	Optimistic
Jet	52.8	67.0
Prop	47.4	62.6
Helo	48.2	63.1
NFO	41.5	56.0

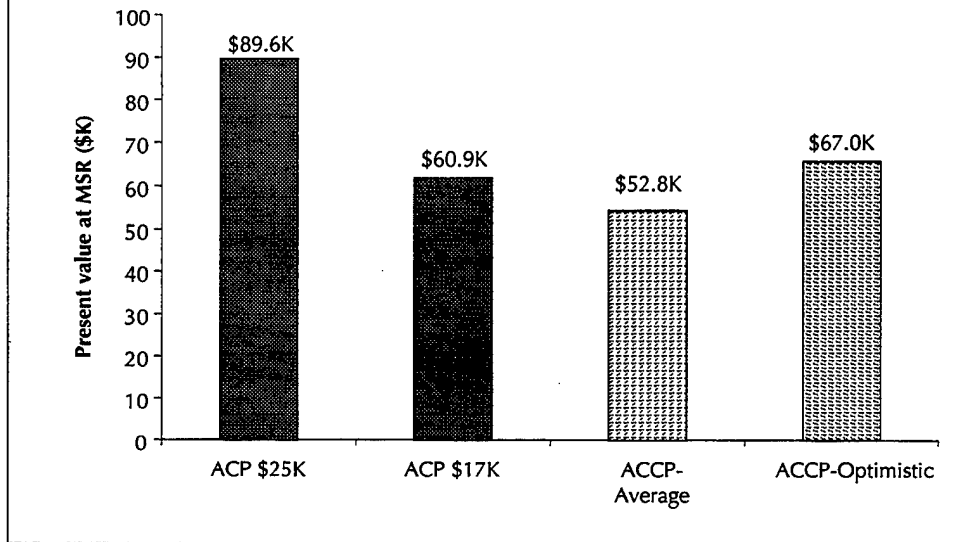
Discount rate 10%

Inequality across platforms reduced
but not eliminated.

The modification increases the expected present value of ACCP to jet pilots at the end of their initial obligations. The \$20,000 increase means that jet pilots will now collect higher value than do other aviators who choose to stay in the Navy, restoring the usual relationship between bonus size and community.

For the remainder of this briefing, we will examine the modified ACCP proposal.

Jet Pilots: ACCP Offers Less Than Maximum ACP, But Similar Amount to Recent ACP



How does ACCP compare to ACP? The maximum ACP currently available under law is \$25,000 per year. For jet pilots, that amounts to a maximum of \$100,000 paid out over the 4 years from the end of the MSR through YOS 14. Applying a 10-percent discount rate to those annual payments, the maximum expected present value available to jet pilots is \$89,600. This is significantly more than the expected present value available under (modified) ACCP. To an optimistic jet pilot—one who is sure he is going to make XO—the ACCP package is worth \$67,000 at MSR. Of course, the more optimistic an aviator is, the more he will value ACCP. However, the value of ACCP is less than that of ACP even for a jet pilot who is *sure* of reaching *all* ACCP-eligible milestones, including CAG (\$78,300 vs. \$89,600).

Thus, ACCP cannot reproduce the retention pull of which ACP is capable. Its value is instead comparable to that of the Navy's recent ACP offerings to jet pilots. The average \$17,000/year contract offered in FY98 has an expected present value of \$60,900, which falls between the average and optimistic ACCP cases.

The present value calculations reported here would change if we used a different discount rate. However, the effect on the *difference* between the two bonus systems would be negligible. If we had used a 5-percent rate instead of a 10-percent rate, the value of ACCP would increase relatively more than the value of ACP, but the basic relationships shown in this slide would remain.

Because the Navy has not approached the maximum ACP bonus to other communities, we do not make those comparisons here. Clearly, ACCP offers prop pilots, helo pilots, and NFOs more than they have traditionally been offered. A backup slide shows the value of ACCP for those communities.

ACCP Retention Effects: Jet Pilots

<u>Change in Retention Resulting from ACCP (Pct. Points)</u>		
	Average	Optimistic
ACP baseline:		
\$25K	-16.8	-10.3
\$19K	-7.0	-0.1
\$17K	-3.7	+2.8
<u>ACP Contract That Pays Same PV as ACCP (\$K/yr)</u>		
	14.7	18.7

How will ACCP affect jet pilot retention rates? We computed the change in retention rates that would result from moving from ACP (the status quo) to ACCP. We present three ACP baselines for comparison. Here and throughout this briefing, we examine retention from the end of the MSR through the 11th YOS, during which the department head tour starts.

The retention results shown here are weighted averages of the changes we predict for pilots in the VFA, VF, VS, VAQ, and VQ JET communities.

Compared to a hypothetical ACP bonus of \$25,000/year, the jet pilot retention rate will be significantly lower under ACCP. Our model predicts that jet pilot retention will be 10.3 to 16.8 percentage points lower under ACCP than it would be under a \$25,000/year ACP contract.

Last year, the highest ACP bonus that the Navy offered to jet pilots was \$19,000/year. If aviators are optimistic, retention will barely be affected in comparison to a \$19,000 ACP contract (a tenth of a percentage point). If aviators have average expectations, the \$19,000 ACP contract would generate 7 percentage points more retention than would ACCP.

The average ACP offered to jet pilots last year was \$17,000 (including one jet community that received no ACP). ACCP retention may increase or may decline in comparison with the FY98 average bonus. Among aviators with optimistic expectations, retention will increase by 2.8 percentage points.

To place the retention results in a familiar context, we converted the value of ACCP into its ACP contract equivalent. This yields the ACP contract that the Navy would need to offer to get the same retention as under ACCP.

