



**FEASIBILITY OF REQUALIFYING
YOKOTA C-130S AS AIRLAND ONLY**

GRADUATE RESEARCH PROJECT

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Abstract

In 1997, the Air Mobility Command Commander convened a Tiger Team to develop a road map for C-130s. The command was concerned the C-130 was spending too much time training for its airdrop mission and not enough time flying revenue generating Transportation Working Capital Fund (TWCF) missions. Despite this concern, one of the primary recommendations in the Tiger Team report was to keep all C-130 aircrews 100% formation airdrop and airland qualified.

The purpose of this paper is to examine the feasibility and impact of eliminating the airdrop qualification of C-130 aircrews at Yokota AB Japan. The paper investigates three questions in exploring this research problem. The first investigative question examines the feasibility of combat delivery C-130s meeting wartime requirements if Yokota is requalified as airland only. The second investigative question examines if requalifying Yokota C-130s risks the Pacific TWCF and Joint Airborne/Air Transportability Training (JA/ATT) peacetime requirements. The final investigative question examines the impact requalifying Yokota has on training requirements and whether or not Yokota needs to fence training aircraft. In the end, the paper concludes that it is feasible to requalifying Yokota as airland only. The theater Commander in Chief (CINC) still has an effective force to meet all wartime requirements and an increased capability to meet peacetime requirements. At the same time, the requirements are met more efficiently, as savings are realized through reduced training and deployment costs.

FEASIBILITY OF REQUALIFYING YOKOTA C-130S AS AIRLAND ONLY

I. Introduction

Background

Still in production, the C-130 Hercules transport aircraft first flew 46 years ago and has been delivered to more than 60 countries (21:1). In the United States (US), the aircraft is currently based in 34 states, operating throughout several major commands and across multiple missions, including the Guard and Reserve (26:4). Several variants have been produced over the years, conducting missions ranging from close air support and air interdiction to aerial spraying and weather reconnaissance. Yet, the C-130 is primarily an intratheater airlifter. As the aircraft that accomplishes that mission, the combat delivery C-130, (also known as the “slick” C-130) accounts for 75% of the force (2:56). It is the “fit” or match between the missions, requirements and qualifications of the combat delivery C-130 that is the focus of this research.

The combat delivery C-130 has a dual identity in executing its intratheater airlift mission. It is both an air operations force as well as an element of the logistic support system (15:vii). The C-130 deploys, employs and redeploys as an air operations force and sustains forces in theater as part of the logistics support system. In accomplishing either mission, the C-130 has two modes of aerial delivery: airland and airdrop. Depending on the operational requirements of the mission, planners select the best delivery mode and task the mission accordingly. Currently, all active duty, Guard and

Reserve C-130 squadrons are 100% formation airdrop and airland qualified; therefore, any squadron can be tasked to accomplish an airland or airdrop mission.

While the current C-130 qualifications allow the flexibility to task any unit to accomplish any mission, this flexibility does come at a cost to the Air Force (AF). First, squadrons must accomplish all the training requirements necessary to remain 100% formation airdrop and airland qualified. Consequently, the AF has to budget Operations and Maintenance (O&M) funds to pay for the flying hours to accomplish those training requirements. Second, while the aircraft are flying training requirements they are not generally available to flying other peacetime requirements to include revenue-generating Transportation Working Capital Fund missions. Training requirements can account for a significant amount of a C-130's annual flying hours. In the Pacific, training requirements accounted for approximately 45% of the annual flying hours of the two active duty C-130 squadrons (18:1). As a result, 45% of the active duty Pacific Air Force (PACAF) C-130 flying time is not available for other peacetime requirements.

Crew qualifications, however, are based on wartime requirements. If the theater Operation Plans (OPLANS) require that all C-130s be 100% formation airdrop and airland qualified, then the high training requirements and reduced availability of aircraft to fly TWCF missions becomes the necessary cost of readiness. On the other hand, if it was determined that the OPLANS did not require the current level of qualifications, C-130 qualification levels could be reduced and these training hours could be better allocated to other operations. The lower crew qualifications would require fewer training requirements resulting in lower O&M costs and more aircraft availability to fly peacetime

requirements. These are the issues included in the research of this paper and the issues addressed in a recent C-130 Tiger Team report.

Tiger Team Report

Air Mobility Command (AMC) is the functional manager for all combat delivery C-130 aircraft and has the responsibility for effectively managing that force. The AMC Commander, honoring this responsibility, initiated a multi-command C-130 Tiger Team (TT) in 1997 to address chronic problems that had been plaguing the weapon system over the years (2:2). The TT met for 90 days, identifying core problems and developing an integrated strategy for resolving them. The TT organized into Requirements, Organize, Train, and Equip subgroups to address the problems in each of these core areas (2:3). This research is primarily concerned with the report of the Requirements subgroup.

The Requirements subgroup focused on defining C-130 wartime requirements, mission capabilities, and operating environment. Further, the Requirements subgroup was tasked to recommend a proper mix of airland, single-ship airdrop, and formation airdrop crew qualifications to meet their defined wartime requirements. Specifically, there was concern that the active duty, Guard, and Reserve force was over qualified and inefficient in remaining 100% formation airdrop and airland qualified. Additionally, AMC believed C-130s were spending too much time flying airdrop training and JA/ATT missions and not enough time flying revenue-generating TWCF missions. To make matters worse, aircraft availability for TWCF missions was decreasing as AMC was losing C-141s faster than C-17s were coming online. AMC hoped the TT could justify reducing C-130 airdrop qualifications. As discussed, lower qualifications would result in

lower O&M funding requirements and more C-130 aircraft could be made available for TWCF missions. Unfortunately for AMC, the TT in its final report recommended that combat delivery C-130 crews remain 100% formation airdrop and airland qualified. The TT believed that this was the most success oriented solution despite being unable to find a documented wartime requirement dictating a theater airlift force 100% formation airdrop qualified (2:18).

Research Problem

The purpose of this paper is to reevaluate the airdrop requirements for combat delivery C-130 units and examine the feasibility of requalifying a C-130 squadron as airland only. Specifically, this paper examines the feasibility and impact of requalifying the C-130 squadron at Yokota AB Japan as airland only. The C-130 squadron at Yokota was chosen for four primary reasons:

1. Yokota's high airland peacetime requirements may be more effectively and efficiently accomplished by an airland only squadron.
2. Elmendorf deploys three aircraft throughout the year to Yokota to accomplish airland only missions.
3. Yokota has relatively low JA/ATT requirements when compared to other C-130 units.
4. Yokota's size of only ten primary aircraft assigned (PAA) provides a manageable force for analysis.

In examining this problem, the research will focus on what effect the requalifying of the Yokota C-130 squadron as airland only would have on the three primary C-130 requirements: wartime, peacetime and training. In contrast to the Tiger Team Final

Report, this research only examines the feasibility of C-130 crews at Yokota becoming airland only. It will not explore the feasibility of qualifying a percentage of the force as formation airdrop, single-ship airdrop and airland only qualified.

Investigative Questions

This research examines the feasibility of requalifying Yokota's C-130 squadron as airland only by answering three investigative questions. The first investigative question examines the feasibility of combat delivery C-130s meeting wartime requirements if Yokota is requalified as airland only. The second investigative question examines if requalifying Yokota C-130s risks the Pacific TWCF and JA/ATT peacetime requirements. The final investigative question examines the impact requalifying Yokota has on training requirements and whether or not Yokota needs to fence training aircraft.

Research Design and Methodology

The first investigative question examines if combat delivery C-130s can still meet all of their wartime requirements if Yokota requalifies to airland only. The ideal mixture of C-130 crew qualifications would allow combatant commanders to effectively and efficiently execute their OPLANs. "Effective" is defined as making the right decisions and successfully implementing them, while "efficient" is defined as using resources wisely and in a cost-effective manner (5:7). Historically, the military has been more concerned with ensuring effectiveness rather than efficiency. Yet, in today's fiscally constrained environment, the AF can not afford to maintain an over-qualified force. Therefore, theater CINCs need to accurately define OPLAN requirements, allowing the

AF to make qualification-tailoring decisions. A force tailored to meet all defined wartime requirements is still an effective and efficient combat force. Therefore, this paper assumes that requalifying Yokota is feasible only as long as it does not affect the CINC's ability meet all wartime requirements. If Yokota is airland only qualified and the wartime requirements can be met, the CINC still has an effective and efficient force to execute the OPLAN.

The second investigative question seeks to determine the impact that requalifying Yokota would have on the peacetime TWCF and JA/ATT requirements. This second question is further subdivided into two sections. The first section examines if there are a sufficient number of TWCF missions available at Yokota to justify requalifying the squadron as airland only. The discussion concentrates on the availability of TWCF revenue generating airland only missions, which include Channels, Special Assignment Airlift Missions (SAAMs), and Joint Chiefs of Staff (JCS) Exercises. TWCF missions are important to each command as they generate revenue through a revolving industrial fund. The revolving fund takes advantage of the fact that aircrew training generates airlift as a by-product of putting the crew and aircraft in the air. Mobility Airlift Command, recognizing the benefits, began requiring Department of Defense users to budget and pay into an industrial fund for use of the resulting airlift (17:1). Today, the revolving fund is designated the Transportation Working Capital Fund. TWCF missions are beneficial to the commands because they do not have to budget and pay for the training their crews receive on these missions. At the end of the year, any training costs not covered by TWCF must be paid for using command O&M funds (17:1). Thus, the

more TWCF missions the C-130 flies the less O&M funds the command has to budget each year for training.

The second section of this investigative question examines the ability of other assets in theater to accomplish the airdrop JA/ATT requirements that Yokota will no longer be qualified to fill. In addition to finding a unit to fill the JA/ATT requirement, the desired solution should not increase the Operations Tempo (OPTEMPO) of the unit filling Yokota's JA/ATT requirements. In estimating future JA/ATT requirements, the Fiscal Year 1999 (FY99) Yokota JA/ATT mission schedule is used as the benchmark. The paper assumes that any solution that provides the same number of aircraft and missions as the current schedule is sufficient to meet future JA/ATT requirements and does not represent reduced capability to meet JA/ATT requirements.

The final investigative question attempts to determine the training requirements for an airland only squadron and whether or not Yokota will need to fence training aircraft to accomplish those requirements. First, a determination must be made on the qualifications an airland only squadron needs to maintain. After the qualifications are established, the necessary training requirements can be determined by referencing Air Force Instruction 11-2C-130 Volume 1 (AFI 11-2C-130V1). The PACAF flying hour model will then be used to estimate the number of flying hours necessary to complete all of the training requirements. Next, the estimated flying hours will be used to determine whether or not Yokota needs to fence aircraft for training to ensure they are available to fly the training hours. Finally, the research examines the affect the decision to fence training aircraft has on the availability of aircraft to fly peacetime requirements.

The paper is organized into four additional chapters. Chapter Two addresses the first investigative question by examining C-130 wartime requirements focusing on the research presented in the *C-130 Tiger Team Final Report*. The third chapter addresses the second investigative question examining the impact on TWCF and JA/ATT peacetime requirements. The fourth chapter determines the training requirements and discusses the impact of fencing aircraft for training. The final chapter summarizes the investigative questions and answers the question of the feasibility and impact of requalifying Yokota as airland only.

II. Wartime Requirements

Introduction

Wartime requirements must be defined to determine if a change in qualifications at Yokota risks the Pacific CINC's ability to execute the OPLAN. In a much broader sense, an understanding of all C-130 wartime requirements is necessary to put the Pacific C-130 wartime requirements in perspective. In discussing wartime requirements, the majority of the chapter focuses on research conducted by the C-130 Tiger Team Requirements subgroup. The Requirements subgroup was tasked to define the operating environment, mission capabilities, wartime requirements and qualifications for all combat delivery C-130s. This chapter begins with the TT's initial research discoveries and requirements definitions of the C-130's expected operating and threat environment. After establishing this baseline, the chapter presents the TT's defined wartime requirements and discusses the validity of each of its assumptions. Finally, the chapter presents the TT's final determination of C-130 crew qualifications to include the qualification options, quantifiable concerns and non-quantifiable concerns that affected its decisions.

Requirement Definition

The Tiger Team began its investigation by researching existing sources for documented C-130 wartime requirements. The Joint Strategic Capabilities Plan (JSCP) directs the theater CINCs to document theater airlift requirements for C-130s in their OPLANs (2:5). Unfortunately, the TT discovered the theater CINCs and planning staffs have done a poor job of defining and documenting C-130 theater mission types and levels of support in their OPLANs (2:4). The only document the TT could find that actually

quantified the C-130 requirements was Joint Staff J-4 sponsored *Intratheater Lift Analysis* (ILA). The ILA provided detailed C-130 mission requirements for both the East and West OPLANs and became the primary source for defining wartime requirements in the TT's final report (2:3). While the ILA clearly defines mission types and level of support in total number of aircraft, it does not differentiate between airland and airdrop missions. The failure of all source documents to clearly distinguish between the two delivery modes made defining a wartime airdrop requirement extremely difficult.

The TT found that the OPLANs provided only vague references to airdrop requirements (2:8). The only clearly defined airdrop requirements were found in a few of the contingency plans (CONPLANs), which defined a formation airdrop requirement. As a result, the CONPLANs airdrop requirement became the basis for defining a formation wartime airdrop requirement (2:8). Still, the overall lack of a documented single-ship airdrop requirement forced the TT to generate their own requirement based on their experience, assumptions and research of existing peacetime and contingency requirements. In the final report, the TT did define the following wartime requirements:

1. Operating/threat environment in which combat delivery C-130s can be expected to operate, including required mission capabilities.
2. Wartime C-130 requirements, to include a worst-case formation and single-ship airdrop requirement.
3. Wartime crew qualification requirement based on the most success-oriented solution.

