
**EFFECT OF PEACE OPERATIONS ON AIR FORCE
COMBAT READINESS**

The amount of time, effort, and energy the Air Force devotes to peace operations has exploded from almost zero during the last few years of the Cold War to consume about 10 percent of Air Force flight hours (much more for active-duty fighter, electronic combat, tanker, and surveillance aircraft) and has placed unanticipated heavy demands on certain support personnel and equipment (especially in the medical, security police, and civil engineering career fields). If current peace-operations commitments ended tomorrow, the problems many have come to associate with MOOTW—high TDY rates, reduced combat readiness, lowered morale—would largely end as well.

The dramatic increase in peace-operations tempo in the early 1990s has affected the Air Force's ability to conduct MRC combat operations in both the short and long run. In the short run, peace operations provide little opportunity for fighter pilots to practice combat skills, such as dropping bombs and engaging in air-to-air combat. This decreases their proficiency and degrades their ability to accomplish MRC combat missions. Although fighter crews appear to be the most affected, crews for AWACS, SOF aircraft, and tactical airlift are also unable to practice some critical combat skills during typical peace operations.

Peace operations also increase the demand for certain equipment (e.g., transportable hospitals), which means that the equipment is often not available for rapid deployment to an MRC because it is either deployed or is undergoing extensive repair and reconstruction after a lengthy deployment. Decreased proficiency and the need to rebuild or replace worn or damaged equipment result in immediate

decreases in combat capability. However, the degradation can usually be recovered in a matter of a few weeks or months.

In the long run, peace operations can pose a different threat to Air Force combat readiness, because their open-endedness creates serious quality-of-life issues for certain Air Force personnel. As peace operations drag on for months or years, units with special skills or equipment, as well as those based nearest to the action, are repeatedly called on to participate. Regardless of the short-term effect of this participation on unit wartime mission skills, one thing is certain: The participants are away from home.

Being away from home is nothing new for Air Force personnel. However, long-term peace operations lead to situations in which the same units or parts of units are called on again and again, either because of budget constraints or small career-field size. As a result, some personnel, or even entire units, can spend more than half their time away from home station. Eventually, the separation could take a toll on family life, leading to lower retention rates and, in turn, to less-experienced and less-capable units.

In this chapter, we look at the burden peace operations place on Air Force combat readiness. We first discuss the amount of effort the Air Force is currently devoting to peace operations. We then analyze the short-term effect of peace operations on the combat skills of fighter, transport, and special-operations aircraft units, in the second section, and briefly discuss the potential long-term effects of extended TDYs on the USAF, in the third section. In the fourth section, we consider a new approach the Air Force could take to reduce the effect of peace operations on combat readiness, and, in the fifth section, we present two organizational options for improving combat readiness and reducing TDYs. In the final section, we draw conclusions.

POST-COLD WAR GROWTH IN PEACE OPERATIONS

During the Cold War, the Air Force was involved in few peace operations. With the end of the Cold War, some of the constraints on U.S. and international intervention in regional and ethnic conflict were removed. At the same time, the collapse of totalitarian regimes in the former communist bloc and the end of superpower sponsorship of

marginal African states enabled long-simmering ethnic, religious, and tribal conflicts in both these regions to boil to the surface. The combination of these factors with the activist foreign policies of the Bush and Clinton administrations led to U.S. involvement in peace operations in Bosnia and Somalia. Also, the end of the Persian Gulf War left the United States enforcing provisions of the cease-fire agreement in both northern and southern Iraq.

The Air Force suddenly found many of its general-purpose and special-operations aircraft heavily involved in peace operations. Between 1990 and 1995, Air Force fighters, tactical airlifters, special-operations, tanker, surveillance, and electronic combat aircraft experienced a profound increase in flying hours devoted to peace operations, as Figure 3.1 shows. The vast majority of these peace-operations flight hours resulted from five long-term and ongoing operations—Operations Southern Watch and Provide Comfort in Iraq and Operations Deny Flight, Deliberate Force, and Joint Endeavor in Bosnia—all designed to deter some undesirable air- or ground-based military activity. The result is the rapid increase in the number of fighter flight hours devoted to peace-operations missions.

USAF aircraft expanded their peace-operations participation from almost zero at the end of the Cold War to almost 170,000 flight hours

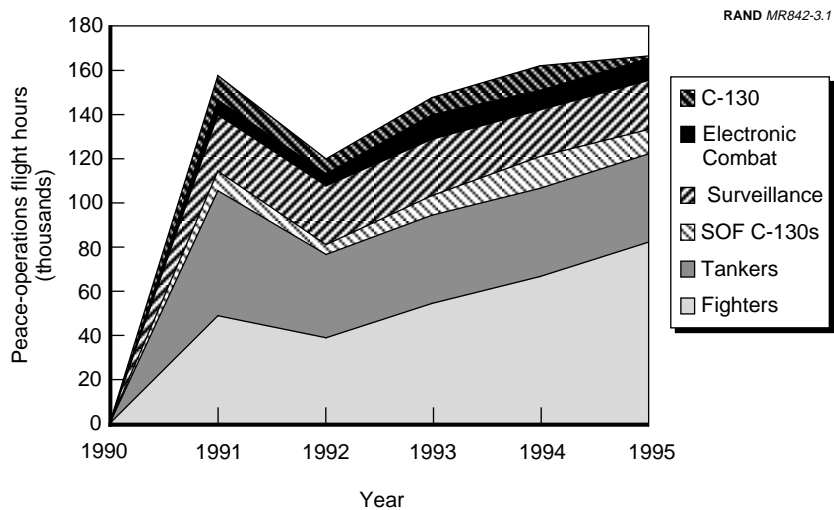


Figure 3.1—USAF Peace-Operations Flight Hours, 1988–1995

in 1995. Between 1991 and 1995, USAF aircraft flew over 800,000 hours in support of peace operations—almost all of them after 1990¹—which represents a huge commitment of personnel, equipment, fuel, spare parts, etc., to support peace operations. Since 1991, flight hours devoted to peace operations have remained remarkably stable: Except for a post-Desert Storm dip in FY 1992 to around 120,000 flight hours, the level of effort has remained in the range of 150,000–170,000 flight hours per year. The dip was the result of the drawdown of U.S. forces in the Gulf following Desert Storm. The no-fly zone over Bosnia did not go into effect until FY 1993.

Figure 3.2 presents peace-operations tempo as a proportion of sorties flown by active-duty squadrons.² Translated to more-concrete

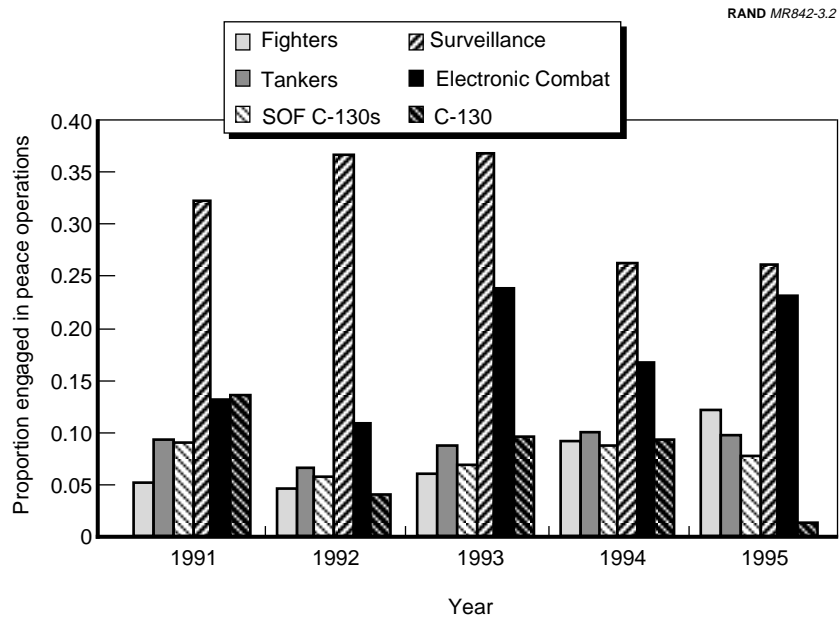


Figure 3.2—Peace-Operations Effort As a Proportion of Sorties Flown by Active-Duty USAF, 1988–1995

¹All flight-hour and sortie data in this chapter are derived from the USAF Reliability and Maintainability Information System (REMIS).