For example, we have seen that, for an optimistic jet pilot, the expected present value of ACCP at MSR is \$67,000. The ACP contract that delivers the same value is for \$18,700/year—about the same as the \$19,000 contracts that the Navy offered last year. Thus, we would expect ACCP to generate about the same retention of high-quality aviators that ACP delivered in FY98. For the average aviator, ACCP equates to a \$14,700 ACP contract. This is a little lower than the average FY98 jet pilot contract.

ACCP Retention Effects: Prop Pilots

	Change in Retention Resulting from ACCP (Pct. Points)	
	Average	Optimistic
<i>ACP baseline:</i>		
\$17K*	-3.8	+0.5
\$0K	+13.1	+17.3
	ACCP Contract That Pays Same PV as ACCP (\$K/yr)	
	10.8	14.2

*ACP contract which gives all aviators the same PV that a \$17,000 contract gives to jet pilots (\$60,900)

For prop pilots, helo pilots, and NFOs, we use a different set of ACP baselines. Since the drawdown, offerings to these communities have been infrequent and relatively modest. Between FY93 and FY97, the Navy has offered ACP contracts to only one of these communities per year—usually VAW. VP aviators were eligible in FY92 and FY98, and no helo communities have been eligible since FY94, when the Navy offered HM a \$9,000/year contract.

To represent this state of affairs in an analytically tractable way, we use a zero ACP baseline for prop, helo, and NFO communities. We also use a \$17,000 baseline because of interest in a hypothetical, across-the-board ACP.

Because ACP contract lengths differ by community group (contracts last 4 years for jet pilots, 5 years for prop and helo pilots, and 6 years for NFOs), comparisons are based on equivalent present values; the relevant contract pays the same present value to the community in question that a \$17,000 contract pays to jet pilots.

This slide shows the retention effect for prop pilots. ACCP will deliver a large retention increase compared to zero ACP—between 13.1 and 17.3 percentage points. This is the same prop pilot retention that the Navy would expect if it offered ACP ranging from an average of \$10,800/year to \$14,200/year. Such ACP contracts are considerably larger than the Navy has recently offered, so we'd expect the extra retention to more than meet requirements. We examine this issue later in this briefing.

ACCP will have rather small retention effects in comparison to a hypothetical ACP contract worth the same present value as a \$17,000/year jet pilot contract. If aviators have average expectations, our model predicts a retention decline of 3.8 percentage points. If aviators are optimistic, there will be a very small increase in retention.

The retention results shown above are weighted averages of results for the separate prop pilot communities VP, VQ PROP, VQ TAC, and VAW. Some communities will have higher retention than average—others, lower. Differences arise because of variation in historical retention and in responsiveness to changes in pay. Furthermore, the baseline assumption of zero ACP isn't entirely realistic, which affects how the results are interpreted. VAW, which is a carrier-based platform, is something of an outlier because the Navy offered it a \$10,000/year ACP contract in FY98. Thus, VAW retention will remain relatively stable under ACCP because the Navy already offers that community contracts of similar value.

ACCP Retention Effects: Helo Pilots

	Change in Retention Resulting from ACCP (Pct. Points)	
<i>ACP baseline:</i>	Average	Optimistic
\$17K*	-4.4	+0.7
\$0K	+17.0	+22.3
	ACP Contract That Pays Same PV as ACCP (\$K/yr)	
	11.0	14.3

*ACP contract which gives all aviators the same PV that a \$17,000 contract gives to jet pilots (\$60,900)

This slide shows the impact of ACCP on helo pilot retention. Results are similar to those found for prop pilots. Helo pilots have not been eligible for ACP in recent years. Our model predicts that helo pilot retention will increase by 17.0 to 22.3 percentage points. The impact on retention of adopting ACCP would be the same as if the Navy started to offer helo pilots ACP contracts ranging from \$11,000/year to \$14,300/year.

The retention results shown above are weighted averages of results for the HM, HS, HSL, and HC communities. There is some variation within the helo group but there are no obvious outliers.

ACCP Retention Effects: NFOs

<i>ACP baseline:</i>	Change in Retention Resulting from ACCP (Pct. Points)	
	Average	Optimistic
\$17K*	-2.1	-0.5
\$0K	+4.6	+6.1
	ACP Contract That Pays Same PV as ACCP (\$K/yr)	
	7.9	10.7

*ACP contract which gives all aviators the same PV that a \$17,000 contract gives to jet pilots (\$60,900)

Our results for NFOs are similar to those for prop and helo pilots. We expect ACCP to increase retention relative to the \$0 ACP baseline. The magnitude of the effect is smaller for NFOs because NFO retention is estimated to be less sensitive to changes in compensation than is pilot retention.*

*Refer to CNA Research Memorandum 89-61, *Implementation of the Aviation Continuation Pay (ACP) Program*, by Donald J. Cymrot, April 1989.