The subsequent sections expand on the research, assumptions, and definition of each requirement as it was presented in the *C-130 Tiger Team Final Report*.

Operating/Threat Environment

The C-130 Hercules is unmatched as a workhorse for forces around the world. The aircraft has been in service for over 45 years and is still in production and operation in over 60 different countries today (21:1). The C-130 was originally designed in 1951 to meet the theater airlift specifications for the Tactical Air Command (24:319). Over the years, Lockheed Martin has produced several different variants to conduct a variety of missions, but primarily the C-130 has remained a theater airlifter.

Joint Pub 3-17, Joint Tactics, Techniques, and Procedures for Theater Operations (JP 3-17) defines the C-130's theater airlift mission as establishing air lines of communications between air terminals, as required for operations. While a broad definition, JP 3-17 goes on to say that theater airlift has the dual identity of being both an air operations force and integral part of the logistics system. In effect, C-130 theater airlift missions are divided into two categories: air operations as it deploys, employs, and redeploys forces in theater; and logistics operations as it sustains forces in the field. In accomplishing each of these missions the C-130 delivers personnel and supplies either by airland or airdrop. Each delivery mode offers specific advantages and selecting the most effective method is often a critical planning decision.

In making the right planning decision, JP 3-17 identifies five parameters: 1) the nature of the theater airlift operation, 2) user requirements, 3) capabilities of available airlift forces, 4) types of airlift terminals available, and 5) the threat. After defining each parameter a comparison of advantages of each delivery method is considered.

Airland

- Allows greater degree of unity, integrity, and capability to rapidly employ units after landing.

- Carries the least amount of risk of injuring personnel and damaging loads.
- Requires minimal specialized training and equipment for transporting personnel.
- Rarely requires special rigging of material.
- Permits the maximum utilization of cargo capacity.

Airdrop

- Permits sustainment deliveries to units operating away from airfields and Landing Zones.
- Permits the concentrated delivery of combat forces and materiel en masse in the minimum space and time.
- Allows accurate delivery during poor visibility that would otherwise preclude airland operations (2:7).

Once these advantages have been compared to the planning factors, the planning staff chooses the most effective delivery method and tasks a combat delivery C-130 unit to accomplish the mission.

A tasking advantage current planners enjoy is that all active, Reserve, and Guard C-130 crews are fully qualified to accomplish both formation airdrop and airland taskings. Still, airland is by far the delivery mode of choice and constitutes the majority of C-130 peacetime and contingency missions. In fact, JP 3-17 stresses that planners should view airland delivery as the option of first choice for most air movements (15:I-13). This still holds true today, as planners decided to task only airland missions in two of the most recent major military operations Desert Shield/Desert Storm and Operation Allied Force as well as numerous humanitarian operations (2:13). Nevertheless, C-130 crews have also been tasked to transition quickly from an airland only operation to either execute or at least plan for aerial delivery missions. A list of some of the operations in which this occurred include Operation Provide Promise (Bosnia), Uphold Democracy (Haiti), Support Hope (Rwanda), Vigilant Warrior

(Kuwait), and Provide Comfort (Turkey and Northern Iraq) (2:13). Consequently, there is no argument that C-130 aircrews need to be qualified in both airdrop and airland operations, but do all crews need to be 100% qualified in both formation airdrop and airland operations?

In answering this question, the TT first established a baseline C-130 crew qualification. The TT combined their document research with inputs from various command C-130 experts to determine a basic qualification. The TT stressed that additional sources had to be sought out as the OPLANs, CONPLANs, and even the ILA lacked an exact description of what the C-130 would be required to do in theater. Primarily, the TT sought input from AMC Intelligence, War Plans Directorates, and the Combat Aerial Delivery School (2:7). Combining these inputs, the TT determined that C-130 crews would be required to frequent small austere runways and routinely transit threat environments (2:7). Additionally, all crew would have an equal chance of operating in this environment; consequently, all crews should receive training in the same basic toolkit of skills to provide the best chance for survival. Table 1 lists the “Basic Toolkit” of skills the TT believes combat delivery C-130 crews should maintain regardless of their final qualifications (2:8).

Table 1. Combat Delivery C-130 Basic Toolkit

BASIC TOOLKIT OF SKILLS
Assault Zone Operations
Defensive Systems Operations
Low-Level Operations– All Hours/All-Weather
Night Vision Goggle
Random Landing Zone Approaches
Combat and Engine-Running Onload/Offload
<i>Basic Airland Operations</i>

In effect, the TT asserts that crews should maintain qualifications in all of these areas in addition to their basic airland qualification. In addition, airdrop qualified crews should maintain all of these basic qualifications in addition to their airdrop requirements.

The TT also researched potential future operation environments to fully validate the robustness of their basic toolkit of skills. *Expanding Joint Vision 2010* and the Advanced Warfighting Experiment (AWE) were the TT's primary references for potential operating environments. The report summarized requirements of *Expanding Joint Vision 2010 (May 1997)* by taking applicable quotes of future operational requirements to included:

Decisive Operations will require the abilities...to conduct 24-hour, multi-dimensional operations under any weather conditions." "Dominant Maneuver" is characterized by...adaptable maneuver units that can be tailored to task for any operation...." and, "Focused Logistics"...the fusion of...technologies to provide rapid crisis response, to track and shift assets even while en route, and to deliver tailored logistics packages and sustainment directly at the strategic, operational and tactical level of operations (2:7).

These concepts were put to the test by the Army's Experimental Force at Ft Hood Texas during the AWE conducted in November 1997 (2:7). Three divisions and an Armored Cavalry Regiment fought almost 800km in six days, generating the need for approximately 150 C-130 airdrop missions per day. The TT report concludes that the accomplishments of the Army units and their sustainment requirements appear to validate the basic *Force XXI* tenets of the draft *FM 100-5*, "agile and flexible maneuver and logistics to sustain tempo so as to preclude an operational pause" (2:9). In its final assessment, the TT concluded that future operations would continue to rely on C-130 aircraft to conduct both airland and airdrop operations and require the skills listed in the

basic toolkit (2:9). Now that the operating environment was defined, the TT set out to define wartime requirements.

Wartime Requirements

Quantifying the wartime requirement was a difficult task due to the recurring problem of poor documentation. Still, the TT focused on these primary documents: the Defense Planning Guidance, OPLANs, CONPLANs, and ILA. The Defense Planning Guidance provides the overarching guidance and generates the largest combat delivery C-130 requirement of supporting two near-simultaneous Major Theater Wars (MTWs). At the theater level, OPLANs and CONPLANs further define the number of assets and phases of engagement. In supporting each of these plans, C-130s are generally assigned three types of missions: Aeromedical Evacuation (AE), Scheduled Theater Airlift Routes (STARs), and Direct Service Support (DSS). AE missions provide the capability to airlift critically injured personnel from forward operating bases to main operating areas in the corps rear (14:7). STARs are intratheater channel missions that provide scheduled airlift between key points in the theater (14:7). DSS missions provide aircraft to support specific unit moves or operations. While the AE and STAR missions are airland only, the DSS missions can include either airland or airdrop operations (14:7).

The TT found the AE requirements to be well defined and documented in the theater OPLANs and CONPLANs. In contrast, STARs and DDS missions were not as well quantified in the reference documents. One document, the *Intratheater Lift Analysis* did a good job of quantifying and defining theater requirements. Specifically, the ILA takes the East and West OPLAN assumptions and quantifies the number of assets

required for execution to include combat delivery C-130s. The ILA quantifies the requirements in regards to the AE, STAR, and DSS missions. The number of aircraft required for each type of mission was determined based on the worst day of the worst week of the war. In other words, the ILA calculated the number of aircraft required on the worst AE day of the worst AE week, added the number of aircraft required on the worst STAR day of the worst STAR week, and then added the number of aircraft for the worst DSS day of the worst DSS week. Figure 1 depicts the total number of aircraft and mission type the ILA apportioned to each major theater (2:7).

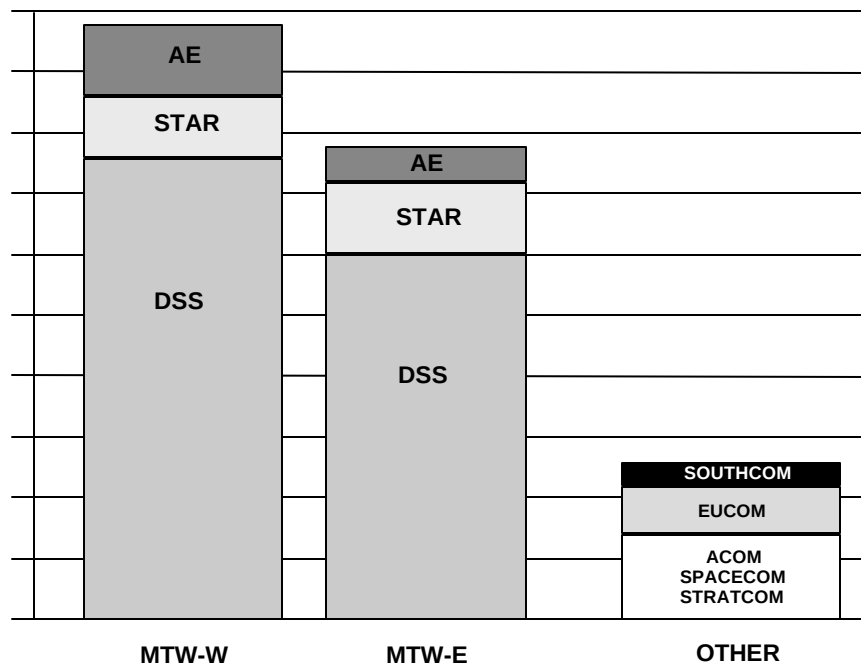


Figure 1. ILA Wartime Requirements

As in the TT report, the actual numbers have been removed as they are classified and not required in the final evaluation of this paper. The “Other” requirement in the chart is the result of an ILA follow-on study. The study quantified the number of combat delivery

C-130s that would be required by other CINC's in addition to the 2 MTWs (12). Of note, the chart quantifies combat delivery C-130 requirements according to the three categories of missions, but does not specifically separate out DSS airdrop and airland missions.

The airdrop requirements for the MTWs still needed to be quantified to determine crew qualifications; so, the TT continued its research and made certain assumption to define this last requirement (2:9). With rare exception, DSS airdrop specific missions were vague or ill defined, especially in the OPLANs (2:8). Still, the ILA provided a number of aircraft required to conduct DSS mission in support of the OPLANs. Further, the ILA states that the DSS mission could require airland or airdrop missions. Therefore, the TT made the assumption that if DSS missions could require either delivery mode the C-130 force should be qualified to accomplish all DSS missions as airdrop. Since the DSS missions accounted for 80% of the aircraft, the TT defined the single-ship airdrop requirement as 80% of the C-130 force.

The formation airdrop requirement came from a few CONPLANs that referenced formation airdrop packages; the largest of which was a brigade-sized force airdropped from within theater. The TT used this requirement as a baseline and assumed that if one CINC desired a capability to drop a Division Ready Brigade-Medium (DRB-med) using only organic C-130 assets, another CINC might want the same flexibility (2:9). So, in lieu of a specific requirement in the primary OPLANs, the TT decided to define the theater CINC's formation airdrop requirement as the number of C-130s to airdrop a DRB-med from within both MTWs.

The actual number of C-130s required for this capability in each theater was taken from the 82nd Airborne Division Readiness Standard Operating Procedure (RSOP). The RSOP specifies a C-130 only number to accomplish a DRB-med airdrop. Historically, C-130 mission planners have added a 10-15% spare factor for large airdrop packages and the TT decided to adhere to this standard. The DRB line in Figure 2 represents the number C-130s required to conduct a DRB-med drop and the DRB + 15% line includes the number of spare aircraft required. A third line is added to indicate a daily airdrop capability. The TT computed the daily capability by using a conservative factor of crews flying once every third day. As a result the daily airdrop capability is a 1/3 of the full airdrop capability (2:10).

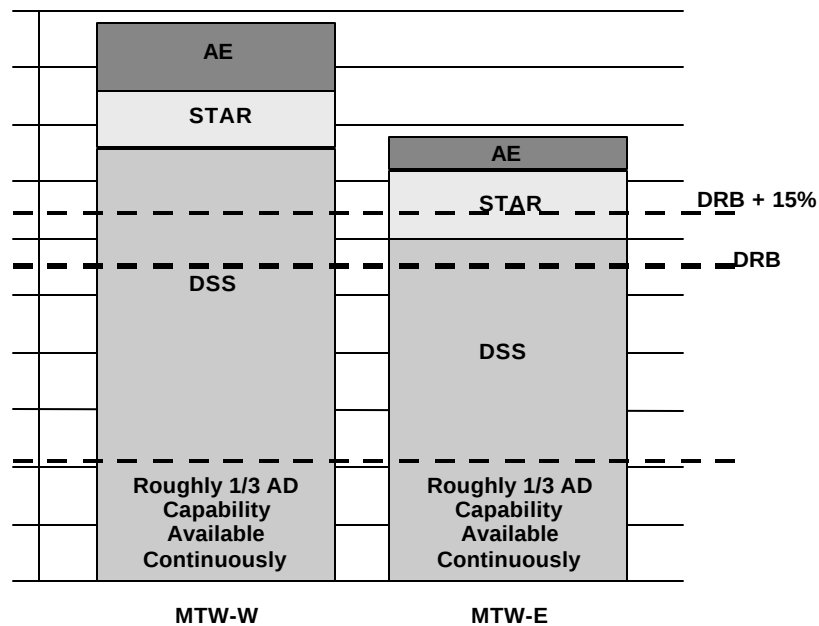


Figure 2. Wartime Airdrop Requirement

The TT does make the point that its formation airdrop assumption put a tremendous capability in the hands of the theater CINC's. This airdrop capability

exceeds any airdrop requirement the TT could find since Vietnam (2:10). To put the capability in perspective, the TT report points out that this would allow the theater CINCs to conduct a Haiti-sized airdrop every day of the war assuming all other airdrop prerequisites are not a limiting factor (2:10). At this point, the TT had, through its research and assumptions, defined the number of C-130s required to support two MTWs and the number of aircraft necessary to meet the requirement for a DRB-med as the formation airdrop requirement. Now that the aircraft requirements have been defined, the actual crew qualifications to meet those requirements could be determined.