²As of the end of 1995, active-duty units had flown over 90 percent of all peace-operations sorties and flight hours.

terms, this is the equivalent of over six fighter squadrons; two tanker squadrons; one squadron each of special-operations C-130s and surveillance and electronic combat aircraft; and a fraction of a C-130 squadron. In other words, on any given day between 1991 and 1995 the Air Force had the equivalent of about 2 of its 14 active fighter wings engaged in peace operations in Iraq or Bosnia, supported by 2 of its 25 tanker squadrons and a large fraction of its surveillance and electronic combat assets.

The sheer volume of flying done in support of peace operations is only part of the story. We need to know which assets are most stressed. According to Figure 3.1, fighters and tankers flew more hours in support of peace operations in 1995 than any other types of aircraft—not surprising, considering that fighters currently patrol airspace for extended periods and therefore require significant tanker support. However, this does not mean that fighters and tankers are the most “stressed” assets.

To determine which weapon systems are the most stressed, we must determine which types of aircraft spend the largest portion of their annual flight hours supporting peace operations. To do so, we divided the total number of peace-operations flight hours in Figure 3.1 by the total number of aircraft of a particular type the Air Force had in a given year. The resulting values are shown in Table 3.1 for selected aircraft.

Table 3.1 tells a different story from Figure 3.1. The most obvious difference is that fighters are much less stressed than Figure 3.1 appears to indicate. Although they fly more peace-operations flight hours per aircraft than any other aircraft types, fighters spend less time supporting peace operations than many specialized aircraft.³ During 1995, the most heavily burdened aircraft types were E-3s, KC-10s, EF-111s, AC-130s, HC-130s, and EC-130s, spending an average of between 88 and 280 hours per aircraft conducting peace operations, versus only 21 hours for F-16s.

³The average number of hours flown by F-16s is shown in the table, for comparison purposes. Most other fighters (F-15, A-10, etc.) have averaged between 17 and 34 peace-operations hours per aircraft per year since 1990. The only exception is F-15Es, which have averaged almost 60 peace-operations hours per aircraft per year.

Table 3.1
USAF Peace-Operations Flight Hours per Aircraft Type, 1991–1995

Year	E-3	KC-10	AC-130	EC-130	HC-130	EF-111	F-16
1991	484.83	308.06	63.94	49.21	73.26	20.85	15.32
1992	485.34	53.79	7.68	0.35	72.88	108.45	10.64
1993	479.26	181.27	119.88	20.96	84.97	92.53	12.51
1994	326.49	114.92	162.58	64.48	110.29	83.23	16.56
1995	280.33	118.88	94.20	88.84	97.77	142.74	21.19
<i>1991–1995 (average)</i>	<i>411.25</i>	<i>155.38</i>	<i>89.66</i>	<i>44.77</i>	<i>87.83</i>	<i>89.56</i>	<i>15.24</i>

If peace operations are viewed as a percentage of total flight hours each of the most heavily committed aircraft types flew in 1995 (see Figure 3.3), what stands out most is that the RC-135 fleet devoted an incredible 65 percent of its 1995 flight time to conducting operational reconnaissance. While seemingly excessive, this percentage is similar to the amount of time RC-135s spent on operational reconnaissance tasks watching Soviet and Warsaw Pact forces during the Cold War. Increased peace-operations tempo has changed *where* RC-135s conduct their missions, but not *how many* they undertake. Other aircraft, such as EF-111s and E-3s, are far more heavily committed to operational missions now than during the Cold War, devoting close to 60 and 40 percent of their 1995 flight hours to peace operations, respectively.

Aside from being in demand for peace operations, the one thing these aircraft types share (with the exception of KC-135s) is that they belong to “small fleets.” In 1995, the Air Force had 178 F-15Es and less than 60 of each of the other aircraft types depicted in Figure 3.3. For comparison, the Air Force had 1,548 F-16s, 568 F-15A/Cs, and 568 C-130s in 1995.⁴

The aircraft types in Figure 3.3 represent virtually all of the Air Force’s specialized electronic countermeasures and surveillance aircraft. In addition, they account for all of the gunships and approxi-

⁴USAF, *United States Air Force Statistical Digest FY 1993 and 1994*, Washington, D.C.: Assistant Secretary of the Air Force (Financial Management and Comptroller of the Air Force), and *Air Force Almanac*, May 1996, pp. E-104–E-107.

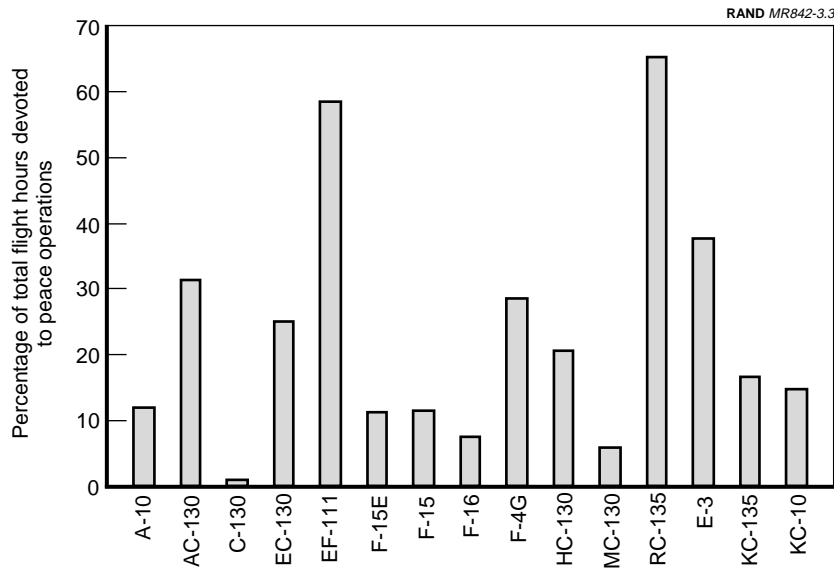


Figure 3.3—Percentage of Flight Hours Devoted to Peace Operations, 1995

mately two-thirds of its long-range night/all-weather interdiction aircraft, and all of its tankers. All these mission areas are of critical importance to any air campaign, whether part of a MOOTW or an MRC.