ACCP Retention Effects: All Communities*

	Change in Retention Resulting from ACCP (Pct. Points)	
	Average	Optimistic
<i>ACP baseline:</i>		
\$25K to Jet, \$0 to others	+4.1	+8.5
\$17K to Jet, \$0 to others	+7.5	+12.0
\$25K to all**	-12.2	-7.8
\$17K to all***	-3.5	+0.1

*Aggregated by weighing change in retention with annual department head requirements

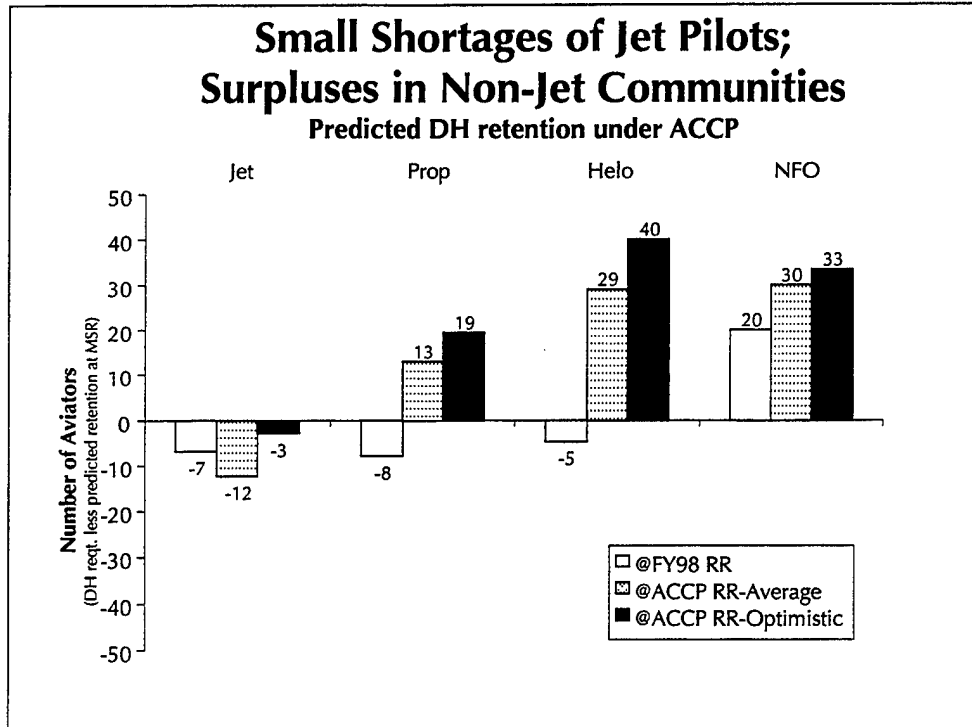
** ACP contract which gives all aviators the same PV that a \$25,000 contract gives to jet pilots (\$89,600)

***ACP contract which gives all aviators the same PV that a \$17,000 contract gives to jet pilots (\$60,900)

Here, we show how ACCP will affect aggregate pilot retention. Aggregate retention is of interest even though department head billets are community-specific. Subsequent billets do not require platform specialization. Furthermore, aggregate retention matters for filling billets other than those eligible under ACCP. These include shore billets, jobs in the Aerospace Engineering Duty Officer (AEDO) community and Acquisition, and General URL billets for which aviation is responsible.

We compared ACCP retention to four baseline ACP cases. The case that most resembles ACP in practice is the second one, in which jet pilots receive \$17,000 contracts, while other communities receive no ACP. Combining results from previous slides, jet pilot retention will change little, while retention in other communities skyrockets. This slide shows the net effect. ACCP will lead to a net increase in retention of 7.5 to 12 percentage points.

How does ACCP compare to across-the-board ACP? The results are mixed. Both programs are capable of securing the same rates of retention, depending on the amounts offered. If the Navy were to offer ACCP, retention would be about the same as if it offered across-the-board ACP contracts worth the equivalent of a \$17,000/year contract to jet pilots.



How do the retention rate changes shown in the previous slides translate into the Navy's ability to meet department head requirements? We use the retention rate changes that our model predicts to estimate shortages and surpluses of department heads under ACCP. We apply predicted retention rates to the year group 92 to 94 inventories in each community, and then compare the number retained to department head requirements in each community. Above, we report net shortages and surpluses within the four community groups. Individual communities within each group may show different patterns.

If last year's retention rates (RR in chart) apply in the future, the Navy will face a small shortage of about 7 jet pilots. ACCP will not cure the shortage; nor is it likely to make it much worse. If aviators have optimistic expectations, there will be a shortage of about 3 jet pilots. If they have average expectations, the jet pilot shortage will be only about 12 pilots. This is a net figure. The biggest jet pilot shortage would occur in VFA (8 pilots). These shortages are minor and can be solved with detailing.

In the prop, helo, and NFO communities, ACCP will generate a surplus of aviators willing to serve in the department head tour. Should FY98 retention rates continue to apply, however, the Navy would experience minor prop and helo shortages, and a surplus of NFOs.

We derived ACCP retention rates from the results shown in the previous slides. To approximate recent bonus programs, our baseline scenario is that jet pilots get \$17,000/year ACP contracts, whereas other communities are ineligible for ACP. To arrive at the ACCP continuation rates, we added the predicted change in retention to the FY98 baseline rates in each community. As FY98 baseline rates, we used 6-11 YOS cumulative continuation rates, which we obtained from aviation community management.

The forecasts hold fixed certain policies affecting attrition between MSR and the department head tour. The shortages may be larger than shown here (and surpluses smaller), if the Navy expands opportunities for lateral transfer or reduces O-4 selection rates. In that case, it will be the jet communities that suffer because there will be no surplus to absorb the higher attrition. A backup slide shows the results under the assumption that 20 percent of the aviators who make an initial decision to stay at MSR will leave before the department head tour.

Department head requirements (annual inflow) are shown in a backup slide.

ACCP Selectivity Effects: All Communities

- Number in excess of DH requirement who will want to stay after MSR:
 - Baseline (FY98 RR) 1
 - ACCP-Average expectations 56
 - ACCP-Optimistic expectations 86
- Average selectivity rate*
 - Baseline (FY98 RR) 100%
 - ACCP-Average expectations 82%
 - ACCP-Optimistic expectations 75%

*Selectivity rate = DH reqt / predicted retention

ACCP will improve the competitiveness of department head selection, especially in the prop, helo, and NFO communities. The Navy ceased holding selection boards a few years ago because of applicant shortfalls. It generally meets requirements now, but there is little if any selectivity.