Aircrew Qualification Requirements

After quantifying the airland and airdrop requirements for the two MTWs, the TT attempted to translate these into requirements for aircrew qualifications. A summary of the TT's research results up to this point include the following:

1. All C-130 aircrews should be trained in the "Basic Toolkit" skills.
2. From the ILA, a minimum of approximately 80% of our authorized crew force must be single-ship airdrop qualified.
3. The desired CINC formation airdrop flexibility is enough theater assets to airdrop a Division Ready Brigade-Medium in both MTW theaters.
4. This formation airdrop capability constitutes approximately 40% of the total authorized crew force. This number is the percentage of crews required to conduct a DRB-medium plus the spare crews in both MTWs simultaneously.
5. The force sized to meet the worst case requirement – the DRB-medium, can accomplish all other theater formation airdrop requirements.
6. There are no historic or current contingency or peacetime requirements that exceed these wartime requirements (2:13).

The TT, moving forward with these definitions, concluded that there were four options for qualifying the crew force. While this paper is only considering an airland only qualification, the TT report considered the option of downgrading some crews to a single-ship airdrop qualification as a third option. All of the TT's options are included in this discussion to provide a basis for the reports final recommendation. The following paragraphs define and explain the four options considered in the report.

Option 0 does nothing and continues the current crew force of 100% qualified in formation airdrop operations. This option meets all of the wartime, contingency, and peacetime requirements as documented and executed today.

Option 1 is to qualify 40% of the authorized force in formation airdrop and the remaining 60% in single-ship airdrop operations. Analysis of the wartime requirements yielded a requirement for approximately 40% of the authorized crew force trained in formation airdrop.

Option 2 is to qualify 50% of the authorized force in formation airdrop and the remaining 50% in single-ship airdrop operations. This option exceeds the wartime requirement for formation airdrop requirements.

Option 3 is a 40% Formation Airdrop, 40% Single-Ship Airdrop, and 20% Airland qualified force. From the ILA, 20% of the missions are strictly airland; thus, 20% of the authorized force could be airland only, and having more than 40% formation airdrop-qualified is not justified, leaving 40% single-ship airdrop-qualified. This option meets/exceeds the wartime requirement (2:13).

Each of the options designates a percentage of the crews qualified in formation airdrop, single-ship airdrop, and airland only. The TT then compared these percentages to the Air Force's forecast C-130 crew manning. Specifically, the TT took the *Air Force's July 1997 Forecast Active Duty Pilot Shortage* (AF/XOOT Red Line/Blue Line Pilot Inventory vs. Requirements) and combined it with the ANG and AFRC current reported manning figures. The TT's report also accounted for aircrews that will not be

available while their units are undergoing conversion to either the J-model or C-130X. The TT then took these forecasted crew shortages and compared them to the identified wartime requirements. The result is the Forecast C-130 Crew Manning chart in Figure 3 (2:14).

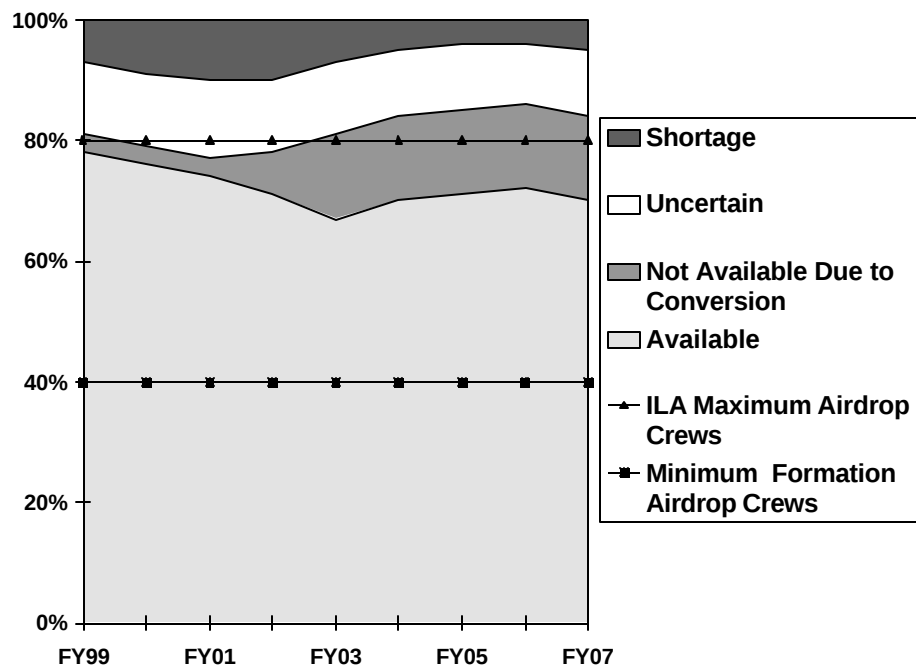


Figure 3. Forecast C-130 Crew Manning

The TT made several assumptions when creating Figure 3. The Uncertain zone is the difference between a best case and worst case line C-130 crew manning. For the best case, the TT assumed the total pilot shortage was shared 50-50 between the staffs and line units. In other words, if there was a 10% shortage in pilot manning, the line and staffs would be both be manned at 90%. For worst case, they assumed the line units would absorb two-thirds of the shortage. Thus, the Uncertain zone reflects the uncertainty of exactly how the pilot shortage will be shared between the staff and line units. The top of the Uncertain zone represents the best case and the bottom of the Uncertain zone is the

worst case. The difference between the top of the uncertain zone and the 100% total authorized crew force is the line unit crew shortage. From the worst case manning the TT subtracted the crews whose aircraft are programmed for conversion to the J-model or C-130X. The rest of the chart represents the available crews to support combat delivery C-130 wartime requirements. The wartime requirements lines, represented by ILA's 80% single-ship airdrop requirement and the 40% DRB-med formation airdrop requirement, are overlaid on the chart.

The TT in its final report came to the conclusion that Figure 3 illustrates the impracticality of "fencing" crews or whole units in a purely airland role (2:15). The TT bases this conclusion on the fact that from FY03-07 subtracting the crews not available due to conversion from even the top of the Uncertain zone results in crews available being less than 80%. A line crew manning of less than 80% is unable to meet the ILA identified single-ship airdrop requirement, therefore, the TT eliminated Option 3 from further consideration. This decision essentially ended any chance of designating entire units or a percentage of the force as airland only. A discussion of the assumption that led the TT to this conclusion is appropriate at this point as these assumption if true make requalifying the Yokota C-130s to airland only and meeting wartime requirements infeasible.

Airdrop Requirement Assumptions

The TT team made two critical assumptions in creating Figure 3 and defining airdrop requirements, which lead to its conclusion that crews could not be fenced as

airland only. The first assumption was the apportionment of pilot shortages between staff and line units when creating the Forecast C-130 Crew Manning chart. The second crucial assumption was that the ILA identified an 80% single-ship airdrop requirement for the combat delivery C-130s. The validity of both these assumptions is addressed in the following paragraphs.

The first assumption states that the pilot shortage will be shared between the staff and line units. In March of 1998, HQ USAF/XO sent out a message titled, *Rank Ordering Positions For Pilot Prioritization Plan* (11:1). The message required all organizations listed in the message to rank order their pilot positions in order of importance. The following organizations and corresponding fill rates were included in the message (11:4).

Table 2. Organizations Manned Less Than 100%

Organization	Fill Rate	Organization	Fill Rate
ARC Advisors	25%	PACAF	74%
ALO/TALO	56%	USAFE	74%
HAF	68%	AFRC	70%
ACC	72%	ANG	67%
AETC	72%	STAFF Other	75%
AFMC	59%	USAF A	68%
AFSOC	79%	AFOTEC	66%
AFSPC	81%	AU	66%
AMC	72%		

Since these organizations would be manned at less than 100%, the USAF/XO wanted a prioritization for filling the position. By default, any organization or unit not included in the message would be manned at 100% (6). Only staff units were listed in the message, therefore, all line units were to remain manned at 100%. Accordingly, the staff units

were required to absorb 100% of the pilot shortage. This updated guidance eliminates the TT's discussion and assumptions on the sharing of pilot shortages between staffs and line units. This new guidance eliminates the Uncertain zone because there is no doubt that the pilot shortage will be apportioned 100-0 between the staff and line units. Additionally, the Shortage zone is eliminated because the manning at the line units will be 100%. As a result, the only reduction in crew manning at the line units results from crews being unavailable during conversion to the J-model or C-130X.

The percentage of crews unavailable due to conversion was a best guess at the time of the *Tiger Team Final Report*. The uncertainty of the J-model acquisition, beddown plan and the X-model conversion contract made accurate estimates difficult. The X-model conversion Request For Proposals is scheduled for late Spring 2000 with contract award occurring later the same year (23). Until the contract is awarded, conversion schedules finalized and J-model acquisition finalized, the aircrew unavailability due to conversion is still a best guess. As a result, the following Updated Forecast C-130 Crew Manning, Figure 4, includes the new pilot prioritization guidance and no changes at this time to the unavailability percentages from the TT report.

As Figure 4 illustrates, a proportion of the force could be fenced airland only without affecting the TT's defined airdrop requirements. The current conversion estimates of 14% of the force being unavailable in FY03 through FY07 would allow up to 6% of the force being airland only qualified. As a result, approximately 6% of the force could be qualified as airland only without affecting the C-130's ability to meet wartime requirements

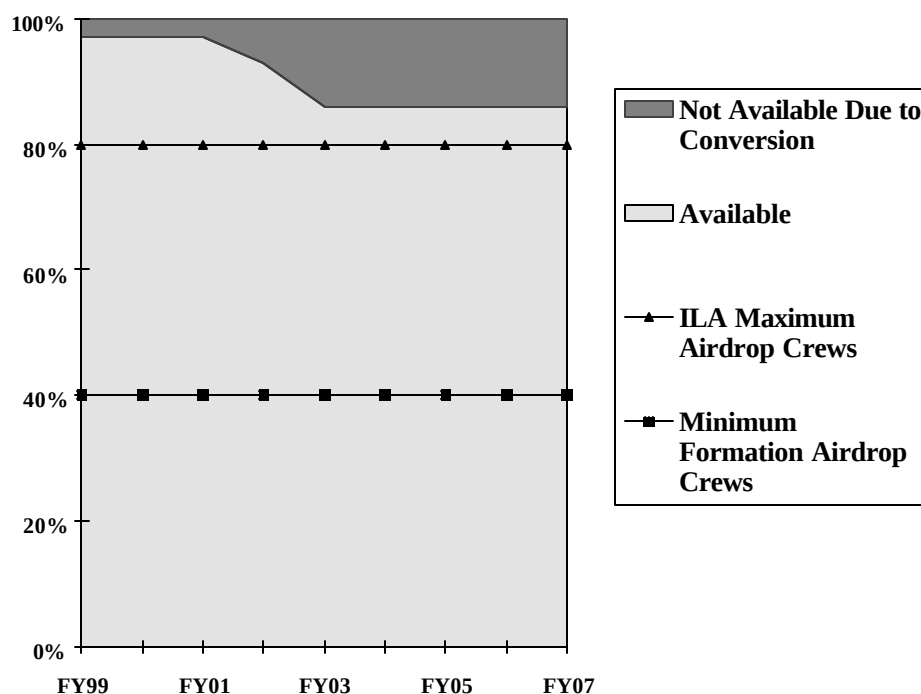


Figure 4. Updated Forecast C-130 Crew Manning

Yokota only has a PAA of ten aircraft, which is less than 6% of the total force.

Therefore, requalifying Yokota or similar units up to the 6% total as airland only is feasible, since it does not affect the C-130's ability to meet wartime requirements. An even larger percentage of the force could be requalified to airland only if the conversion percentages prove to be less than anticipated, or the ILA's 80% single-ship airdrop requirement was lowered.

The current 80% single-ship airdrop requirement stems from the fact that the ILA divides the C-130 theater airlift missions into the AE, STARs, and DSS categories. The DSS missions provide aircraft to support specific unit moves or operations and account for account for 80% of all ILA identified C-130 missions. While the ILA does state that DSS missions can be airland or airdrop, it does not specifically designate a percentage of

missions as airland or airdrop. The TT, in defining its airdrop requirement, made the assumption that if a DSS mission could be airland or airdrop C-130 crews should be qualified to accomplishing all DSS mission as airdrop. Since DSS accounts for 80% of the missions, 80% of the C-130 combat delivery crews need to be airdrop qualified. The 80% single-ship airdrop requirement is twice the formation airdrop requirement to deliver a DRB-med in both MTWs. This single-ship airdrop requirement is incredibly high considering the fact that it is based on an interpretation of the OPLANs.