SHORT-TERM EFFECTS OF PEACE OPERATIONS ON USAF FLYING UNITS

Some of the types of tasks aircrew accomplish on peace-operations missions may be very similar to both the tasks they perform on peacetime training missions and the tasks they would be expected to perform during an MRC. For example, tanker crews perform essentially the same tasks on a peace-operations mission (take off, climb/cruise, rendezvous, orbit, transfer fuel, return to base, land) that they would perform on a peacetime training mission or during an MRC. Much the same can be said about strategic airlifters such as C-5s or C-17s supporting peace operations: The crews load, unload

and reconfigure cargo compartments just as they would in an MRC or peacetime training mission. In short, for some aircrews there is little or no difference in the types of tasks performed and, consequently, in the training value of, peace operations and peacetime training sorties. To determine the short-term effects of peace operations on USAF flying units, therefore, it is important to examine how peace-operations sorties differ from peacetime training sorties for different types of aircraft.

In surveillance and airlift aircraft, aircrews do roughly the same tasks in both peace operations and combat. In contrast, although E-3, E-8, AC-130, HC-130, MC-130, MH-60, and MH-53 aircraft all have some overlap between peace operations and combat missions, most miss some important dimension of combat training in typical peace operations. For example, E-3 crews use skills monitoring friendly (and sometimes hostile) aircraft, but less often and generally against a minimal air threat. Peace operations afford AC-130s crews good opportunities to polish surveillance skills, but only rarely are they called upon to fire their weapons. HC-130 and MC-130 crews conduct refueling and airdrop missions, respectively, but peace operations do not allow them to practice critical low-level flight skills. Although the effect of peace operations on aircrew combat skills varies, all these units are experiencing high to very high TDY rates. For example, HC-130 aircrew averaged 194 days TDY in 1994, U-2s averaged 148 days, and RC-135s averaged 143. These frequent and long TDYs limit aircrew availability to participate in major exercises and could, therefore, degrade combat readiness even for units (e.g., U-2s) who are able to practice all combat skills during peace operations.

Over 50 percent of the sorties and hours flown in support of peace operations are flown by fighter or attack aircraft. For these crews, there is a tremendous difference between the types of skills they practice on peace-operations missions and the combat skills (low-level navigation and weapons delivery, air-to-air combat, missile breaks, etc.) they practice on almost all peacetime training sorties.

Figure 3.4 rank-orders the difficulty of the tasks required to successfully accomplish various combat missions. The tasks listed are not all-inclusive, and some experienced practitioners of the tactical aircrew's art would probably rank some of the tasks in a slightly differ-

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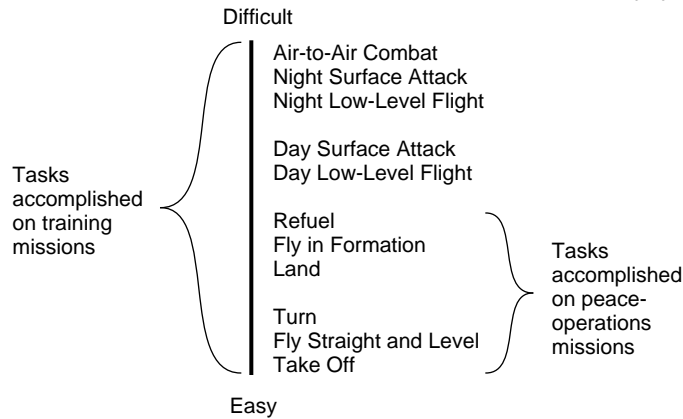


Figure 3.4—Opportunities to Train for Fighting Skills During Peace Operations

ent order. However, the list depicts the easiest, safest, and most-routine tasks near the bottom and the most-difficult, -dangerous, and -demanding tasks toward the top. What is most striking is that virtually all the combat-related tasks are toward the top of the list, and none of them is part of the typical fighter peace-operations sortie.

In sharp contrast to typical peacetime training sorties, in which crews practice low-level navigation, weapons delivery, and/or air-to-air combat skills, peace-operations missions usually offer the opportunity to practice only the most routine tasks. Calling “routine” such skills as formation flying and landing does not mean they are unimportant, or that there is not a certain level of danger or difficulty associated with them. Crews must take off, land, and often refuel and fly in formation to successfully accomplish many combat missions. They must, however, also acquire targets, employ electronic countermeasures to reach those targets and return home, outmaneuver missiles, engage in air-to-air combat, and aim and guide their weapons to impact while maintaining their situational awareness and avoiding collisions with other aircraft or the ground. Most of these skills require long practice to acquire and constant repetition

to maintain. Peace-operations sorties provide fighter crews with virtually no opportunity to maintain their proficiency in many of their most important and perishable combat skills—primarily because of the nature of peace-operations missions.

As Figure 3.4 illustrates, peace-operations sorties for fighter crews consist almost entirely of relatively simple and routine tasks. Crews take off, fly in formation to an orbit point, loiter for a specified time, perhaps rendezvous with a tanker, and then return to base. They may get to practice some combat skills, such as coordinating air-to-air radar searches, but engaging in the same routine activity day after day with no adversarial reaction quickly becomes so mind-numbing that crews resort to asking each other movie-trivia questions to pass the time while on-station.⁵

The high number of training waivers given in 1994 is one indication that a training problem existed for U.S. Air Force in Europe (USAFE) fighter crews. USAF Series-11 regulations set standards for the number and type of training events an aircrew assigned to a specific aircraft must perform to be considered combat-ready. When aircrew have other commitments (such as extended TDYs) that make them unable to accomplish these training events, commanders have the option of waiving the requirement. Thus, we would expect the number of Series-11 training waivers to rise if aircrews were deployed on frequent and long-contingency operations—as USAFE crews were in 1994.

The limited data we have support this hypothesis. In a 1995 report on the effect of peace operations on combat capabilities for all the services, the General Accounting Office presented data on the total number of training waivers and the percentage of aircrews receiving waivers for USAFE A-10s, F-15Cs, and F-15Es.⁶ We divided the number of waivers for a given aircraft type by the number of aircrews assigned to it to better understand the effect these waivers had on

⁵Interviews with F-15E crewmembers who took part in numerous sorties in support of Operation Provide Comfort and Operation Deny Flight indicate this was a widespread, and popular, way to pass the time while on-station over Northern Iraq or Bosnia.

⁶See U.S. General Accounting Office, *Peace Operations: Heavy Use of Key Capabilities May Affect Response to Regional Conflicts*, Washington, D.C., GAO/NSIAD-95-51, March 1995b, p. 33.

training.⁷ Table 3.2 presents the results. Of particular interest to us is the variability in average waivers per aircrew, which range from under one waiver per aircrew for F-15Cs to almost nine waivers for each F-15E crew. These figures make it clear that many USAFE fighter crews, and especially F-15E crews, were probably less proficient in some combat tasks than USAF training standards demand.

We wanted to compare training waivers by command and aircraft type over the past ten years but were unable to get the necessary data. Even if historical data had been available, the 1995 and 1996 data are likely to understate the problem, because the training-cycle length changed from 6 months to 12 months. Previously, aircrews had to accomplish a set number of training events every six months. The new 12-month cycle can hide training problems, because it masks when the events were accomplished. For example, USAFE F-15Es might have accomplished all their air-to-air training events in the first two months of 1995, then deployed on a series of peace operations that prevented them from doing any air-to-air training for months. Consequently, although the number of waivers they received for this event may have been less in 1995, the aircrew proficiency in this particular task might not have improved at all. Finally, to determine the relative importance of waived events, it would be even more helpful to look at the breakdown of waiver types, in addition to knowing the number of waivers granted.