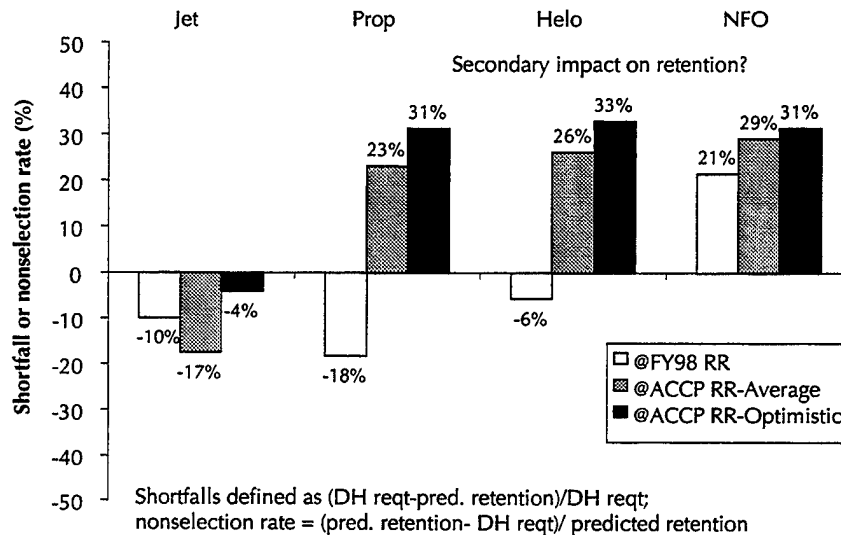
Our model predicts that on net there will be 56 to 86 aviators staying each year in excess of department head requirements. These figures reflect the small jet pilot shortages we saw in the previous slide.

If FY98 retention rates continue to hold, the Navy will need to select 100 percent of its applicants. Under ACCP, the Navy can be more selective—overall, about 75 to 82 percent of applicants will be selected for department head. Again, these figures reflect the combined selectivity of the jet, prop, helo, and NFO communities.

In practice, selection can occur just before the disassociated sea tour, at the O-4 board, or in a later department head screening board. Of course, if the Navy weeds out aviators earlier, it will have fewer to choose from later.

Higher Selectivity in Prop, Helo, NFO

Many ACCP Applicants for DH Will Not Select



This slide shows ACCP shortages and surpluses as fractions of the annual department head requirement in each community group. We predict that the jet pilot shortage will be between 4 percent and 17 percent of requirements. For the other communities, a significant fraction will not select for department head. For example, between 26 and 33 percent of helo pilots will not select.

However, high prop, helo, and NFO selectivity is best seen as a temporary product of the ACCP program. After a few years, high rates of non-selection may eventually dampen the retention effect. As these aviators see the Navy rejecting applicants, they will revise their expected ACCP earnings downward, and fewer will be willing to stay past MSR. The extent to which this happens depends on how aviators view their capabilities relative to those of their peers and how accurate those views are.

ACCP Retention Effects: Summary

- Quantity of retention
 - Jet pilot retention—only minor shortages forecasted
 - Prop, helo and NFO retention significantly higher
 - Retention capability of proposed ACCP less than maximum ACP of \$25K per year
- Quality of retention
 - ACCP offers about 33% more value to aviators who see themselves as “cream of the crop” than to average aviator
 - Translates into a 2- to 6-percentage-point overall retention difference relative to the aviator with average expectations
 - Overall selectivity increased by 18% to 25%

Overall, we predict that ACCP will generate shortages of jet pilots that are minor enough to be dealt with through detailing. These shortages resemble what the Navy would see if FY98 rates held. This is not surprising—the value of ACCP to jet pilots is similar to what they received in FY98 under the ACP program. We predict surpluses of department head applicants in the prop, helo, and NFO communities, ranging from 21 to 33 percent of requirements. Surpluses as large as these may not persist beyond the first few years of the program. However, ACCP provides such a large bonus increase that an upsurge of retention seems inevitable.

Our model shows that jet pilot retention will not be harmed by ACCP. However, if retention conditions worsen, ACCP may be inadequate. If raised to its \$25,000/year maximum, ACP is capable of offering over \$20,000 more value to jet pilots.

Our model also shows that ACCP will improve the quality of retention because it offers about 33 percent more value to optimistic aviators than it does to aviators with average expectations. This differential translates into a 2- to 6-point difference in retention between the top and the average (as we have defined them); the biggest quality effect is in the jet communities. In the other communities, ACCP's strong effect on numbers retained will allow the Navy more selectivity in choosing department heads.

ACCP Cost-Effectiveness

- We quantify cost of providing equality in an aviation retention bonus
- We estimate ACCP costs needed to:
 - Meet requirements for jet pilots *and*
 - Pay *all* eligible aviators the same amount
- We compare to ACP costs needed to:
 - Meet requirements for jet pilots
- We evaluate the cost-effectiveness of ACCP as an across-the-board tool

In the next few slides, we evaluate the cost-effectiveness with which ACCP buys retention.