The current OPLANs, as the TT stressed throughout its final report, either vaguely reference or ill-define airdrop requirements (2:8). The only well-defined airdrop requirement was found in the CONPLANs, which became the basis for the TT's formation airdrop requirement. The ILA is an analysis of the assets needed to accomplish the East and West OPLANs. If the OPLANs do a poor job of documenting and quantifying airdrop requirements, how can the ILA, based on the OPLANs, define an accurate single-ship airdrop requirement of 80% of the force? The ILA, while a good source for quantifying the assets needed, does not accurately address the method of delivery, and therefore, becomes a questionable source on which to base airdrop requirements. The ILA in no way implies that 100% of the DSS mission could require aerial delivery. The fact that JP3-17 states that airland is the preferred delivery method makes 100% of the DSS missions requiring airdrop even more unlikely.

An accurate airdrop requirement can come only from the CINCs and their planning staffs. The CINCs need to define and quantify the capability they need in theater. Absent documentation by the CINCs in the OPLANs, the CONPLAN requirement for a DRB-med airdrop from within theater seems to be the only documented

maximum airdrop requirement. While not in the OPLAN, it at least provides a documented requirement and should be the basis for determining the proper mix of qualifications in the C-130 force. Anything more than the 40% requirement should be the result of defined airdrop requirements from the Theater CINCs and included in the OPLANs. Still, the TT had to make its own assumptions due to the lack of guidance and made the most liberal interpretation.

Even when considering this liberal interpretation of the single-ship airdrop requirement, the feasibility of requalifying Yokota as airland only is not affected. The new pilot prioritization guidance dictates that line units will be manned at 100% and the crews unavailable due to conversion is only 14% of the force. Since the Yokota squadron accounts for less than 6% of the force, the C-130s can still meet the 80% single-ship airdrop requirement defined by the TT in its final report. The discussion of the single-ship airdrop requirement assumptions was included as it does affect any future decision to requalify a greater portion of the force as airland only. The remainder of the chapter includes a final discussion of the other three options to provide an indication of the prevalent opinions and concerns of reducing qualifications in the C-130 force.

Quantifiable Concerns

After eliminating the airland only option, the TT continued to evaluate the remaining options by comparing O&M flying hour savings and savings realized by reduced training requirements at the Formal Training Units (FTU). The flying hour savings per year were based on the flying hour programs laid out in the FY99 Program

Objective Memorandum (POM) (2:15). The savings depicted in Figure 5, in the TT report, reflect total hours for the whole active duty, Guard, and Reserve force (2:15).

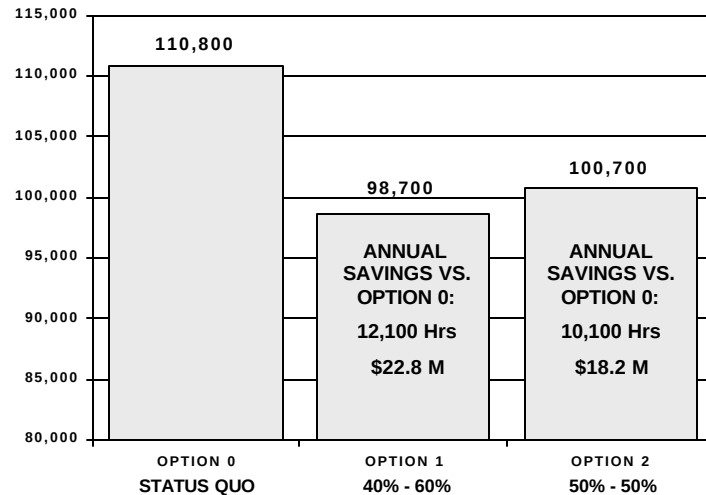


Figure 5. Total Annual O&M Flying Hour Savings

The savings were generated from reduced flying requirements as a result of units requalifying from 100% formation airdrop qualified to single-ship airdrop qualified. The TT eliminated the Lead and AWADS upgrades and reduced the IMC routes and formation recovery requirements for single-ship airdrop qualified crews (2:15).

The total savings from Options 1 and 2 were then adjusted for inflation at 2.5% per year and forecasted through FY10. Option 1 generated \$272 million in savings while Option 2 was slightly less at \$227 million (2:16). The TT put the \$272 million in savings into perspective by stating that it only equates to 1.4% of the overall program budget of \$19.6 billion (2:16). The TT also calculated saving of \$2.5 and \$2.01 million a year for Options 1 and 2 when considering the FTU reduced training requirements (2:16). These savings came from reductions in O&M flying hours, operations/maintenance personnel,

Base Operating Support personnel, and student TDY costs (2:17). While the combined dollar savings provided quantifiable comparisons, it was the non-quantifiable concerns that seemed to weigh heaviest on the TT final recommendation.

Non-Quantifiable Concerns

The TT besides calculating savings also solicited and received a great deal of feedback from the field on a number of non-quantifiable concerns. The concerns fell into five main areas and are included in their entirety from the *Tiger Team Final Report*.

Airdrop as a Core Competency. The combat delivery C-130 force views airdrop, specifically formation airdrop, as a core competency of this weapon system. Before making a determination to qualify the force at less than 100% formation airdrop, the field would like to know how the Air Force and Joint leadership view it. Is formation airdrop a core competency? Or just Airdrop (formation or single-ship)?

CINC Desires. The Tiger Team feels it is crucial to gain feedback from the warfighters on what capabilities they expect from the C-130 fleet. Will a CINC accept that some percentage of available theater C-130 assets will not be capable of formation operations?

Crew Force Morale. There is a concern that multiple crew qualifications will be perceived as creating an “A Team/B Team” culture within the total force, and potentially between components of the active duty, Guard and Reserve force. Today, all crewmembers and units “look” the same. A concern exists with Options 1 and 2 that those not formation airdrop qualified will be viewed as second class citizens. Additionally, since formation airdrop is viewed among the C-130 crew force as a core competency, there is further belief that qualification in formation airdrop is necessary and a requirement for officer professional development and career progression, as well as consideration as a fully capable and participating component. Finally, in the current crew force there are seasoning and experience challenges in managing crossflows from other major weapons systems.

Instructor Force Effect. Similar to the Crew Force Morale concerns are those associated with the assignability of instructors between units. Grassroots feedback says the community foresees potential problems

PCSing instructors from a non-formation airdrop unit to a formation airdrop unit.

Flexibility. Option 0 provides a CINC with complete flexibility as all C-130 crews “look” the same. Options 1 and 2 both add a layer of complexity to the task and execution process. Air Operations Centers disseminate taskings to Wing Operations Centers, not to individual squadrons or crews. The way the C-130s currently deploy and beddown is to provisional, composite wings. Currently, the Air Mobility Division within the AOC does not have to consider the capabilities of a particular wing as all C-130 aircraft and crews possess the same fundamental capabilities. While differing capabilities within a given weapon system is certainly not new or unique, it would be new to theater Air Mobility operations (2:17).

Each of the concerns indicates the aversion from the field of eliminating the formation airdrop qualification in the combat delivery C-130 force.

The first and second concerns of core competency and the CINC’s desires go hand in hand and provide the basis for the entire discussion. Only if the CINCs define their wartime requirements can the AF and Joint leadership provide an answer on airdrop as a core competency. Airdrop can only be a core competency if there is a wartime requirement to conduct airdrop. Without a requirement there would be no reason to maintain it as a competency. As mentioned earlier, the JSCP directs the theater CINCs to document theater airlift requirements for C-130s in their OPLANs (2:5). AF and especially the Joint Leadership need to press the CINCs to better define the types of missions and delivery modes they require in theater.

The third and fourth concerns should be addressed by reassurances that the C-130 force will be managed and provided the same opportunities as the strategic forces. Both the C-141 and C-17 crew force have multiple qualifications of airdrop and airland only crews. In these weapons systems the crews are managed and transferred from unit to unit

throughout their careers. While the management of these transfers is new to the C-130 force, it is not new to airlift force. However, there is a distinct difference between strategic and theater airlift forces. Additionally, the fact that whole units would be designated either airland or airdrop presents its own problems not currently experienced by the mixed units in the strategic forces. As these concerns have some validity, they should be addressed prior to any change. Still, most crews will be apprehensive until actual experience indicates that different qualification will not affect their career.

A force 100% qualified in formation airdrop is flexible, but the flexibility comes at the cost of trying to keep the force qualified. If the airdrop requirement is less than 100%, the C-130 force should be tailored to meet the requirements. With regard to planning and tasking, the F-16 force has a variety of missions with each unit having special qualifications and expertise. When an Air Operations Center (AOC) tasks an F-16 unit it does so according to the unit's mission specialties and capabilities. A C-130 force with varying qualifications should be managed and tasked in the same manner. To think that the entire force should be qualified to a level to ease tasking and planning seems to be a minor concern. After combing the fields concerns with its own research the TT made a final recommendation on crew qualifications.

Tiger Team Final Recommendation

The TT's final recommendation was to maintain the status quo and keep the C-130 crews 100% formation airdrop and airland qualified at this time (2:17). The TT stressed that the potential for \$20 million in savings per year that would result due to qualification changes is not a strategically significant amount when the entire program is

considered (2:18). Further, the TT stated that its research dictated that 100% of the force should maintain an airdrop qualification, due to their Forecast C-130 Crew Manning assumptions and assumption that the ILA requires an 80% single-ship airdrop qualification. Their research and assumptions also dictated that only 40% of the force maintain a formation airdrop requirement to deliver a DRB-med size force in both MTWs. Still, the TT stated that the feedback they received from the field indicated that the most success-oriented solution is to maintain the status quo at this time (2:18). The final recommendation ended with the following summary:

In short, there is a pervasive belief among the C-130 community that a significant wartime airdrop requirement exists dictating a theater airlift force 100% qualified in *formation* airdrop. We were unable to identify such a documented requirement – not even via something as basic as Commander’s Intent – nor any planning factors that dictate our current training types and levels (2:18).

Basically, the TT’s final recommendation was based on their research, assumptions, and belief that a higher formation airdrop requirement does exist.

In summary, C-130 wartime requirements are difficult to define due to the lack of documentation by the theater CINCs. Still, the TT using OPLANs, CONPLANs, ILA and their own assumptions was able to define several requirements. The important requirement for this paper included the 40% formation airdrop and 80% single-ship airdrop requirement for the C-130 force. When comparing these requirements to the current crew force and including crews unavailable due to conversions, 6% of the force could be requalified as airland only without affecting wartime requirements. The Yokota C-130 squadron makes up less than 6% percent of the force; therefore, its requalification to airland only is feasible since it does not affect the C-130's ability to meet wartime

requirements. The next chapter addresses the feasibility of requalifying Yokota as airland only in relation to its impact on TWCF and JA/ATT peacetime requirements.

III. Peacetime Requirements

Introduction

The military tailors its organization, training and equipment according to wartime requirements; however, peacetime requirements account for the majority of day-to-day operations. For combat delivery C-130 units, peacetime requirements consist of flying TWCF, JA/ATT and training missions. TWCF missions consist of revenue generating Channels, SAAMs and JCS Exercises and non-revenue generating contingency missions. JA/ATT missions consist of joint airborne proficiency and continuation training for the user and the crews (7:1). JA/ATT mission are funded by the AF, not the user, through O&M funds because of the airdrop and assault training crews receive during the missions. This is in contrast to TWCF missions, which are user funded, despite the fact that crew receive training on these flights as well. Finally, C-130 units accomplish O&M funded training missions to maintain their 100% formation airdrop and airland qualifications. With few exceptions, these three peacetime requirements account for all of a C-130 squadron's annual flying hours.

Yokota is no different as they flew 5674.9 total hours with TWCF missions accounting for 2,310.9 hours and O&M missions accounting for the remaining 3,364 hours in FY99 (18:1). Table 3 provides a breakdown by mission type (18:1).

Table 3. FY99 Yokota Flying Hour Breakdown

TWCF	Hours	O&M	Hours
Channels	1717.3	Training	2699.4
SAAMs	518	JA/ATT	565
Exercises	75.6	Ferry	99.6
Total	2310.9	Total	3364

Ferry missions consist of flying aircraft back and forth from required maintenance and some training locations. As the next chapter addresses training hours, the remainder of this chapter concentrates on the TWCF and JA/ATT requirements. When delivery modes are considered, 2410.5 hours (to include the TWCF and Ferry missions) were airland, while only the 565 JA/ATT hours were airdrop. In essence, besides training, 81% of Yokota's peacetime requirements were airland and only 19% airdrop. Despite this disparity, Yokota (like every other combat delivery C-130 unit) remains 100% formation airdrop and airland qualified.

This chapter investigates the Pacific Air Force's (PACAF) ability to meet all of its peacetime requirements if Yokota requalifies to airland only. Obviously, Yokota could still accomplish all of its airland requirements as an airland only squadron, but are there enough TWCF regional missions to justify an entire squadron being airland only? Further, if Yokota is airland only who will provide the necessary training to its current JA/ATT customers? To answer these questions, this chapter examines three primary areas: (1) the current basing and missions of C-130s assigned to the Pacific Theater, (2) the availability of TWCF missions for Yokota C-130s and (3) the ability of the other assets in Theater to fill Yokota's JA/ATT requirement.

PACAF C-130 Organization and Mission Allocation

PACAF has two combat delivery C-130 Air National Guard (ANG) squadrons and two active duty squadrons. The first ANG squadron consists of the 144th Airlift Squadron (AS) is stationed at Anchorage Alaska and has eight C-130H aircraft. The second squadron, the 204th AS is stationed at Hickam AFB Hawaii and only has four

C-130H aircraft. The active duty squadrons consist of the 157th AS stationed at Elmendorf AFB Alaska (with 16 C-130H aircraft) and the 36th AS stationed at Yokota AB Japan (with ten C-130E aircraft). The remainder of the chapter will concentrate on the active duty squadrons and mission allocation as they account for the majority of peacetime missions flown in theater.