In addition to losing proficiency in important combat skills from lack of practice, these crews may actually be engaged in “negative train-

Table 3.2
USAFE Fighter Crew Series-11 Training Waivers, January
Through June 1994

Aircraft	USAFE Aircrew	Total Series-11 Waivers	Average Waivers per Aircrew	Percentage of Crews Receiving Waivers
A/OA-10	33	55	1.6667	55
F-15C	50	38	0.76	66
F-15E	86	737	8.5698	100

⁷These data were provided to us by the Air Force Personnel Center.

ing” while on peace-operations missions. Although no hard evidence exists that this is the case, it has been suggested that the routine and seemingly unending nature of peace operations tends to desensitize crews to the potential dangers of their missions and results in increased complacency and decreased situational awareness.

Even discounting the possibility of negative training, it is clear that fighter crews who spend large fractions of their flight time engaged in peace operations are probably less proficient at many combat tasks than those who do not. But how much less proficient are they? Is there a way to quantify how much their combat skills are degraded? A 1989 study by Hammon and Horowitz of the Institute for Defense Analyses (IDA) investigated the relationship between flight hours (both career total and “recent practice”) and performance of some air-combat skills. It found a statistically significant relationship between total flight hours and both bombing accuracy and simulated air-to-air combat victories. Statistical analysis of over 1,200 Navy and Marine Corps fighter sorties indicated that a 10 percent reduction in total flight time led to a 2 percent increase in bomb miss distance for ground-attack crews and a 5 percent reduction in air-to-air combat victories for fighter crews.⁸

This study suggests that we can expect some degradation in the combat-skill proficiency of fighter crews engaged in peace operations. However, the study was not designed to address certain serious aspects of the current peace-operations situation. First, for modern precision-guided munitions, bomb miss distance is a clumsy and somewhat outdated metric. In the post-Cold War world, hitting the target with a weapon that will cause minimal collateral damage is of great importance. Thus, the true metrics are more binary: Either hit the target or don’t; either kill civilians or don’t. Other important combat tasks, such as outmaneuvering missiles and avoiding fratricide, are likely to deteriorate quickly, are difficult to quantify, and have never really been studied systematically. Finally, the IDA study was designed to assess the effect of relatively small changes (on the order of 5 to 10 percent) in monthly flight-training hours on aircrew

⁸See Colin P. Hammon and Stanley A Horowitz, “Flying Hours and Aircrew Performance,” Working Paper, Institute for Defense Analyses, Washington D.C., June 1989.

performance—not the effect of reducing training in certain skill areas to zero, as often results from our current peace-operations optempo.

To assess the true short-term effect of peace operations on aircrew combat skills, we need better measures of both inputs and outcomes than those used in the Hammon and Horowitz study. For that study, flight hours were a good proxy for actual training accomplished, given that, during the late 1980s, virtually all the time U.S. military aircrews spent in the air was high-quality training time. For the reasons outlined above, this may no longer be the case. To determine the true relationships between training, experience, and task proficiency, we would like to measure the number and type of training events accomplished over a given period by USAF aircrews, and then measure proficiency at the important combat tasks mentioned above. To our knowledge, no study of this type has been undertaken in recent years. As a result, we elected to adopt a less experimentally rigorous approach that makes the most of available data on USAF aircrew flight time and allows us to draw direct comparisons between the amount of high-quality training time USAF aircrew currently log and the amount they accomplished in the late 1980s.

We used flight-hour data from REMIS and information from the Air Force Personnel Center (AFPC) on the average number of crews assigned to a given command to determine the number and type of flight hours that crews in different commands and components logged from 1988 through 1995. We then set a “Cold War Standard” number of flight hours for each command or component as the average number of operational-training flight hours flown in a specific command during 1988 and 1989. We chose to normalize by these years because we know USAF crews performed exceptionally well in Operation Desert Storm, and this performance was due in part to combat skills honed during the final years of the Cold War.⁹ We excluded 1990 data when establishing our standard, because, for the aircraft types of greatest interest to us, large-scale 15–20-hour deployment flights to Southwest Asia and extensive combat support time logged during the opening months of Operation Desert Shield distort the amount of operational training accomplished during

⁹An additional, but probably less significant, factor contributing to the impressive performance of Air Force combat crews during the Gulf War was the extensive in-theater preparatory training some crews received during Operation Desert Shield.

1990. We chose to normalize by command or component in order to control for the variation in responsibilities across commands, and therefore increase the comparability of our results.¹⁰

For the F-16 fleet, we found that, in 1995, F-16 crews logged about the same number of operational training hours per Rated Position Indicator 1 (RPI-1) pilot as during the final two years of the Cold War. RPI-1 pilots are essentially those aircrew assigned directly to combat-ready squadrons. Although other rated personnel—such as Rated Wing Staff (RPI-6) officers, and students and instructors in basic aircrew-upgrade courses—actually flew many of the hours depicted in Figure 3.5, we chose to depict flight hours on a per-RPI-1 basis for three reasons: (1) They make up the bulk of combat-ready squadrons' rated personnel, (2) they do most of the operational training and peace-operations flying, and (3) the ratio of RPI-1 crews to the total aircraft inventory was stable across the period we are interested in. This means that our measure gives an accurate picture of the amount of operational training time that crews assigned to the same weapon system in different commands accomplished relative to the last years of the Cold War.

In addition to showing that, on average, F-16 crews flew the same number of operational training hours in 1995 as in the late 1980s, Figure 3.5 shows that—because it devoted an additional 10–15 percent of its time to accomplishing a mission that did not exist during the late 1980s—the F-16 fleet as a whole had to work harder to maintain this level of high-quality-training flight time: In other words, to maintain the Cold War training standard, over the past several years F-16 crews have had to work 10–15 percent harder.¹¹

¹⁰For example, the number of aircrew assigned to a given Air Combat Command (ACC) weapon system is large relative to the number of operational training hours flown, because ACC (and the Tactical Air Command [TAC] before it) were responsible, until 1993, for training all new fighter crews. For our purposes, instructors count as aircrew but log relatively few operational training flight hours. For consistency, we added the crews and hours flown by Air Education and Training Command (AETC) personnel for such aircraft as F-16s (for which the initial qualification training units changed commands after 1993) to the ACC totals.

¹¹To measure peace operations flown, look at the difference between “operational training” and “ops training plus peace ops.” The wider the gap between the latter and the former, the more training is being degraded.