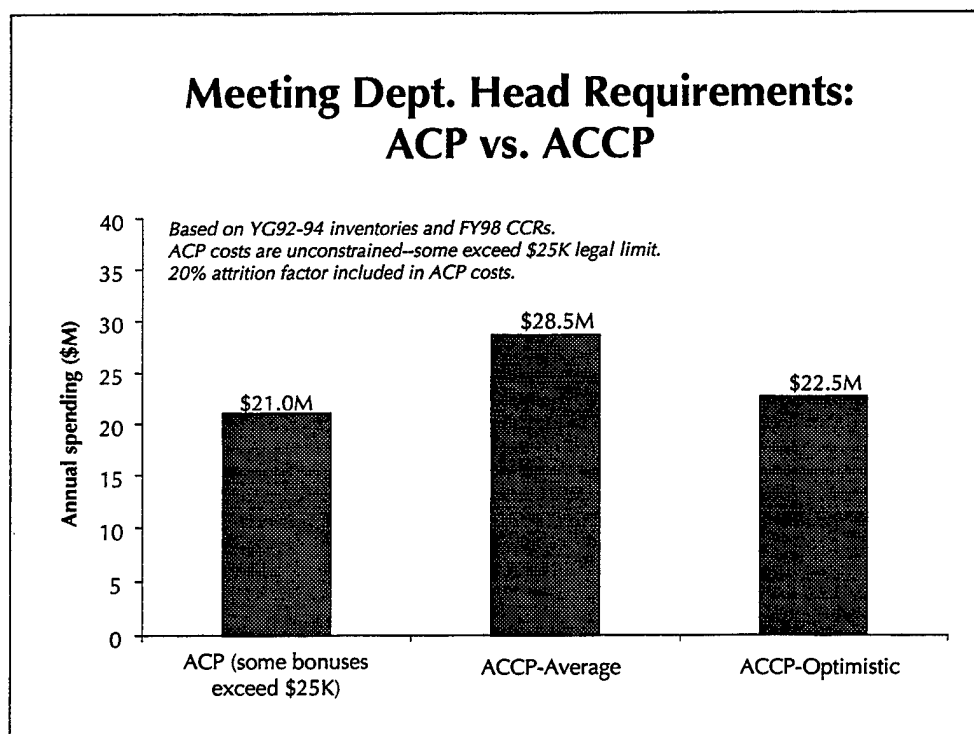
ACCP purports to help the Navy meet requirements while providing more bonus equality and stability than does ACP. But, in general, there is a trade-off between equality and costs. Paying the same retention bonus to everyone will typically be more costly than community targeting.

The estimated budget of the modified ACCP proposal—about \$20 million/year—may be insufficient to meet requirements. The Navy may need to offer higher bonuses, and spend more, than the proposal suggests.

We estimate how many ACCP dollars the Navy would need to spend to meet department head requirements in each community and, at the same time, pay all eligible aviators the same amount *in accordance with the ACCP proposal*. For example, jet pilots earn more for the department head tour than do other aviators, to compensate for their ineligibility for the DST/SJO bonus. We preserve such proportions as they exist throughout the ACCP pay scale when computing the new bonuses, and costs, of a retention-effective ACCP program. As in the value and retention analysis, our calculations here assume that equality, *per se*, has no impact on retention.

Because aviation leadership is interested in increasing equality, we also compare ACCP to a hypothetical across-the-board ACP program (roughly, the current Air Force bonus model).

Meeting Dept. Head Requirements: ACP vs. ACCP



To meet jet pilot and other department head requirements, ACCP bonuses will need to be raised from those in the (modified) proposal. How much they will need to be raised depends on assumptions about aviator expectations. Meeting FY00 department head requirements under ACCP will cost between \$22.5 million/year and \$28.5 million/year, depending on aviators' expectations. Meeting those requirements using ACP will cost about \$21 million/year (the ACP bonuses required for some communities exceed the \$25,000/year legal limit). Thus, ACCP will cost the Navy between \$1.5 million and \$7.5 million more per year than will ACP.

Our ACCP and ACP cost estimates are based on reasonable assumptions about the way the Navy would manage the programs. For example, there will be shortages of 1 or 2 jet pilots under the budgets we estimated; to cure them would require payment of extremely large bonuses. We assumed that the Navy would deal with such small shortages with detailing.

Our ACP cost estimate assumes that the Navy sizes its bonuses to attract 120 percent of its department head requirements. The extra 20 percent are needed to cover attrition between MSR and department head tour. In the past, the Navy has set bonuses to attract only 110 percent of requirements. In that case, future costs would be \$17 million per year instead of \$21 million per year.

If the Navy wants to cap ACCP spending at ACP levels, retention will suffer minimally in the optimistic scenario and more significantly in the average scenario. To meet requirements with the limited budget, the Navy would need to extend tour lengths.

ACCP costs more because it pays equal bonuses to all communities, and because more senior billets also earn bonuses. To relieve the department head shortages we predicted under ACCP, the Navy will need to increase bonuses across-the-board, not just to the community (and billet) experiencing the shortage.

Earlier, we predicted that ACCP department head shortages would be small—between 3 and 12 jet pilots per year. The corresponding program cost is about \$20 million per year. Thus, under ACCP, the Navy would pay a premium—up \$1.5 to \$7.5 million per year—to secure the retention of a small number of aviators. Paying each community just the amount necessary to prevent shortages, as in ACP, is cheaper. Even with such high expenditures, a small shortage remains. As we showed above, reducing the shortage to 1 or 2 jet pilots would require a budget of between \$22.5 million per year and \$28.5 million per year.

Of course, ACP carries some inefficiency because some recipients never serve on a department head tour. The Navy always needs to attract more aviators than are actually required—and needs to offer higher bonuses to do so. For example, the VFA bonus that will fulfill 120 percent of requirements is \$27,000/year. Were attrition not a concern, the bonus would need to be only \$21,000/year.