PACAF currently requires the active duty squadrons to maintain a 65% aircraft generation rate (3:8). PACAF then assigns 60% of the generated aircraft to TWCF mission and 40% to JA/ATT and training missions. The following table depicts the resulting daily aircraft availability and mission allocation for active duty C-130s in PACAF (3:8).

Table 4. PACAF C-130 Aircraft Availability and Allocation

	Assigned	Generated	TWCF	JA/ATT/Training
Elmendorf	16	10	6	4
Yokota	10	6	3	3
Total	26	16	9	7

These 16 aircraft accomplish PACAF's daily peacetime requirements in Theater. The following section examines how the TWCF missions are distributed across the Theater and if there are enough TWCF mission to justify requalifying Yokota as airland only.

Pacific TWCF Requirements

The PACAF Air Mobility Operations Control Center (AMOCC) currently has nine C-130 aircraft, six Elmendorf and three Yokota, available each day to assign to TWCF requirements. Currently, the TWCF missions are distributed around the theater creating a higher demand at Yokota than Elmendorf. As a result, PACAF has arranged for three of

the six Elmendorf aircraft to deploy to Yokota under PACAF's Operation Order (OPORD) 50-98 VOLANT SHOGUN (8).

VOLANT SHOGUN, depending on requirements, provides up to three aircraft, four crews and associated support personnel to deploy to Yokota in support of the peacetime requirements. The PACAF AMOCC is primarily responsible for determining the level of airlift requirements and adjusting the necessary number of aircraft and crews deployed to Yokota. Historically, the TWCF requirements have been at a level that the AMOCC has required Elmendorf to deploy the full package of three aircraft and four crews for the entire year (4). While deployed, the VOLANT SHOGUN aircraft augment Yokota crews with hub and spoke operations from Yokota (8:ii). Regarding OPTEMPO, the OPORD calls for a commitment rate of approximately 80% for the SHOGUN aircraft. The AMOCC attempts to achieve this by apportioning the available TWCF missions between the SHOGUN deployed aircraft and permanently assigned Yokota aircraft. The available TWCF missions consist of Channels, SAAMs and Exercises. To provide an understanding of the C-130 TWCF missions originating from Yokota, the Yokota TWCF schedule between January and April 2000 is included in Appendix A (13). A typical two-week Yokota TWCF schedule from Appendix A is shown in Table 5.

Table 5. Yokota TWCF Aircraft Demand January

	March 200														Weekday Commit
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
AC1									YE		YC		YD		100%
AC2	YA	YE													100%
AC3													74		100%
AC4	74	YB			MO										80%
AC5			YC			YD	YA								40%
AC6								#							30%

The Channel missions, medium gray, are designated as YA, YB, YC, YD, YE, Micronesia (MO) and 7451/7452 (74) missions all of which were flown as one to two day frequency Channels originating from Yokota up until 1 April 2000. After 1 April 2000, the YA-YE Channels were redesignated and are now flown as one-day requirements Channels. The Repatriation missions, dark gray, are the largest requirement as crews deploy to Thailand for 10 to 20 days at a time. The SAAM missions, light gray, range from a day to two weeks; the highest requirement in March was due to a presidential Theater visit. The “#” symbol indicates the start of a new mission. An Exercise example is not included in Table 5, as the only Exercise occurred in February.

The left side of the table indicates the six aircraft available each day for TWCF tasking at Yokota: three Yokota aircraft and three SHOGUN aircraft. The right side of the Table indicates the percentage of times that the corresponding number of aircraft were committed on weekdays for TWCF missions. Appendix A depicts aircraft demand and not necessarily crew demand for the period. The distinction is made because crew rest was not considered when assigning the aircraft to the scheduled missions. This factor is relatively insignificant, however, since Yokota has multiple crews to assign to each aircraft and there are four SHOGUN crews for three aircraft. Nonetheless, Appendix A illustrates that six aircraft are required at times to meet the TWCF demand at Yokota.

It is this high TWCF requirement that makes the Yokota C-130 squadron an attractive airland only candidate. The requirement for six allocated TWCF aircraft at Yokota matches up with the six aircraft the 36th generates each day for TWCF, JA/ATT and/or training missions. Yokota, even as an airland only squadron, would have to assign

all six of its generated aircraft to TWCF missions to match the current capability of the combined Yokota and Elmendorf aircraft. Additionally, there is evidence that the current capability of six TWCF aircraft at Yokota may not always satisfy the demand. The AMOCC recently provided the following answer to this Pacific Command (PACOM) question, “How many C-130 missions were non-supported over the last 6 months due to lack of available lift?”

From August through November 99 a total of 31 channels were cancelled due to lack of aircraft. Additionally, PACAF was only able to support approximately 3 of 15 requested foal eagle redeployment missions. There may be many other potential missions, which were non-supported. The AMOCC receives many inquiries on aircraft availability, but quite often an actual tasking is never given if no aircraft are available during the desired movement timeframe (25).

This answer further emphasizes the heavy demand for TWCF missions in Theater. The requirement is so high at Yokota that the PACAF currently deploys aircraft year round to meet the demand. This certainly provides evidence that there is sufficient number of missions available to justify an airland only squadron at Yokota. Additionally, the current SHOGUN commitment could be reduced if Yokota is requalified and able to fill the TWCF requirements. While a reduction in TWCF requirements could potentially reduce the three aircraft SHOGUN requirement, the SHOGUN crews are also the prime candidates for filling the remaining Yokota JA/ATT requirements.

Pacific JA/ATT Requirements

While requalifying Yokota crews to airland only provides more aircraft to accomplish TWCF missions it does risk PACAF’s ability to meet the JA/ATT

requirement. In FY99, every Yokota JA/ATT mission required an airdrop qualified crew, which Yokota could no longer fill as an airland only squadron. Requiring another unit to fill the tasking will only increase its OPSTEMPO. This eventuality is a strong obstacle to any Yokota requalification, as any decision that increases OPSTEMPO in today's AF is avoided if at all possible. The best alternative is to task the SHOGUN C-130s to accomplish the JA/ATTs, while Yokota accomplishes their TWCF requirements. In this case, Elmendorf's OPSTEMPO does not increase and could even decrease if less than three aircraft are required to accomplish any future JA/ATT requirements.

In attempting to estimate future JA/ATT requirements, Yokota's FY99 JA/ATT schedule is assumed to be a fair estimate of the future demand and mix of missions. Yokota's FY99 JA/ATT schedule is included in Appendix B and is broken down by Fiscal Quarter (27). Table 6 provides the Yokota JA/ATT schedule for October and is representative of the other entries in Appendix B.

Table 6. Yokota October JA/ATT Schedule

DEPLOY	EXE/REDP	RON	USER	JA/ATT	#AC	#CRW	TOT	EVENTS	DZ
30-Sep	1-2 Oct	RODN	1/1 SFG	Y401	2	2	O700	S/L x 300	Pyle
	5 Oct	RODN	18 TRANS	Y801	1	1	1330	HE, CDS	Pyle
	6-7 Oct	RODN	33 RQS	Y802	1	1	1000	RAMZ, S/L, HALO	White Beach
	13 Oct	PGUA	EODMU	Y501	1	1	O900	HALO, S/L	TBD
	13 Oct	RODN	33 RQS	Y803	1	1	2000	HALO, S/L	White Beach
14 Oct	15-16 Oct	RODN	1/1 SFG	Y402	2	2	O700	S/L x 160	Pyle
	20 Oct	PGUA	EODMU	Y502	1	1	O900	HALO, S/L	TBD
	22-23 Oct	RKTN	4 QM		2	2	1200	S/L, CDS	Rigger
	27 Oct	PGUA	EODMU	Y503	1	1	O900	HALO, S/L	TBD
	28-29 Oct	RODN	18 TRANS	Y804	2	2	1330	HE, CDS	Pyle
	30 Oct	RODN	1/1 SFG	Y403	2	2	O700	S/L X 160	Pyle

The JA/ATT missions are broken down into deployment and execution dates, location, user, number of aircraft, number of crews, type drop and drop zone for each JA/ATT mission. In total, Yokota C-130s flew 565 hours and accomplished 102 JA/ATT

missions for the year. The JA/ATT users for all 102 mission consisted primarily of six organizations: 1/1 Special Forces Group (SFG), Special Forces Detachment – Korea (SFD-K), Explosive Ordnance Disposal Mobile Unit 5 (EODMU 5), 4th Quartermasters (QM), 33rd Rescue Squadron (RQS) and the 18th Transportation (TRANS) Squadron. These six users account for all 102 JA/AT missions except one and will be the focus of the remainder of the chapter. Table 7 below breaks out the number of missions, days, aircraft, crews and typical mission profile for each user (27).

Table 7. Yokota User JA/ATT Requirement for FY 99

User	Number Required				Typical Mission Requirement
	JA/ATTs	Days*	Aircraft	Crews	
1/1 SFG	21	18/36	36	38	S/L 80-300
EODMU 5	27	0/27	27	27	S/L, HALO
4 QM	11**	4/25	21	21	S/L, CDS
SFD-K	8	3/16	9	9	HALO
33 RQS	17	0/19	20	22	RAMZ, S/L, HALO
18 TRANS	17	2/26	31	33	HE, CDS
TOTAL	101	27/149	144	150	
*The Days column is divided into days required to deploy/days required to execute the mission					
**The 4 combined 4 QM and SFD-K missions are only included in the 4 QM row					

It is these requirements and mission ratios that are the basis for estimating future JA/ATT requirements in theater.

The 18th TRANS missions must be addressed prior to making any estimates of future JA/ATT requirements. 18th TRANS provides the majority of actual Heavy Equipment (HE) and Container Delivery System (CDS) airdrop training for Yokota crews. 18th TRANS builds the HE and CDS loads and provides them to Yokota crews to accomplish their airdrop training. While 18th TRANS is the JA/ATT user on these missions, they do not have a requirement to build and drop the HE and CDS loads. In

other words, all of the 18th TRANS JA/ATT missions would not exist, if the Yokota actual HE and CDS airdrop training requirements were eliminated (22). This is a significant change, since eliminating the 18th TRANS requirements reduces future required JA/ATT execution days by 17% and aircraft and aircrew requirements by 22%. Accordingly, only the requirements for the other five users will be considered in determining the number of aircraft necessary to meet future JA/ATT requirements.

The highest aircraft requirement for any JA/ATT mission in FY99 was two. Therefore, PACAF can provide the same level of service to future JA/ATT customers with two aircraft. When the 18th TRANS missions are eliminated, the total JA/ATT missions are reduced from 101 to 84. The 84 JA/ATT missions, including deployment days only accounts for 148 days of the year. This equates to a 41% commitment rate (148/365) for one aircraft the entire year. In determining a two aircraft requirement, only 29 of the 84 missions or 66 of the 148 deployment and execution days required two aircraft. This equates to an 18% commitment rate (66/365) for a second aircraft during the year.

Using the SHOGUN aircraft to fill the JA/ATT requirements, one of the three aircraft would not be required to deploy to Yokota, while the other two aircraft would each have approximately a 30% commitment rate (214/730) for the year. The 30% commitment rate would only apply to the JA/ATT requirements, as the aircraft could be tasked to accomplish TWCF requirements when there were no JA/ATT missions. This provides the AMOCC with more aircraft to meet the TWCF demand. The availability could range from approximately 70% (516/730) of the year if the aircraft were flown everyday of the year. A more realistic estimate is 50% (370/730) of the year using the

previous 80% commitment rate for SHOGUN aircraft. The total number of aircraft available for taskings would depend on how many of Yokota's aircraft are dedicated to training, and if the third SHOGUN aircraft continues to deploy to Yokota. The number of aircraft needed for training will ultimately determine how many of Yokota's aircraft are available for TWCF tasking each day.

IV. Training Requirements

Introduction

This chapter examines the impact requalifying Yokota as airland only has on training requirements. The chapter also investigates whether or not Yokota needs to fence training aircraft to accomplish the resulting training requirements. The decision to fence aircraft is important because it affects the number of aircraft available to fly other peacetime requirements. If Yokota has to fence one of the six aircraft it generates each day for training, only five aircraft will be available to fly other requirements. In order to determine if Yokota needs to fence training aircraft, the number of training requirements Yokota needs to fly each year must be determined. Training requirements are predicated on the qualifications of the crews, therefore, this chapter begins by establishing the qualifications an airland only squadron should maintain.

Once the qualifications are established, AFI 11-2C-130V1 specifies the number of training requirements that must to be accomplished each semi-annual period. These events are then entered into a flying hour model to approximate the number of flying hours required to accomplish the training. While flying hour models differ between commands, the PACAF flying hour model will be used for estimating the flying hours necessary to complete Yokota's airland only training requirements. After estimating the flying hour requirement, the chapter examines how fencing aircraft affects the number of aircraft available to meet peacetime requirements. Finally, the chapter determines whether or not Yokota needs to fence aircraft for training.

Airland Qualifications and Training Requirements

Crew qualifications are the basis for all training requirements. Crew qualifications for an airland only squadron, like all qualifications, need to be based on wartime requirements. Fortunately, the TT, in researching the C-130 wartime requirements, recommended a basic toolkit of skills for C-130 airland only crews, refer back to Table 1. The TT recommends that airland only crews remain qualified in basic airland operations, assault zone operations, defensive system operations, all hour and all weather low-level operations, night vision goggle operations, random landing zone approaches and combat and engine-running onload and offload procedures. As these qualifications are tailored to the wartime operating and threat environment, they provide a solid basis from which to establish Yokota's airland only training requirements. In reviewing each qualification, the training requirements listed AFI 11-2C-130V1 for airdrop and airland crews should remain unchanged for airland only crews, with the only changes affecting the low-level operations.