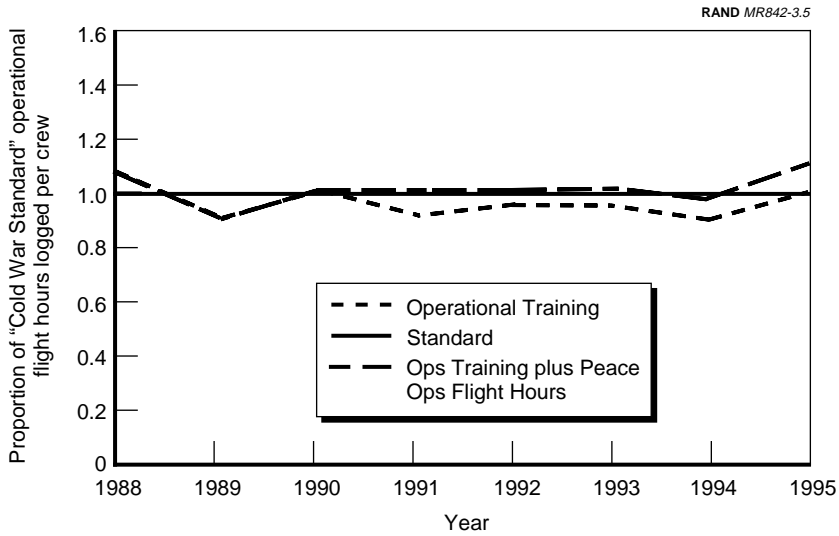


Figure 3.5—Flight Hours for Operational Training and Peace Operations Relative to Those for the Cold War Standard, All F-16s: 1988–1995

However, the peace-operations burden was not evenly distributed across the entire fleet, as Figure 3.6 shows for the flight hours per crew for F-16 units assigned to USAFE. Between 1991 and 1995, Europe-based F-16 pilots spent about 30 percent more time in the air, but accomplished about 20 percent less high-quality training than their counterparts did at the end of the Cold War.

Another important dimension of this problem is the unequal burden that these operations placed on some commands, as Figures 3.6 through 3.9 illustrate. Through the end of FY 1995, the burden was not shared equally across either the active and Reserve Components or across active-duty commands. Figure 3.7 shows that Air Combat Command F-16 crews spent a far smaller proportion of their time flying peace-operations missions than did their counterparts in Europe. What is even more striking is that the F-16s assigned to Pacific Air Forces flew virtually no peace operations sorties at all

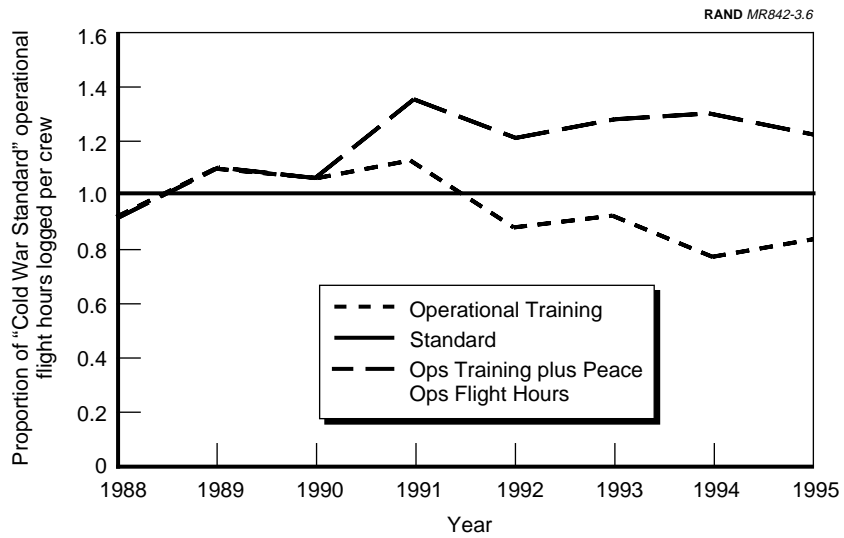


Figure 3.6—Flight Hours for Operational Training and Peace Operations Relative to Those for the Cold War Standard, USAF F-16 Crew: 1988–1995

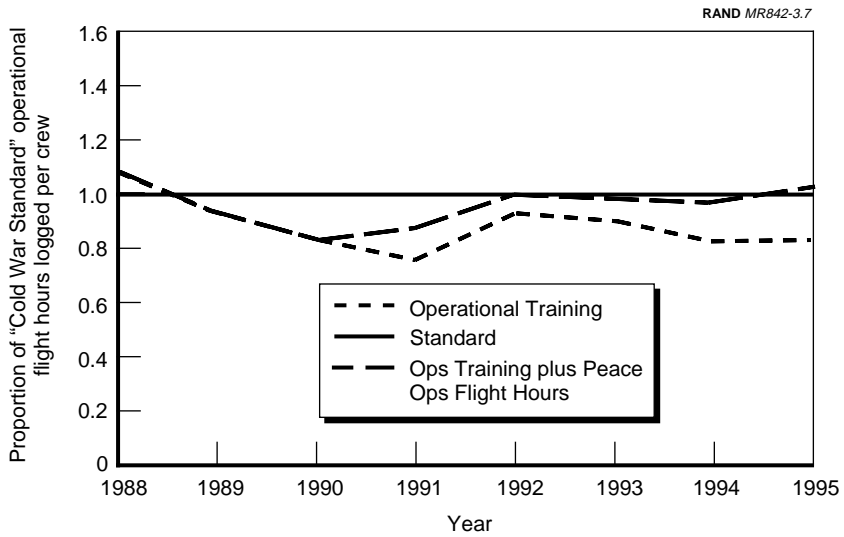


Figure 3.7—Flight Hours for Operational Training and Peace Operations Relative to Those for the Cold War Standard, ACC F-16 Crew: 1988–1995

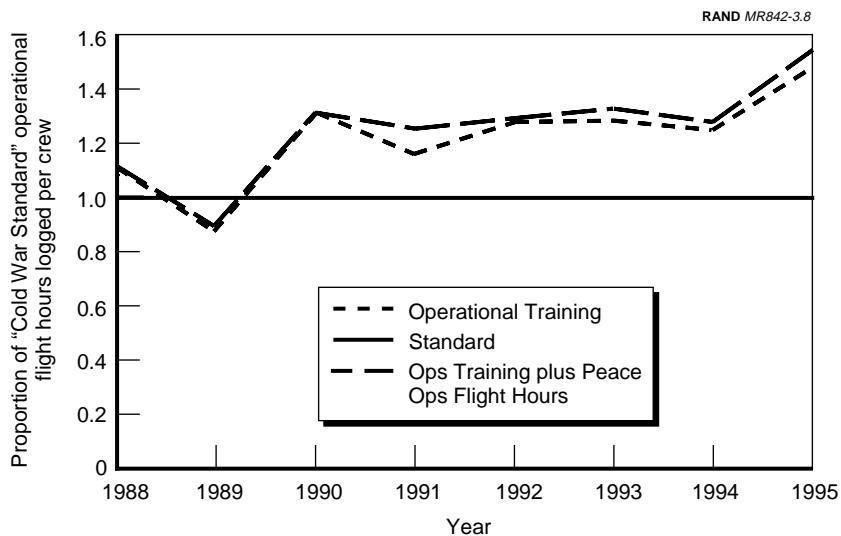
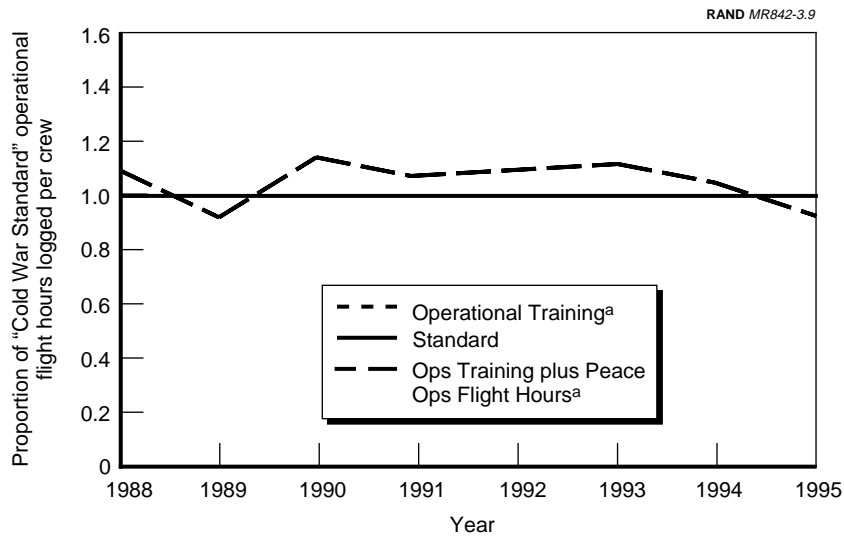