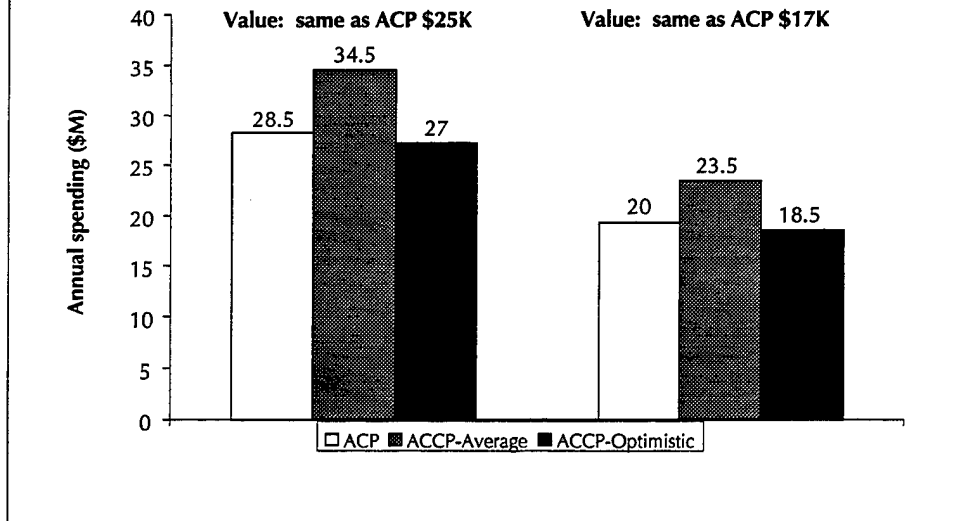
We are not certain what attrition rate aviation communities will face in the future. In the past, the Navy has assumed that 10 percent of ACP recipients will attrite, and our analysis of the data agreed with this pattern.* Community managers expect this fraction to be about 20 percent in the future (which accords with DOPMA guidance on O-4 selection). However, Navy policy-makers could try to suppress attrition among ACP recipients at the expense of nonrecipients. In practice, attrition will vary among communities. Accounting for this likely variation would reduce our ACP cost estimate.

Attrition is less of an issue under ACCP because aviators are not paid unless they undertake the tour. Thus, ACCP has no value to jet pilots who do not think they will select for O-4 and screen for department head. In contrast, ACP is largely paid before the O-4 selection point, providing an incentive for personnel who are not department-head quality to stay. It is for this reason that we apply the 20-percent attrition factor to the ACP estimates. However, if we were to apply the 20-percent attrition factor to ACCP as well, that program would cost between \$29 million and \$37 million per year.

These estimates assume that, to meet department head requirements under ACCP, the Navy would set bonus amounts that preserved seniority-pay relationships. Thus, the bonuses to PCC, CAG, and the like would all increase in proportion to the department head bonus. We made this assumption because the Navy has been concerned about “pay inversion” in aviation bonuses. If the Navy were to concentrate all additional bonus dollars on the department head tour, ACCP would begin to look more like ACP, and ACCP costs of meeting requirements would be considerably lower.

* This is based on examination of aviators who started to receive ACP in FY91, FY92, or FY93. An overall average of 11 percent of each cohort failed to complete the DH tour (12.9 percent FY93, 12.4 percent FY92, 7.3 percent FY91).

ACCP a Relatively Cost-Effective Across-the-Board Option



If equality is desired, ACCP is a reasonably cost-effective way of providing it. If the Navy were to pay all its aviators \$25,000/year ACP contracts, it would cost about \$28.5 million per year and meet most requirements. ACCP would cost between \$1.5 million less and \$6 million more, depending on aviators' expectations.

In an across-the-board bonus, annual ACP amounts would differ by community because of different contract lengths and discounting. Under the \$17,000 across-the-board option, ACP contracts would offer annual payments as follows: \$17,000 for 4 years to jet pilots, \$13,800 for 5 years to prop and helo pilots, and \$11,600 for 6 years to NFOs. Under the \$25,000 across-the-board option, ACP contracts would offer annual payments of \$25,000 to jet pilots, \$20,300 to prop/helo, and \$17,100 to NFOs.

In these calculations, we assumed that the Navy pays ACP to all aviators who want to stay, given these bonuses. Under the \$25,000 across-the-board scenario, 408 aviators will collect the bonus. We assume that at 11 YOS, surplus aviators attrite down to their communities' requirements. However, as we have seen, \$25,000 is inadequate to meet requirements in some communities. In that case, we assume that the Navy pays all takers through 14 YOS. Meeting requirements will be a bigger problem with the \$17,000 across-the-board option; note that it costs less than the budget needed to meet requirements.

Targeting of Platforms vs. Quality

	ACP	ACCP
Targeted to platforms With DH shortages	100%	63%
Targeted to DH-quality aviators	80% to 90%	92%
Targeted to XO/CO-quality aviators	31% to 34%	56%

This slide provides another way to show what the Navy purchases with each program. The main advantage of ACP is that it targets community-specific shortages. The main advantage of ACCP is that it targets quality. In practice, both programs do both things, to different degrees.

Both target dollars to platforms that are experiencing department head shortages. By design, 100 percent of ACP dollars go to shortage communities. About 63 percent of ACCP dollars will go to aviators who belong to these communities.

The Navy assumes that a percentage of ACP recipients will not reach the department head tour. In the past, attrition has been about 10 percent, but community managers predict a future rate of 20 percent or more. Therefore, ACP targets between 80 and 90 percent of its dollars to aviators who are of department head quality. ACCP does an even better job--about 92 percent of ACCP dollars go to DH-quality aviators.

The XO/CO cut is very selective: there is less than 1 XO billet for every 2.5 department head billets. Combining requirements data with ACP attrition factors, only 31 to 34 percent of ACP dollars goes to aviators who will eventually select for XO and for CO. In contrast, 56 percent of ACCP dollars goes to aviators who are of XO and CO quality.