The basic and all weather low-level operation training requirements should be redefined to better reflect the airland only mission. Currently, C-17 crews have a Direct Delivery sortie training requirement. A Direct Delivery sortie requires the crew to fly a low-level route to an ingress and landing at a small austere field (10:62). The inclusion of the ingress and landing at the small austere field more accurately reflects potential mission taskings for airland only crews. Therefore, it is recommended that current C-130 low-level route training requirements be replaced by the Direct Delivery sorties. While the paper recommends that the low-level requirement be redefined, it does not recommend reducing the number of times airland only crews fly low-level routes each

semi-annual period. This maintains consistency across airlift weapon systems, as C-17 airdrop and airland only crews fly the same number of low-level routes per quarter (10:23). The only other recommended change is the elimination of the all weather, Instrument Meteorological Condition (IMC), low-level training requirement for airland only crews.

AFI 11-2C-130V1 dictates that airdrop crews must fly IMC low-level training routes, designated Station Keeping Equipment (SKE) routes, to remain current and qualified in IMC low-level operations. Airdrop crews fly the SKE routes to maintain proficiency in flying IMC formation and airdrop procedures. In contrast, airland only crews do not need to maintain proficiency in IMC formation procedures. An IMC low-level route for an airland only crew is simply an IMC route to an instrument approach and landing. As a result, the approach requirements already present in the proficiency training requirements are sufficient to keep crews current and qualified for IMC routes, approaches and landings. The TT also used this same line of reasoning when they eliminated the SKE route requirement to calculate the savings generated by the reduced training requirements for airland only crews (2:15). Accordingly, this paper also recommends that the SKE route training requirements be eliminated for airland only crews.

No changes were actually made to the TT's recommended basic toolkit of qualifications. The recommended changes only affect the training requirements for low-level operations. The crews would still be qualified to fly low-level routes; the training requirement has just been replaced by the Direct Delivery sorties. Further, eliminating the SKE route training does not mean the airland only crews are no longer qualified to fly

all weather low-level routes. The crews just maintain proficiency through other existing training requirements. For all the other toolkit qualifications, the training requirements remain unchanged from the current requirements in AFI11-2C-130V1. The next step in this process is to determine the number of flying hours necessary to maintain Yokota's airland qualifications.

Flying Hour Requirements

C-130 squadrons spend a significant amount of their flying time accomplishing training missions each year. In fact, training missions accounted for 48% of Yokota's FY99 total flying hour program or 2,699.4 of the 5674.9 hours. In order to provide each squadron with a sufficient number of hours to complete its training each year, PACAF and the other major commands use flying hour models to estimate flying hour training requirements. These estimate are then compared to the number of hours each squadron or wing requests each year for training. The PACAF flying hour model, estimating the number of hours necessary to keep Yokota 100% formation airdrop and airland qualified is included in Appendix C (19:1).

The model calculates the annual flying hours to complete the training requirement listed in AFI 11-2C-130V1 according to the crew qualifications. The training events listed in the model are the current flying requirements AFI 11-2C-130V1 dictates Yokota must accomplish to remain 100% formation airdrop and airland qualified. Table 8 is an excerpt from Appendix C of the visual low-level operations flying hour requirements for pilots at Yokota.

Table 8. Yokota Visual Low-Level Flying Hour Requirement

VISUAL LOW LEVEL (VLL) OPERATIONS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAY VLL SORTIES RPI 1 x 1.2 x 4 x 1.1	95	95	95	95	95	95	95	95
STAFF RPI 6 x 1.2 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 4 x 1.1	5	5	5	5	5	5	5	5
NIGHT VLL SORTIES RPI 1 x 1.2 x 8 x 1.1	190	190	190	190	190	190	190	190
STAFF RPI 6 x 1.2 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 4 x 1.1	5	5	5	5	5	5	5	5
SUBTOTAL	359	359	359	359	359	359	359	359

As Table 8 indicates, the model estimates that Yokota pilots will need 359 hours to complete their VLL operations training requirements. Using the first line of Table 8 as an example, the model estimates the annual flying hour requirement for each training event as the product of the following factors:

1. Number of crewmembers required to accomplish each event (Yokota has 18 Rated Position Indicator (RPI) 1 pilots).
2. Event time – a flying hour model estimate of the amount of time it should take a crewmember to accomplish each training event (1.2 hours for a day VLL sortie).
3. Event requirement - AFI 11-2C-130V1 dictates the number of times each training event must be accomplished each year (4 for a day VLL sortie).
4. 1.1 factor – this factor is added to account for maintenance, weather and other delays that can occur during training (1).

The model multiplies all of the factors together, (18 x 1.2 x 4 x 1.1) which provides the 95 hour estimate for RPI 1 pilots to complete their annual day VLL training requirement. Additionally, the model separates the training events into proficiency training, which is airland training, and mission training, which is predominately airdrop training. The flying hours for proficiency and mission training are then totaled to provide a total training hour requirement on the Training Events Total (TET) line of the model. This is

the model's estimate for the number of training hours necessary to keep the crews qualified, if all the training were accomplished strictly on training missions.

Crews can accomplish some of their training events on non-training missions. In order to take this into account, the model reduces the TET estimate by subtracting a percentage of the training hours that can be accomplished on TWCF, JA/ATT and Exercise missions. The exact number of hours eliminated from the TET estimate and credited to the other peacetime missions is included in the Local Training section of the model. Table 9 provides the TET estimate and Local Training section of the flying hour model included in Appendix C.

Table 9. Yokota Training Flying Hour Model Estimate

TRAINING EVENT TOTAL (TET)	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593
LOCAL TRAINING								
LOCAL TRAINING	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
PROFICIENCY TRAINING TOTAL	1,371	1,371	1,371	1,371	1,371	1,371	1,371	1,371
LESS OPER CREDIT (TWCF)	-304	-304	-304	-304	-304	-304	-304	-304
LOCAL PROFICIENCY TRAINING TOTAL	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067
MISSION TRAINING TOTAL	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222
LESS JA/ATT CREDIT	-315	-315	-315	-315	-315	-315	-315	-315
LESS RED FLAG/COPE THUNDER CREDIT	-11	-11	-11	-11	-11	-11	-11	-11
LOCAL MISSION TRAINING TOTAL	896	896	896	896	896	896	896	896
LOCAL TRAINING TOTAL (LTT)	1,963	1,963	1,963	1,963	1,963	1,963	1,963	1,963

The Local Training section provides a revised training flying hour estimate on the Local Training Total (LTT) line after subtracting TWCF, JA/ATT and Exercise credits from the TET. The TWCF credits in the PACAF model are the result of 50% of the navigator training events being accomplished on TWCF missions. The navigator training flying hour estimate was 607 hours; consequently, the model credited 304 of those hours to TWCF missions. Similarly, 25% of the estimated JA/ATT and Exercise hours are

credited, as crews can accomplish airdrop-training requirements on these missions. These credits are simply assumptions PACAF puts in the model; the amount of credits is the major difference between models in each command (2:12). While the LTT estimate does take into consideration that training requirements can be accomplished on other missions, the TET seems to provide a more accurate estimate of the a unit's training flying hours.

For example, in FY99 PACAF's flying hour model TET estimate for Yokota was 2,593 hours and 3,785 hours for Elmendorf. After taking the TWCF, JA/ATT and Exercise credits, the LTT estimate was 1,963 hours for Yokota and 2,835 hours for Elmendorf. Yokota actually flew 2,699.4 hours of training, while Elmendorf had 3,869.4 hours of flying training (18:1). Clearly, the TET estimate was a more accurate than the LTT. Additionally, the TET is a more conservative estimate for determining whether or not Yokota needs to fence training aircraft. If Yokota can accomplish the training requirements without fencing aircraft using the TET estimate, it could definitely accomplish the training requirements without fencing aircraft if the LTT estimate proves to be more accurate. As a result, this paper assumes that the TET is a more accurate estimate of the training flying hours a squadron needs each year. It is this estimate that the paper uses as the number of hours necessary to maintain Yokota's airland only qualifications.

In reviewing the qualifications established in the previous section, the PACAF flying hour model, based on the AFI 11-2C-130V1, does not assign flying hours to the defensive system operations, night vision goggle operations and combat onload and offload operations. The model only assigns flying hours to the basic airland operations,

assault zone operations, low-level operations and random landing zone approaches.

Consequently, these qualifications are the focus for determining the number of training flying hours. A new PACAF flying hour model for Yokota as an airland only squadron is included in Appendix D. As the model indicates, there are no changes in the number of proficiency training hours necessary to keep the crews airland only qualified. All of the changes occur in the mission training section, Table 10, which is the airdrop section of the model.

Table 10. Yokota Airland Only Mission Training Requirements

MISSION TRAINING								
	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
VISUAL LOW LEVEL (VLL) OPERATIONS								
DAY DD SORTIES RPI 1 x 1.2 x 4 x 1.1	95	95	95	95	95	95	95	95
STAFF RPI 6 x 1.2 x 2 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 2 x 1.1	5	5	5	5	5	5	5	5
NIGHT DD SORTIES RPI 1 x 1.2 x 8 x 1.1	190	190	190	190	190	190	190	190
STAFF RPI 6 x 1.2 x 2 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 2 x 1.1	5	5	5	5	5	5	5	5
SUBTOTAL	359	359	359	359	359	359	359	359
SKE OPERATIONS								
SKE LEAD/WING SORTIES	0	0	0	0	0	0	0	0
STAFF RPI 6 SKE SORTIES	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0
RECOVERY EVENTS								
FORMATION VISUAL RPI 1 x 0.4 x 12 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 6 x 0.4 x 4 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 8 x 0.4 x 4 x 1.1	0	0	0	0	0	0	0	0
FORMATION AWADS/SKE RPI 1 x 0.5 x 12 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 6 x 0.5 x 6 x 1.1	0	0	0	0	0	0	0	0
RANDOM STEEP/SHALLOW RPI 1 x 0.4 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 6 x 0.4 x 4 x 1.1	21	21	21	21	21	21	21	21
STAFF RPI 8 x 0.4 x 4 x 1.1	4	4	4	4	4	4	4	4
SUBTOTAL	57	57	57	57	57	57	57	57
LEAD UPGRADE								
LEAD UPGRADE HOURS	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0
MISSION TRAINING TOTAL	416	416	416	416	416	416	416	416
TRAINING EVENTS TOTAL (TET)	1,787	1,787	1,787	1,787	1,787	1,787	1,787	1,787

The first mission training change is to simply rename the Visual Low Level Operations section from VLL sorties to DD sorties (the hours do not change). Next, the SKE operations flying hour requirements are eliminated, as indicated by the zero flying hour requirements. The recovery events are also adjusted to include only the Random Steep/Shallow events. This satisfies the random landing zone approach qualifications, and the formation recoveries are not required for airland only crews. Finally, the Lead Upgrade requirements are also eliminated as airland only crews do not need to accomplish formation upgrade training. Incorporating all these changes, the TET estimate for the training flying hours necessary to accomplish the training requirements for Yokota as an airland only squadron is 1,787 hours.

This is a reduction of 806 hours from the previous 2,593 hours required to keep Yokota 100% formation airdrop and airland qualified. While calculating saving is not a primary focus of this paper, using the PACAF O&M flying hour rate of \$2,023/hour this equates to an annual savings of 1.63 million (20). While not a significant saving, it does allow PACAF to meet all of the wartime and peacetime requirements in a more cost-effective manner. The final determination is whether or not Yokota needs to fence an aircraft to accomplish the 1,787 hours of training. In order to understand the impact of this decision, the next section first examines how fencing aircraft impacts the number of aircraft available to accomplish other peacetime requirements.

PACAF Aircraft Availability

The decision to fence aircraft affects the number of aircraft available to accomplish other peacetime requirements. Yokota is required to generate six aircraft

each day, if one of those aircraft is fenced for training it is not available for other taskings. Table 11 uses three scenarios to compare the availability of aircraft for peacetime requirements. The first scenario is the current availability of aircraft with Yokota 100% formation airdrop and airland qualified. The second and third scenarios are the availability of aircraft with Yokota requalified as airland only. Scenario two requires Yokota to fence one aircraft for training. Scenario three does not require Yokota to fence aircraft for training.

Table 11. PACAF C-130 Aircraft Availability

Scenario	Base	Generated	TWCF	JA/ATT/Training
Current	Elmendorf	10	3/3	4
	Yokota	6	3	3
	Total	16	9	7
Fenced Trainer	Elmendorf	10	3/1	4/2
	Yokota	6	5.5*	1
	Total	16	9.5	7
No Fenced Trainer	Elmendorf	10	4	4/2
	Yokota	6	6.5*	0**
	Total	16	10.5	6
Notes: The Elmendorf aircraft allocation: home station/deployed to Yokota *The .5 results from using SHOGUN aircraft 50% of the time to fly TWCF **Scenario 2 Yokota would just use non-tasked TWCF aircraft for training				

In all three scenarios, the two active duty squadrons still generate 16 aircraft each day. More importantly, at least six aircraft are available at Yokota to fly TWCF missions in all three scenarios. This is important because it emphasizes the fact that requalifying Yokota to airland only does not decrease PACAF's current ability to meet TWCF peacetime requirements even if Yokota needs to fence one aircraft for training. In fact, in scenarios two and three, the aircraft available to fly TWCF requirements at Yokota actually increases to 6.5. The .5 increase comes from PACAF's ability to task the SHOGUN

aircraft to fly TWCF missions when they are not accomplishing JA/ATT requirements. Using the OPORD commitment rate of 80%, chapter three estimated that the SHOGUN aircraft could be tasked 50% of the time to accomplish TWCF missions. So, what is the impact of fencing aircraft at Yokota for training?