Figure 3.8—Flight Hours for Operational Training and Peace Operations Relative to Those for the Cold War Standard, ANG/AFRES F-16 Crew: 1988–1995

through the end of FY 1995.¹² F-16s assigned to the Air National Guard (ANG) and Air Force Reserve (AFRES) flew more hours in peace operations (Figure 3.8) than did Pacific Air Force (PACAF) pilots (Figure 3.9) through the end of FY 1995, but still far fewer than USAFE F-16 pilots. In addition, they flew far more operational training hours per crew than in the final stages of the Cold War. In fact, the increase in Reserve Component flight hours per crew is the only reason the F-16 fleet as a whole is maintaining the Cold War standard, since F-16 pilots in all other commands flew the same or fewer hours in 1995 than during 1988–1989.

¹²The Air Force has recently begun to spread the peace-operations burden more evenly across all force elements. In a letter dated November 26, 1996, Col Wayne K. Holum, Chief, Operational Requirements Division, HQ PACAF/DOQ, informed us that, since September 1995, PACAF has deployed 12 F-15Es, 12 F-16Cs, and 18 F-15Cs for approximately three months to Operations Deny Flight and Southern Watch. In the future, PACAF plans to have one squadron from 11th or 5th Air Force continuously deployed to either Deny Flight, Southern Watch, or Provide Comfort.



^aCurves lie on top of each other.

Figure 3.9—Flight Hours for Operational Training and Peace Operations Relative to Those for the Cold War Standard, PACAF F-16 Crew: 1988–1995

In fact, USAFE F-16s have devoted a far larger share of their flying time to support peace operations over the past several years than have F-16s in any other active-duty command or the Reserve Components. This is not an isolated trend. The same holds for A-10s, F-15A/Cs, and F-15Es. As Figures 3.6 through 3.9 and the charts in Appendix C show, crews assigned to USAFE have consistently worked harder to maintain operational-training levels than have their counterparts in Air Combat Command and Pacific Air Forces.

Several operational commanders have recognized the destructive effect that peace operations have on the combat skills of their crews, as Lt Gen Brett Dula, Air Combat Command Vice Commander, made clear in early April 1996, when he approved a message to all ACC flying units concerning the effect of peace operations on combat readiness. The cover sheet of his message read, in part:

It is generally agreed that aircrews are not as proficient at all required tasks when returning from Contingency Operations as they were when first deployed. Units may be fully capable in the specific mission for which they were deployed. However, most are not fully prepared for all missions required under their DOC [Design Operational Capability] taskings. ACC squadron commanders are fully justified and normally should report less than C-1 [fully combat ready] when they return from contingency operations.¹³

To restore lost currencies and proficiency as quickly and safely as possible, the 1st Fighter Wing has instituted a mandatory refresher program for all pilots returning from peace-operations deployments. ACC is considering adopting similar programs for all its units. These programs would consist of 17 to 19 sorties, depending on aircraft type, and would require 8 to 12 weeks to complete at normal flying rates.¹⁴

If instituted Air Force-wide, something like the 1st Fighter Wing program might return most of the lost aircrew combat-skill proficiency. However, it does not change the fact that units deployed to peace operations are not fully capable of performing their assigned MRC missions for 2 to 3 months *after* they return to home station. In addition, such remedial training measures obviously do nothing to address the morale and quality-of-life issues associated with extensive TDY necessitated by peace operations. This length of recovery time for aircrew combat skills also makes the readiness situation for USAF fighter crews even worse than it would appear from the sheer amount of time they spend flying peace-operations sorties. For these crews, most peace-operations deployments consist of 6-9-week stints away from home station, flying sorties over Bosnia or Northern Iraq, followed by a 6-9-week stretch at home. As a result, many of

¹³Memorandum from Lt Gen Brett Dula, ACC/CV, to Maj Jeffrey Bell, ACC/DOTO, April 2, 1996. This guidance has been promulgated, but as of late September 1996 no squadron commander has reported less than C-1. We have no way of knowing if this is because recent deployments have offered unusually good training opportunities, or if squadron commanders are still somewhat reluctant to report less than C-1 status. This observation is not meant to disparage the integrity of either squadron commanders or any other USAF leaders. Rather, it is simply intended to point out that members of large organizations might be risk-averse when new policies require them to take actions that would have ended their careers under previously established, long-standing policies.

¹⁴Conversation with Maj Jeffrey Bell, ACC/DOTO, April 9, 1996.

these crews may never fully recover proficiency lost in the last peace-operations deployment before they are called on to begin the next.

The IDA study results discussed earlier do not apply to situations such as this. Instead of decreasing the number of bombing range passes or air-to-air engagements by 5 or 10 percent for several weeks prior to measurement, as that model assumes, aircrew engaged in peace operations often go weeks or even months without engaging in these activities at all. The amount of time USAFE F-16 crews have devoted to peace operations over the past several years is equivalent to approximately half of their Cold War training standard, which means that their high-quality training is broken into chunks separated by long periods of peace-operations deployments. As a result, their proficiency probably suffers more than the model would predict.

The data presented in Appendix C can be used to present similar arguments for AC-130, HC-130, EF-111, F-4G, Europe-based F-15, A-10, F-15E, and other aircrew who routinely logged 20, 30, or 40 percent fewer operational-training flight hours per crew over the past several years than during the Cold War. As discussed earlier in this chapter, E-3 and C-130 crews also probably suffer some degree of combat-skill degradation while participating in peace operations. For example, in peace operations, E-3 crews do not work with the large number of aircraft that typify MRC air operations. However, since they do practice some of their combat skills (e.g., E-3s vectoring fighters or C-130s conducting assault landings), their proficiency is probably degraded less than that of fighter crews.

One factor is especially important to consider when evaluating decreased combat proficiency for electronic combat and special-operations aircraft: In contrast to fighters, similar assets cannot be called on from another command if a crisis arises and highly proficient crews are needed on short notice. These small fleets of specialized aircraft represent the *entire* Air Force capability in several critical mission areas.¹⁵

¹⁵This discussion focuses on Air Force aircrews because there is sufficient hard data to begin to draw some conclusions about the effect of peace operations on aircrew combat-skill proficiency. During our research, we consistently heard compelling arguments that peace operations, and the associated high TDY rates, compromise the ability of maintenance personnel, civil engineers, security police, and medical units to

It is widely known and understood that both the USAF and the U.S. military are much smaller than they were at the end of the Cold War, or during the 1991 Gulf War. What is less widely appreciated is that the extensive commitment of USAF personnel to peace operations in the years since the Gulf War ended has come largely at the expense of high-quality training time. Consequently, relative to the forces that fought and won the Gulf War, today's Air Force is both smaller and, on average, less proficient at basic combat tasks. The extent of the qualitative difference and its implications are difficult to judge but are potentially serious. This qualitative degradation (and ways to minimize it) should be a factor in future assessments of USAF force structure.