These computations reinforce our findings that ACCP better targets quality than does ACP. ACCP also pays more than one-half of its dollars to aviators who are in communities that expect shortages.

Conclusions

- Retention
 - Only minor shortages of jet pilots forecasted under ACCP
 - Significant boost to retention/selectivity in prop, helo, and NFO communities
 - Generates relatively higher retention among high-quality aviators
 - Bonus inflexibility could lead to shortfalls
- Cost
 - ACCP will cost at least \$1.5M to \$7.5M more than ACP to meet DH requirements
 - ACCP a relatively cost-effective means of providing equality

Our analysis predicts that ACCP will generate minor shortages of jet pilots. These shortages are similar to what the Navy would see if it continued to offer FY98 bonuses. Retention in the prop, helo, and NFO communities will increase significantly because ACCP offers far more value than historical averages. This will permit a lot more selectivity, at least in the short run. By paying bonuses to XO's, CO's, and other senior aviators, ACCP encourages retention of high-quality aviators for department head.

Of course, ACCP could be in place for a long time; our retention predictions are based on short-term information. Should retention become a bigger problem, maintaining bonus equality will hinder the Navy's ability to respond. In contrast, the ACP program allows the Navy to target extra dollars to shortage communities, which reduces the cost of responding to retention problems.

ACCP will cost more than ACP to meet requirements. How much more depends on several factors, including aviators' perceptions of their chances of selecting for ACCP billets. The relative cost of ACP is affected by how that program is managed; ACP's cost-effectiveness would be greater with a quality screen. In general, ACCP costs more than ACP because it purchases equality as well as a given rate of retention. ACCP is a reasonably cost-effective way to provide equality.

ACCP Policy Recommendations

- ✓ Retain *authority* to increase department head bonus selectively, to shortage communities
 - More cost-effective than raising all bonuses to meet shortage requirements
 - Currently, predicted shortages small enough that longer tours a reasonable alternative
- ✓ Pro-rate ACCP bonus amounts based on length of time spent in billet
 - With shortages, bonus would increase
 - With surpluses, bonus would decrease
- ✓ Eliminate bonus for major command (CAG/CV)
 - Small retention impact; saves \$0.5M per year

There are ways for the Navy to improve the cost- and retention-effectiveness of the ACCP program. First, the Navy should not tie its hands by requiring equal bonus amounts to all communities. It should retain the legal and institutional authority to adjust bonuses selectively. Doing so would add to ACCP one of the best features of ACP—community targeting—while keeping the quality targeting feature of ACCP. However, even with the authority to do otherwise, the Navy can offer fixed amounts, and equal amounts if it sees fit to do so. The shortages we predict now are minor and can be solved by requiring longer tours. However, there may be times when higher bonuses will be needed for selected communities.

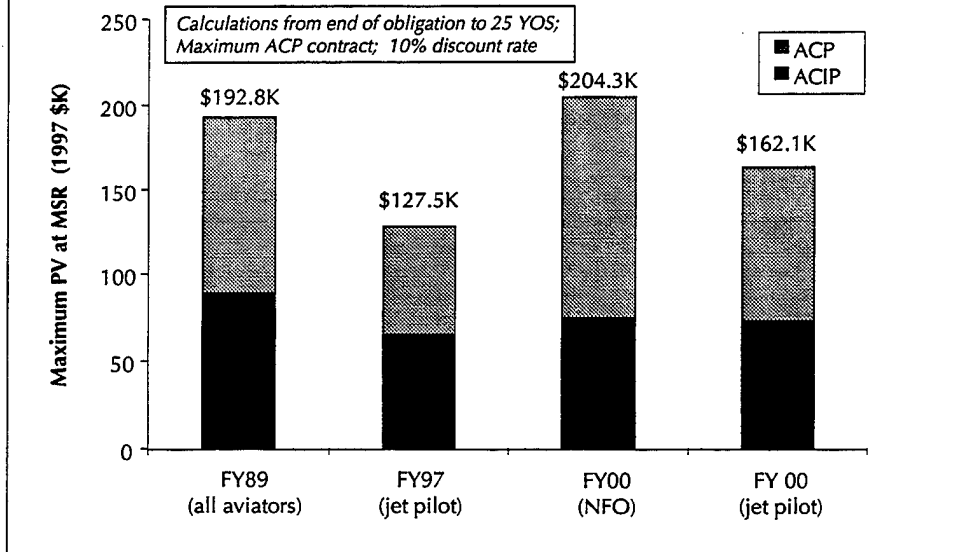
The Navy should also consider prorating ACCP dollars to time spent in the sea billet. This would cure a source of dissatisfaction that currently exists with the ACP program as well. Extended sea tours are commonplace. They generate extra hardship, so they merit extra compensation.

Finally, the bonus for major command is superfluous. Major command is considered its own reward. Eliminating the CAG/CV bonus will have a negligible impact on retention after MSR, and will save \$500,000 per year.

Based in part on these recommendations, the Navy has altered its ACCP proposal to eliminate the CAG/CV bonus and prorate bonuses to tour lengths. It is also considering raising the maximum available to jet pilot department heads to \$75,000 (\$25,000 for each year of the tour). If the latter policy is adopted, the Navy will more than meet jet pilot requirements. Because the revision targets dollars to shortage communities, its cost will be only slightly higher than our upper bound ACP projection of \$21 million. A backup slide summarizes the cost and retention impact of this change.