Fencing aircraft does increase aircraft available for TWCF tasking at Yokota by .5 above the current capabilities, but it still requires Elmendorf to deploy all three of its aircraft. If Yokota is not required to fence aircraft for training, the aircraft available in theater for TWCF tasking increases by 1.5 and only two of Elmendorf's aircraft are required to deploy to Yokota. While both scenarios increase PACAF's capabilities, scenario three allows PACAF to increase its capability to meet peacetime requirements by a full aircraft. At the same time, scenario three allows PACAF to reduce the OPTEMPO of the Elmendorf squadron. PACAF could also realize additional savings from not having to pay to deploy the aircraft and crew to Yokota for the year. Obviously, PACAF benefits if Yokota can accomplish all of its training requirements without fencing aircraft for training, therefore, the following section determines if Yokota needs to fence aircraft for training.

Fencing Training Aircraft

The decision to fence aircraft is based on whether or not Yokota can accomplish all of its training on aircraft not tasked for TWCF missions. Currently, PACAF tasks the six aircraft, three Yokota and three Elmendorf, at Yokota to accomplish TWCF missions. Using the historical commitment rates of these aircraft, an estimate of the commitment rates for Yokota's six aircraft can be made. The Yokota TWCF January through April

2000 flying schedule will be used to estimate the number of aircraft available for training. Appendix A depicts the TWCF missions originating from Yokota from January to April 2000. Table 12 provides the monthly weekday commitment rate for the six TWCF aircraft at Yokota included in Appendix A. The commitment rates quantify the percentage of weekdays that the corresponding number of aircraft were tasked to fly TWCF missions. The number of aircraft available for training is simply the percentage of aircraft not committed to fly TWCF missions. Therefore, Table 12 extrapolates these commitment rates to estimate the weekday availability of training aircraft for an entire year. The estimate is the number of aircraft available for training each year.

Table 12. Aircraft TWCF Commitment and Training Availability

TWCF Aircraft Weekday Commitment					Training Aircraft Availability	
Aircraft	January	February	March	April	Jan-Apr	April
6	100%	100%	100%	95%	1%	5%
5	100%	95.24%	100%	80%	6%	20%
4	100%	76.19%	100%	70%	14%	30%
3	66.67%	61.90%	73.91%	50%	37%	50%
2	33.33%	0%	52.17%	25%	72%	75%
1	14.28%	0%	26.08%	5%	92%	95%
				Estimate	555/year	687/year

Table 12 actually provides two estimates of aircraft available for training; one is based on the full four months of data, while the second is based only on the April 2000 data. The distinction is made because after 1 April 2000, the majority of the Channel missions were scheduled as requirements out and backs instead of two-day frequency Channels; reducing the overall TWCF aircraft demand.

When examining the four-month data, Table 12 estimates that 555 aircraft will be available for training each year. Assuming 250 weekdays in a year, this equates to each

aircraft flying a 3.2-hour sortie to complete the necessary 1,787 hours of training. Table 12 also indicates that scheduling the Channel missions as requirements instead of frequencies could increase the number of aircraft available for training by 130 aircraft. This would reduce the sortie flying hour requirement to only 2.6- hours per aircraft. While a decision can not be based on one month's worth of data, the April data indicates that the new TWCF schedule could result in more aircraft being available for training. Nevertheless, even using the four-month data estimate, Yokota is only required to fly a realistic 3.2-hour sortie for each aircraft. As a result, Yokota does not need to fence aircraft to accomplish its training requirements. Still, some commanders like the assurance that at least one aircraft is available each day for training.

Table 12 illustrates that without fencing an aircraft for training, the Yokota squadron commander will not have an aircraft available for training 8% of the time. As a result, the commander will not have an aircraft available for training on 20 of the 250 training days each year. The squadron commander can, however, ensure that at least one aircraft is available each day for training, by simply generating a seventh aircraft when the other six are required for TWCF missions. Yokota did just this on several occasions during the January to April 2000 timeframe (13). In fact, Yokota generated a total of 45 aircraft above the six aircraft requirement in the 85 weekdays examined. In that same period, six aircraft were required for TWCF missions on only seven of the 85 days. In effect, Yokota could have one aircraft available for training every weekday, if it generated an extra aircraft on each of those seven days. The extra seven aircraft generated is still significantly less than the 45 the squadron already generated on its own during the same time period. Generating the seventh aircraft is not necessary to

accomplish Yokota training requirements, but it does provide the squadron commander with the assurance that an aircraft could be available each day for training. Additionally, the ability to generate a seventh aircraft provides the squadron with at least one aircraft to accomplish training on each day while still allowing PACAF to reap the benefits of not having to fence aircraft for training.

V. Summary and Conclusions

AMC's desire to provide better management and integrated solutions to chronic problems in the C-130 force provided the impetus for a thorough review of C-130 requirements. A shrinking number of aircraft available for peacetime taskings provided a particular interest in the final recommendations for C-130 crew qualifications. In the end, the final report recommended maintaining the status quo, active duty, Guard and Reserve crews 100% formation airdrop and airland qualified. In order to reexamine this issue, the paper analyzed the feasibility and impact of requalifying the Yokota C-130 squadron as airland only. Similar to the TT's research, the paper examined the impact of requalifying crews on wartime, peacetime, and training requirements. The following sections address the impact in each of these area as well as recommending future areas for investigation.

Wartime Requirements

In determining C-130 wartime requirements, the discussion focused on the research and conclusions of the *C-130 Tiger Team Final Report*. The TT found that defining C-130 wartime requirements was extremely difficult due to the poorly defined requirements in the OPLANs. The TT's task was further hampered by the lack of documented airdrop requirements. Ultimately, the TT had to define the wartime requirements by combining documented requirements, primarily from the ILA, with its own research and assumptions. These requirements were then compared to four qualification options and a determination was made that keeping the C-130s 100% formation airdrop and airland qualified was the most success-oriented option.

While examining the different qualification options, the TT determined that fencing crews as airland only was infeasible. This was based on an inability to meet the 80% single-ship airdrop requirement, due to line crew shortages and conversion requirements. New information on line crew manning, however, indicates that approximately 6% of the force can be requalified to airland only without affecting the airdrop requirement. Yokota's C-130 squadron, consisting of only ten aircraft, accounts for less than 6% of the total number of aircraft necessary to carry out the OPLANS. Therefore, it was proposed that the Pacific CINC could still effectively and efficiently execute the OPLAN with Yokota requalified as airland only. Consequently, it was determined that it is feasible to requalify the Yokota C-130 squadron as airland only without affecting the CINC's ability to meet wartime requirements.

TWCF and JA/ATT Peacetime Requirements

There is a high peacetime demand for C-130s to accomplish both TWCF and JA/ATT missions. While wartime requirements tailor the force, the peacetime requirements are a consideration when changing a unit's qualifications. Currently, a high demand for TWCF missions originating from Yokota AB exists in theater. To meet this demand, Elmendorf deploys three of its six TWCF available aircraft to Yokota for the entire year. Still, PACAF cannot meet all the TWCF requirements originating from Yokota. This strong demand provides evidence that there are enough TWCF requirements at Yokota to justify an airland only squadron. Additionally, the Elmendorf aircraft could be used to fill Yokota's JA/ATT requirement.

Yokota's FY99 JA/ATT requirements were the basis for determining future JA/ATT demands. Prior to totaling future demand, all of the 18th TRANS missions were eliminated since they no longer had a JA/ATT requirement without Yokota's training requirements. After reviewing the Yokota JA/ATT requirements, it was determined that future JA/ATT requirements could be met by two SHOGUN aircraft each having approximately a 30% commitment rate for the year. While these aircraft are not accomplishing JA/ATT requirements they could be tasked to pickup additional TWCF missions or provide a higher level of support to JA/ATT users. Regardless, airland only Yokota crews and two of the three Elmendorf SHOGUN aircraft can easily meet all future TWCF and JA/ATT requirement if Yokota is requalified to airland only.

Training Requirements

Annual training requirements are dependent on crew qualifications. As stressed throughout this paper, the C-130 force needs to be tailored to match wartime requirements. In researching wartime requirements, the TT recommended a basic toolkit of skills C-130 crews should possess. The final Yokota airland only qualifications exactly mirrored those recommended by the TT. The only changes were the elimination of the SKE route requirements and redefining the low-level route requirement as a Direct Delivery sortie similar to C-17 crews. In converting these training requirements into flying hours using the PACAF flying hour model, a training hour requirement of 1,787 hours was estimated.

This flying hour estimate was then used to determine if Yokota needed to fence one of the six aircraft it generated each day for training. After estimating the availability

of aircraft not tasked to accomplish TWCF missions, it was determined that Yokota did not need to fence aircraft to complete its 1,1787 hours of training requirements. As a result, PACAF has increased its capability the fly TWCF peacetime requirements by 1.5 aircraft by requalifying Yokota as airland only. At the same time, PACAF could realize savings by not having to pay to deploy the third aircraft and crew to deploy to Yokota each year.

Yokota's Airland Only Feasibility

The feasibility of requalifying the Yokota C-130 squadron was dependent on its impact on PACAF's ability to still meet its wartime, peacetime and training requirements. As the previous discussion summarizes, PACAF can still meet all of its requirements with Yokota as an airland only squadron. In fact, PACAF's ability to meet TWCF peacetime requirements actually increases by 1.5 aircraft, if Yokota is requalified to an airland only squadron. Additionally, the reduction in training and deployment requirements results in saving in excess of \$1.6 million each year. Therefore, requalifying Yokota as airland only is actually more effective and efficient for PACAF in meeting peacetime requirements. More importantly, this increase in peacetime capabilities does not risk the CINC's ability to effectively execute the OPLAN. Ultimately, this research indicated that AMC should revisit the necessary qualifications for C-130 units. A change in qualifications could increase the C-130s ability to meet peacetime requirements at lower costs without reducing its ability to meet wartime requirements. Still, some areas need be investigative further in order to make an even more informed decision.

Future Areas for Investigation

The most obvious area for more investigation concerns wartime requirements. The AF and Joint leadership needs to press the theater CINCs to better define their C-130 wartime requirement. This is especially true in defining theater airdrop requirements. A definitive single-ship airdrop requirement would allow an effective qualification-tailoring decision to be made. A second area of investigation concerns the JA/ATT requirements. If JA/ATT requirements could be further reduced the requirement for Elmendorf to deploy two aircraft could be reduced even further. Along those same lines, the impact of Elmendorf accomplishing more JA/ATT missions and less TWCF missions must be examined. Third, a more accurate estimate of the flying hours necessary to accomplish the airland only qualifications would make the tailoring decision more definitive. Finally, the crew force morale concerns raised in the non-quantifiable section of chapter two must be addressed prior to any change in qualifications to ensure a smooth transition.

Appendix A: Yokota TWCF Aircraft Demand January – April 2000

	January 2000																															Weekday Commit
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
AC1														YE			74		YA		YC											100%
AC2			YD		YA	YE																								YD		100%
AC3			74		YB		YC			#				YC																74		100%
AC4			#		#					YD		YB		YC			YD		YB				MO									66.67%
AC5			#							74		YA														YA	YE					33.33%
AC6																									YB		YC					14.28%
	February 2000																															Weekday Commit
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29			
AC1														YD		YB																100%
AC2	YD	YA	YE											74			#											YD				95.24%
AC3		YB		YC			YD		YA	YE							YE		YC		YD		#			#						76.19%
AC4		74					74		YB		YC										74				YE			74				61.90%
AC5																																0%
AC6																																0%
	March 200																															Weekday Commit
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
AC1									YE		YC		YD		YA	YE		#														100%
AC2	YA	YE																								YD		YA	YE			100%
AC3													74		YB		YC			#		#	#		YE		74		YB		YC	100%
AC4	74	YB			MO										#		#															73.91%
AC5			YC			YD		YA									#															52.17%
AC6								#													#						#					26.08%
	April 200																															Weekday Commit
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
AC1										74		#	#			MO							#			#	#					95%
AC2										#			#																			80%
AC3			74			#	#			#							74		#					74		#	#					70%
AC4						#	#											#	#				74		#	#						50%
AC5						#	#													#							#	#				25%
AC6																										#						05%

Repatriation
 Channel
 SAAM
 Exercise
 # New mission
 1 Weekend
 74, YA-YE, MO Channel ID