POSSIBLE LONG-TERM EFFECTS OF EXTENDED TDYs ON THE USAF

During our research for this study, we traveled extensively to get inputs from operational headquarters, unit commanders, and other Air Force personnel actively engaged in MOOTW in general and peace operations in particular. The most common theme we heard—that high TDY rates were causing morale to suffer—was so consistent we are inclined to give credence to claims that excessive TDY rates may have already reduced retention rates and will almost certainly continue to reduce them in the future.

We know of no methodologically sound study that demonstrates a link between TDY rates and indicators of poor morale, such as increased voluntary separation, divorce rates, suicide rates, etc. This is not surprising, because the Air Force had no reliable way to track the number of days an individual spent TDY until about June 1995. The new TDY tracking system provides data that will allow future analysts to test for the existence of such links. This tracking could take some time. An individual with a 3-year commitment cannot simply up and quit the Air Force as soon as the TDY rate exceeds his or her personal threshold. There could be considerable lag between the decision to separate and the actual separation. Thus, it may take several years' worth of data before a clear relationship between TDY rates and re-

maintain the skills and equipment they need to successfully accomplish their primary MRC missions. We believe this is true. However, there is insufficient hard data on these career fields to conduct an analysis similar to that presented for aircrew.

tention emerges. However, just because we have no scientific proof that a link exists does not mean that the Air Force can afford to ignore the statements of numerous unit commanders and hard-pressed line personnel who assert that there is a connection.

If we can assume that the aircrew and support personnel assigned to USAFE fighter units, electronic combat and surveillance aircraft, and special-operations C-130s aspire to some semblance of a normal family life, then a requirement that they spend over 120 days away from home each year provides a powerful incentive for seeking other career opportunities. The early years of the next century could see a dramatic decrease in pilot experience levels in all fighter and bomber aircraft. The airlines are expected to continue to hire large numbers of pilots, tempting experienced USAF pilots to leave the service when their commitments expire. The effect of this trend will be aggravated by the very small number of pilots produced during the early 1990s. The burdens peace operations impose on many of these same pilots provide yet another reason for them to leave. In short, already-small cohorts of experienced pilots will face attractive offers from airlines that will try to pull them out the door. At the same time, the undesirable side effects of high peace-operations tempo (reduced high-quality training, increased TDY, etc.) will be *pushing* them out the door.¹⁶

There is every reason to have similar concerns about the quantity and quality of personnel the Air Force will be able to retain in the aircraft maintenance, civil engineering, and security police career fields. These personnel are at least as likely to be “pushed out” by high optempo as are combat aircrews.

A NEW APPROACH TO PEACE OPERATIONS

The triple requirement that the USAF force structure be reduced, that it maintain its current support for peace operations, and that it maintain high combat readiness for two MRCs is, in our judgment, impossible to achieve. Either support to peace operations must be reduced or DoD must accept a decline in USAF combat readiness. Reducing combat readiness is unacceptable in the current interna-

¹⁶Based on a letter from Lt Col Chris Tope, Chief of Fighter/Bomber Assignments, HQAFPC, January 25, 1996.

tional security environment. Thus, the USAF needs to look at ways to reduce the optempo associated with peace operations. There is, however, a way of “reducing” the USAF role in peace operations that may not materially affect the United States’ ability to achieve its national objectives in such contingencies. However, it requires that U.S. defense planners think very differently about peace operations.

This approach involves conceiving of at least some peace operations in a completely different way. Instead of viewing them as “mini-MRCs” requiring 24-hour-a-day operations to find, track, and engage enemy units, the Air Force could approach them in much the same way as police forces think about deterring crime.

Generally, what the United States is trying to do in peace operations is to deter aggressive air or ground activity by one or more parties, not to prevent 100 percent of the flight activity or to shoot down 100 percent of enemy aircraft. We recognize that, to establish the credibility of the peacekeeping force, the initial stage of a peace operation might call for combat-style optempo. After an initial period of round-the-clock operations, however, the Air Component Commander could adopt a “cop-on-the-beat” approach to peace operations.

Under the cop-on-the-beat approach, a small package of fighter aircraft would patrol at random times¹⁷ and places within the area of interest. Surveillance, reconnaissance, tanker, and other support aircraft would be kept to the absolute minimum necessary for effective operations; heavy use would be made of unmanned assets. Additional aircraft could be on call to support patrols if they ran into trouble, and to punish aggressors for any unauthorized ground or air activity occurring while no patrols were airborne. If unauthorized activities increased significantly, reinforcing units could be deployed to the theater within days or, in some cases, hours.

This operational concept requires far fewer deployed forces, sorties, and flight hours than current U.S. peace operations. Therefore, it

¹⁷The F-22 could play an important role in such a concept. Its stealth would allow it to randomly patrol a no-fly zone without the warring parties knowing where it is. Violators would, therefore, find it much more difficult to play cat-and-mouse with an F-22-enforced no-fly zone. The authors are indebted to RAND colleague Eiichi Kamiya for this observation and for sharing his analysis of F-22 no-fly-zone operations.

would be cheaper, would compromise the combat skills of fewer aircrew (increasing overall combat readiness), and would require fewer support units and, hence, significantly less TDY by hard-pressed units. We recognize that this concept may not be feasible in every situation; the desires of the theater commander, the adversary's capabilities, and U.S. foreign policy goals could all require a larger force in a particular peace operation. Nevertheless, this concept has much to recommend it, because it relies on air power's greatest strength—the ability to rapidly assemble combat power at unpredictable times and places—to help reduce the current burden of peace operations on Air Force units.

ORGANIZATIONAL OPTIONS TO IMPROVE COMBAT READINESS AND REDUCE TDYs

Besides the cop-on-the-beat CONOP just discussed, we considered two other options available to the Air Force for reducing the negative effect of peace operations on USAF combat readiness and morale: “spreading the wealth” and employing dedicated wings. Neither of these options will be as effective at reducing these effects as adopting the cop-on-the-beat CONOP discussed above. We are including these options for the sake of completeness and to share our analysis with interested readers.

Spreading the Wealth

One way to ease the burden is to have those commands and components that currently participate relatively little in peace operations take up more of the load. Under this scheme, PACAF and the Reserve Components would take over some of the deployments currently manned by crews from USAFE or ACC. This option has the advantage of calling on any given unit less often to participate in peace operations, so it would spend less time away from home station and would fully recover from the negative effects peace operations have on combat readiness.

However, this option is not really possible for such platforms as MC-130s, EF-111s, F-4Gs, E-3s, and RC-135s, because there are so few of these aircraft that they effectively make up a single force. No other command can be called on to take up the burden. Even for

more-numerous fighter aircraft, the spread-the-wealth option may be problematic. USAFE units are currently the most heavily burdened because they are closest to the peace-operations locations and, therefore, they are less expensive to deploy than units from the continental United States (CONUS) or PACAF. As noted earlier in this chapter, PACAF units are already beginning to play a larger role in peace operations than they did through FY 1995. They are also heavily committed to counter any aggressive moves by North Korea. And given the current high level of tension between the two Koreas and the continuing economic difficulties in the North, it is probably not advisable to significantly increase PACAF's role in peace operations beyond the commitments it took on in 1996.