Backup Slides

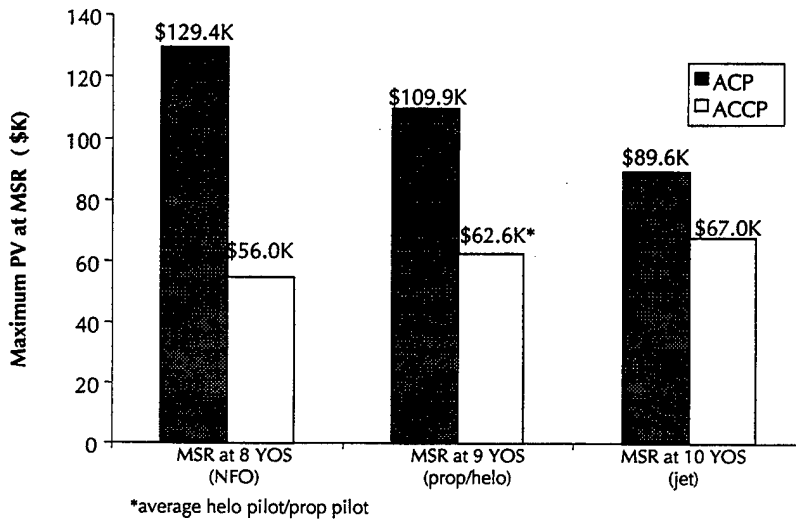
ACIP and ACP Have Increased-- But Value to Jet Pilots Still Lags



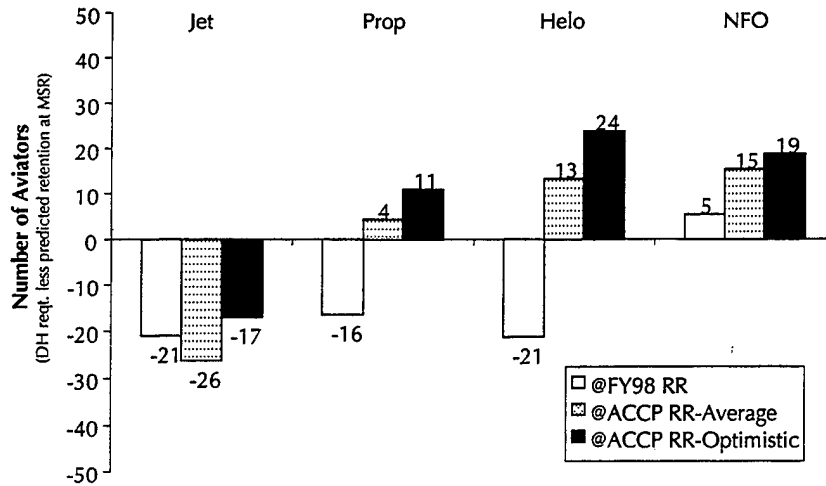
When ACP first began, all aviators had the same MSRs, regardless of platform. Since that time, increased obligation lengths have combined with price inflation to erode the value of aviation bonuses. The FY98 legislation was successful in restoring value to some aviators, but not to jet pilots, who are typically the aviators most difficult to retain.

Maximum Value of ACP vs. ACCP by Pilot Community

("Optimistic" quality reported for ACCP)



Dept. Head Shortages and Surpluses Under ACCP (Reflecting 20% Attrition)



**ACCP Retention Effects: Jet Pilots--
\$75K for DH Tour**

	<u>Change in Retention Resulting from ACCP (Pct. Points)</u>	
	Average	Optimistic
<i>ACP baseline:</i>		
\$25K*	-4.7	+1.8
\$19K	+5.2	+11.7
\$17K	+8.5	+14.9
	<u>ACP Contract That Pays Same PV as ACCP (\$K/yr)</u>	
	\$22K	\$26K

<p><i>ACCP Cost:</i> \$22.5 million/year</p>
--

ACCP Assumptions in Our Analysis

(Nonscreens for XO/CO not shown but included in calculations)

Completed YOS Tour Annual ACCP Total tour bonus

Completed YOS	Tour	Annual ACCP	Total tour bonus
9	DS/SJO	10000	
10	DS/SJO	10000	20000
11	DH	4000	
12	DH	10000	
13	DH	10000	24000
14			
15			
16	Xo	13000	
17	Xo/co	14000	19000
18	Co	16000	24000
19			
20	PCC	10000	
21	PCC	10000	20000
22	DCAG/CVN XO	12000	
23	DCAG/CVN XO	12000	24000
24	CAG/CV	12000	
25	CAG/CV	12000	24000

Department Head Requirements Used in This Analysis

Pilots	SQD	TMS	Analysis Pipeline	Annual Inflow into DH
	VFA	F/A-18	J	39
	VF	F-14	J	10
	VS	S-3	J	8
	VAW	E-2C	P	13
	VQ JET	ES-3	J	2
	VAQ	EA-6B	J	11
	VP	P-3	P	22
	VQ PROP	EP-3	P	4
	VQ TAC	E-6A	P	4
	HS	H-3, H-60	H	16
	HM	H-53	H	6
	HSL	H-2, H-60	H	41
	HC	H-46, H-3, H-53	H	19
NFOs				
	VF	F-14	NFO	10
	VS	S3	NFO	8
	VAW	E-2C	NFO	8
	VQ JET	ES-3	NFO	3
	VAQ	EA6B	NFO	18
	VP	P3	NFO	16
	VQ PROP	EP-3	NFO	6
	VQ TAC	E-6A	NFO	4
Total				268

Assumes a 2.5 year tour length. Includes 20 TACRON billets which we allocated proportionately over all communities. Data above do not include the 10% attrition factor typically used to plan the ACP program. Where requirements data conflicted, we used the maximum estimate.

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