Looking to the Reserve Component for additional support may not be feasible either. As of September 30, 1995, 12 Air National Guard F-15 and F-16 squadrons were dedicated to the continental air-defense mission. These squadrons are not available for peace-operations rotations. In addition, many civilian employers are willing to support Guard and Reserve deployments for major crises but are not willing to sacrifice revenue and hold jobs for employees who regularly deploy in support of peace operations year after year.¹⁸ In short, given the current force structure, budget constraints, world political situation, and active/Reserve mix, the Air Force is probably doing about as much as it can to share the peace-operations load.

The data presented in this chapter suggest that, if peace operations continue to play a major role in driving USAF operations in the post-Cold War world, the active/Reserve mix might need to shift in favor of *active* forces, which is contrary to current conventional wisdom. Figure 3.10 shows the relative peace-operations burden of Reserve and active-duty F-16 crews. Clearly, even though about half of F-16 crews are now in the Reserve Components, they accomplish only about 10 percent of the F-16 peace-operations flight hours.

¹⁸William Matthews, "Bosses Have Their Limits: Humanitarian Missions Receive Lukewarm Backing," *Air Force Times*, May 27, 1996.

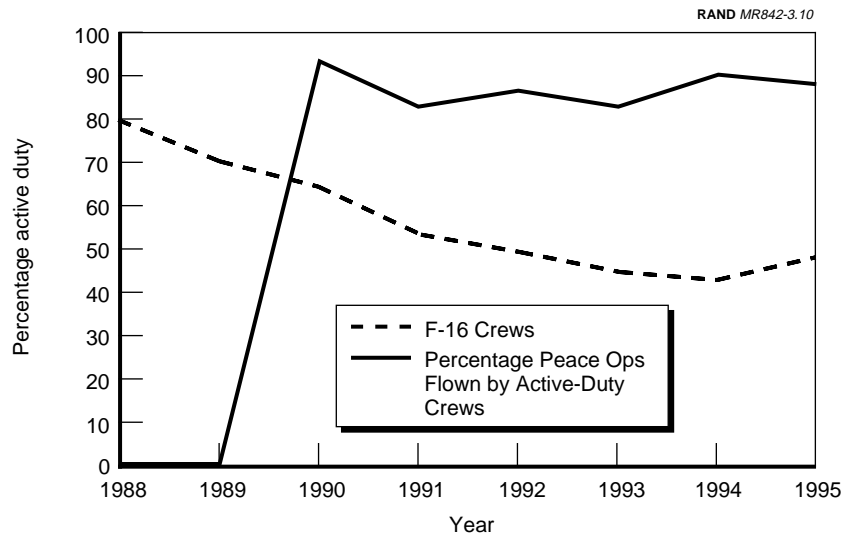


Figure 3.10—Percentage of F-16 Crews on Active Duty in Relation to F-16 Peace-Operations Flight Hours Logged by Active-Duty Crews, 1988–1995

In other words, for meeting peace-operations commitments, 1 active-duty fighter squadron is worth 9 Reserve squadrons. Peace operations are not the only thing to consider in formulating the active/Reserve force mix, and we do not suggest that it be altered 9 to 1 in favor of the active force. However, since peace operations were not explicitly considered when formulating the current force mix, and there seems to be a large difference in the relative utility of active and Reserve forces in peace operations, it is advisable to explicitly consider this feature when making future active/Reserve mix trades.

Dedicated Wings

Another possible solution to the peace-operations challenge to fighter crew readiness is to dedicate two fighter wings solely to peace operations. This is about the level of effort currently devoted to peace operations (see discussion of data presented in Figure 3.2). Since the wings' only mission would be peace operations, the Air Force would gain a test-bed and advocacy group for peace-operations tactics, equipment, doctrine, and organization. Crew ra-

tios could be set to sustain high operation tempos. The wings would have extraordinary TDY rates, but morale deterioration could be mitigated if they could seek volunteers who did not mind the deployments. Having these dedicated forces would allow the rest of the Air Force's fighter forces to concentrate on maintaining high proficiency for MRCs.

This solution suffers from two potential drawbacks. First, for reasons outlined above, it is not clear what the combat-skill proficiency of the dedicated wings would be. If these two wings were expected to sustain today's optempo, they would have little time for training and would likely face serious training shortfalls that could undermine both their capability to conduct sustained combat operations and even many peace operations. If the wings' combat readiness is, or is perceived to be, lower than that of other wings, the dedicated wings could get a reputation as second-rate units. This perception could delay promotions and lead to a downward spiral in both the quality and quantity of volunteers. The reduced combat capability of the two wings would also mean that two fewer wings are available to respond to MRCs and some MOOTW missions, such as counter-WMD (weapons of mass destruction) strikes or hostage rescues, for which high combat-skill proficiency is required.

Second, while dedicated wings might address the short-term fighter pilot proficiency problem, it would not solve the problems facing other types of units. These wings would still need support from surveillance, transport, tanker, and electronic combat assets. This option would do nothing to reduce demand for these assets or to reduce the TDY burden on their crews and support personnel.

CONCLUSION

Over the past 5–6 years, the Air Force has experienced a dramatic increase in the demand for many of its combat, airlift, special-operations, and support elements in peace operations. The number of aircraft flight hours devoted to this activity has increased almost twentyfold, while the total number of Air Force, Air National Guard,

and Air Force Reserve aircraft has decreased 30 percent, from 9,416 aircraft in 1988 to 6,621 in 1995.¹⁹

For many types of aircraft, particularly the fighters, peace operations provide little or no useful opportunity to practice many important combat skills. Although the total number of flight hours devoted to peace operations was less than 10 percent of the total flown by all three components in 1995, the burden was not distributed evenly between either active and Reserve Components or among active-duty commands. These two factors combine to dramatically affect the short-term combat readiness of large numbers of Air Force fighter crews (especially those in Europe) and special-operations crews. The concomitant increased demand for medical, security-police, and civil-engineering units strains those units' ability to meet MRC commitments by reducing training opportunities and limiting equipment availability. Finally, by pushing out highly trained and experienced personnel, the increased TDY generated by peace-operations commitments could have a serious long-term effect on Air Force combat readiness.

There are several possible approaches to dealing with the peace-operations challenge. One not mentioned previously is to simply do nothing and hope they go away. However, since none of the three major ongoing peace operations—Operation Provide Comfort, Operation Southern Watch, and Operation Joint Endeavor—has a definitive end date and other commitments may arise at any time, this approach is probably not advisable. Of the other possible alternatives, the most promising—a new approach to peace operations—would be to take advantage of air power's inherent economy-of-force attributes by adopting a "cop-on-the-beat" operational concept for conducting peace operations. This type of approach could dramatically reduce the size of deployed forces while constantly reminding the target parties that U.S. air power can appear anywhere at any time to punish peace-accord violators. This option has the advantage of addressing both the short-term combat-readiness issues and longer-term quality-of-life issues associated with peace operations.

¹⁹USAF, *United States Air Force Statistical Digest FY 1993 and 1994*, and *Air Force Almanac*, May 1996.

In Part II of this report, we move beyond these immediate concerns to consider tasks that the USAF could face in future MOOTW. Chapter Four begins this exploration with an assessment of the scope of future U.S. involvement in MOOTW. Chapter Five identifies first the tasks that the USAF is likely to be assigned in these operations, then new technologies and associated CONOPs that can enhance the USAF's capability to accomplish these tasks.