Appendix B: Yokota JA/ATT - Exercise – Trainer Mission Schedule

First Quarter FY 1999 October through December 1998									
DEPLOY	EXE/REDP	RON	USER	JA/ATT	#AC	#CRW	TOT	EVENTS	DZ
30-Sep	1-2 Oct	RODN	1/1 SFG	Y401	2	2	O700	S/L x 300	Pyle
	5 Oct	RODN	18 TRANS	Y801	1	1	1330	HE, CDS	Pyle
	6-7 Oct	RODN	33 RQS	Y802	1	1	1000	RAMZ, HALO	White Beach
	13 Oct	PGUA	EODMU	Y501	1	1	O900	HALO, S/L	TBD
	13 Oct	RODN	33 RQS	Y803	1	1	2000	HALO, S/L	White Beach
14 Oct	15-16 Oct	RODN	1/1 SFG	Y402	2	2	O700	S/L x 160	Pyle
	20 Oct	PGUA	EODMU	Y502	1	1	O900	HALO, S/L	TBD
	22-23 Oct	RKTN	4 QM		2	2	1200	S/L, CDS	Rigger
	27 Oct	PGUA	EODMU	Y503	1	1	O900	HALO, S/L	TBD
	28-29 Oct	RODN	18 TRANS	Y804	2	2	1330	HE, CDS	Pyle
	30 Oct	RODN	1/1 SFG	Y403	2	2	O700	S/L X 160	Pyle
	3 Nov	PGUA	EODMU	Y504	1	1	O900	HALO, S/L	TBD
	4-5 Nov	RKTN	4 QM		2	2	1200	S/L, CDS	Rigger
	9 Nov	RODN	18 TRANS	Y805	2	2	1330	HE, CDS	Pyle
	10 Nov	RODN	33 RQS	Y806	1	1	2000	HALO, S/L	Pyle
	10 Nov	PGUA	EODMU	Y505	1	1	O900	HALO, S/L	TBD
	18-19 Nov	RKSO	SFD-K	Y301	1	1	1600	HALO X 30	Kumsong
23-Nov	24-25 Nov	RODN	1/1 SFG	Y404	2	2	O700	S/L x 160	Pyle
	24 Nov	PGUA	EODMU	Y506	1	1	O900	HALO, S/L	TBD
	1 Dec	PGUA	EODMU	Y507	1	1	O900	HALO, S/L	TBD
	2-3 Dec	RKSO	4 QM	Y302	2	2	1200	S/L, CDS	Rigger
	4 Dec	RKSO	SFD-K	Y302	1	1	1500	HALO X 30	Gak Dong
	8 Dec	PGUA	EODMU	Y508	1	1	O900	HALO, S/L	TBD
	9-10 Dec	RODN	33 RQS	Y808	1	1	O900	S/L, HALO	White Beach
14-Dec	15-16 Dec	RODN	1/1 SFG	Y405	2	2	O700	S/L x 160	Pyle
28-Dec	29-30 Dec	RODN	1/1 SFG	Y406	2	2	O700	S/L x 160	Pyle

Appendix B: Yokota JA/ATT – Exercise – Trainer Mission Schedule (continued)

Second Quarter FY 1999 January through March 1999									
DEPLOY	EXE/REDP	RON	USER	JA/ATT	#AC	#CRW	TOT	EVENTS	DZ
	5 Jan	PGUA	EODMU	Y526	1	1	O900	S/L, HALO	ANDERSON
5-Jan	5-6 Jan	RODN	18 TRANS	Y826	2	4	1330	HE & CDS	PYLE
	7-8 Jan	RODN	1/1 SFG	Y426	2	4	O700	S/L x 120	PYLE
	7 Jan	RODN	33 RQS	Y827	2	4	1200	S/L, RAMZ	WHITE BEACH
	12 Jan	PGUA	EODMU	Y527	1	1	O900	S/L, HALO	ANDERSON
13-Jan	13-15 Jan	RKSO	SFD-K/4 QM	Y326	2	2	1300	HALO, CDS	MISARI
	26 Jan	PGUA	EODMU	Y528	1	1	O900	S/L, HALO	ANDERSON
27-Jan	27-29 Jan	RKSO	SFD-K/4 QM	Y327	2	2	1300	HALO, CDS	MISARI
2-Feb	3-5 Feb	PGUA	1/1 SFG	Y427-1	1	1	TBD	HALO	ANDERSON
1-Feb	2 Feb	RODN	1/1 SFG	Y427	1	1	O700	S/L x 60	PYLE
	3 Feb	RODN	18 TRANS	Y828	1	1	1330	HE & CDS	PYLE
	4 Feb	RODN	33 RQS	Y829	1	1	1200	S/L, RAMZ	WHITE BEACH
	2 Feb	PGUA	EODMU	Y529	1	1	O900	S/L, HALO	ANDERSON
10-Feb	10-12 Feb	RKSO	SFD-K4 QM	Y328	1	1	1300	HALO, CDS	MISARI
	16 Feb	PGUA	EODMU	Y530	1	1	O900	S/L, HALO	ANDERSON
17-Feb	17 Feb	RODN	18 TRANS	Y830	2	2	1330	HE & CDS	PYLE
	18 Feb	RODN	33 RQS	Y831	2	2	1200	S/L, RAMZ	WHITE BEACH
	23 Feb		SFD-K		1	1	1300	HALO x 20	MISARI
	23 Feb	PGUA	EODMU	Y531	1	1	O900	S/L, HALO	ANDERSON
1-Mar	2 Mar	RODN	1/1 SFG	Y428	2	2	O700	S/Lx 120	PYLE
	3 Mar	RODN	18 TRANS	Y832	2	2	O800	HE & CDS	PYLE
	4 Mar	RODN	33 RQS	Y833	2	2	1200	S/L, RAMZ	WHITE BEACH
	2 Mar	PGUA	EODMU	Y532	1	1	O900	S/L, HALO	ANDERSON
	9 Mar	PGUA	EODMU	Y533	1	1	O900	S/L, HALO	ANDERSON
10-Mar	10-12 Mar	RKSO	SFD-K/4 QM	Y329	2	2	1300	HALO, CDS	MISARI
	16 Mar	PGUA	EODMU	Y534	1	1	O900	S/L, HALO	ANDERSON
18-Mar	18 Mar	RODN	18 TRANS	Y834	1	1	1330	HE & CDS	PYLE
	19 Mar	RODN	33 RQS	Y835	1	1	1200	S/L, RAMZ	WHITE BEACH
	23 Mar		SFD-K		1	1	1300	HALO x 20	MISARI
30-Mar	31-1 M/A	RODN	1/1 SFG	Y429	1	1	O700	S/L x 120	PYLE
	30 Mar	PGUA	EODMU	Y535	1	1	O900	S/L, HALO	ANDERSON

Appendix B: Yokota JA/ATT - Exercise - Trainer Mission Schedule (continued)

Third Quarter FY 1999 April through June 1999									
DEPLOY	EXE/REDP	RON	USER	JA/ATT	#AC	#CRW	TOT	EVENTS	DZ
3-May	3-6 May	PGUA	4 QM	Y351	2	2	TBD	S/L, CDS	ANDERSON
	4-May	PGUA	EODMU	Y551	1	1	O900	HALO, S/L	ANDERSON
10-May	10 May	RODN	18 TRANS	Y851	2	2	1330	HE,CDS	PYLE
	11 May	RODN	33 RQS	Y852	1	1	1200	HALO, RAMZ	WHITE BEACH
	12 May	RODN	18 TRANS	Y853	2	2	O800	HE, CDS X 2	PYLE
	13 May	RODN	1/1 SFG	Y451	2	2	O700	S/L X 80	PYLE
	11 May	PGUA	EODMU	Y552	1	1	O900	HALO, S/L	ANDERSON
11-May	12-20 May	RKJK	SFD-K	Y352	1	1	MULTI	HALO	GAK DONG
	18 May	PGUA	EODMU	Y553	1	1	O900	HALO, S/L	ANDERSON
24-May	24 May	RODN	18 TRANS	Y854	2	2	1330	HE,CDS	PYLE
	25-26 May	RODN	1/1 SFG	Y452	2	2	O700	S/L X 80	PYLE
	25 May	RODN	33 RQS	Y855	1	1	1200	HALO, RAMZ	WHITE BEACH
	27 May	RODN	18 TRANS	Y856	2	2	O800	HE, CDS X 2	PYLE
	25 May	PGUA	EODMU	Y554	1	1	O900	HALO, S/L	ANDERSON
	2 Jun	RKSO	4 QM	Y353	2	2	1345	HE, CDS, S/L	RIGGER
	3 Jun	RKSO	SFD-K	Y353	2	2	1400	S/L x 200	MISARI
7-Jun	7 Jun	RODN	18 TRANS	Y857	2	2	1330	HE, CDS	PYLE
	8 Jun	RODN	33 RQS	Y858	1	1	1200	HALO, RAMZ	WHITE BEACH
	9-10 JUN	RODN	18 TRANS	Y859	2	2	1000	HE, CDS X 2	PYLE
	11 Jun	RODN	1/1 SFG	Y453	2	2	O700	S/L X 80	PYLE
	8 Jun	PGUA	EODMU	Y555	1	1	O900	HALO, S/L	ANDERSON
13-Jun	14-19	PGUA	1/1 SFG	Y454	1	1	TBD	S/L, CRRC	TBD
14-Jun	15 Jun	RKSO	SFD-K	Y354	1	1	O900	HALO	MISARI
	15 Jun	PGUA	EODMU	Y556	1	1	O900	HALO, S/L	ANDERSON
21-Jun	21 Jun	RODN	18 TRANS	Y860	2	2	1330	HE, CDS	PYLE
	22 Jun	RODN	33 RQS	Y861	1	1	1900	HALO, RAMZ	WHITE BEACH
	23 Jun	RODN	18 TRANS	Y862	2	2	1300	HE, CDS X 2	PYLE
	24 Jun	RODN	18 TRANS	Y863	2	2	O900	HE, CDS X 2	PYLE
	25 Jun	RODN	1/1 SFG	Y455	2	2	O700	S/L X 80	PYLE
	22 Jun	PGUA	EODMU	Y557	1	1	O900	HALO, S/L	ANDERSON
28-Jun	29 Jun	RKSO	SFD-K	Y355	1	1	O900	HALO	MISARI
	29 Jun	PGUA	EODMU	Y558	1	1	O900	HALO, S/L	ANDERSON

Appendix B: Yokota JA/ATT – Exercise – Trainer Mission Schedule (continued)

Fourth Quarter FY 1999 July through September 1999									
DEPLOY	EXE/REDP	RON	USER	JA/ATT	#AC	#CRW	TOT	EVENTS	DZ
2-Aug	3-4 Aug	RODN	1/1 SFG	Y476	2	2	1930	S/L X 60	PYLE
	5 Aug	RODN	33 RQS	AWM#	1	1	1200	HALO, RAMZ	WHITE BEACH
	17 Aug	RODN	33 RQS	Y876	1	1	1200	HALO, RAMZ	TSUKEN
25-Aug	25 Aug		4 QM	AWM#	2	2	1300	S/L X 80	RIGGER
29-Aug	30 Aug	RODN	1/1 SFG	Y477	2	2		S/L X 60	PYLE
	2 Sep	RODN	33 RQS	AWM#	1	1	1200	HALO, RAMZ	TSUKEN
27-Aug	28 Aug	PGUA	1/1 SFG	Y481	1	1	TBD	S/L X 10	ANDERSEN
	9-10 Sep	RODN	1/1 SFG	Y479	2	2	1930	S/L X 60	PYLE
	14 Sep	RODN	33 RQS	Y877	1	1	1200	HALO, RAMZ	WHITE BEACH
16-Sep	16 Sep	RKSO	2ID/LRSD		1	1	2000	S/L	CONG
19-Sep	20 Sep	PGUA	1/1 SFG	Y480	1	1	TBD	S/L	ANDERSON
	21 Sep	PGUA	EODMU	AWM#	1	1	O900	S/L, CRRC	APRA HARBOR
22-Sep	22 Sep		4 QM		2	2	1300	S/L X 80	RIGGER

Appendix C: Yokota C-130 Flying Hour Training Requirements

C-130 PROGRAM - YOKOTA								
AGING								
AGING REQUIREMENT	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
INEXPERIENCED PILOTS	16	16	16	16	16	16	16	16
AGING RATE	29	29	29	29	29	29	29	29
EXP HRS=INX CPsxAging Ratex12	5,568	5,568	5,568	5,568	5,568	5,568	5,568	5,568
NON-EXP HRS	369	369	369	369	369	369	369	369
PROGRAM TOTAL	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,937
SORTS TRAINING								
PROFICIENCY TRAINING								
PILOT EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
RPI 1 ACs								
1 LPS/EVALx1.7	34	34	34	34	34	34	34	34
1 LPSx1.7	34	34	34	34	34	34	34	34
10 MONTHLIESx.8	158	158	158	158	158	158	158	158
MISSION TRAINING CREDIT	-158	-158	-158	-158	-158	-158	-158	-158
STAFF ACs - RPI 6								
1 LPS/EVALx1.7	22	22	22	22	22	22	22	22
1 LPSx1.7	22	22	22	22	22	22	22	22
10 MONTHLIESx.8	106	106	106	106	106	106	106	106
MISSION TRAINING CREDIT	-106	-106	-106	-106	-106	-106	-106	-106
STAFF ACs - RPI 8								
1 LPS/EVALx1.7	4	4	4	4	4	4	4	4
1 LPSx1.7	4	4	4	4	4	4	4	4
10 MONTHLIESx.8	63	63	63	63	63	63	63	63
MISSION TRAINING CREDIT	-63	-63	-63	-63	-63	-63	-63	-63
RPI 1 CPs								
1 LPS/EVALx1.7	34	34	34	34	34	34	34	34
3 LPSx1.7	101	101	101	101	101	101	101	101
8 MONTHLIESx.8	127	127	127	127	127	127	127	127
MISSION TRAINING CREDIT	0	0	0	0	0	0	0	0
SUBTOTAL	382	382	382	382	382	382	382	382
NAV EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAY/NIGHT OVERWATER SORTIE								
RPI 1 NAVSx6.0x(2+2)	475	475	475	475	475	475	475	475
RPI 6 NAVSx6.0x(2+2)	132	132	132	132	132	132	132	132
RPI 8 NAVSx6.0x(2+2)	0	0	0	0	0	0	0	0
SUBTOTAL	607	607	607	607	607	607	607	607
ASSAULT LND	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
RPI 1 ACs x24x0.3	143	143	143	143	143	143	143	143
STAFF RPI 6 ACs x16x0.3	63	63	63	63	63	63	63	63
STAFF RPI 8 ACs x16x0.3	11	11	11	11	11	11	11	11
SUBTOTAL	217	217	217	217	217	217	217	217
IN-UNIT REQUAL	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
BASIC PROFICIENCY	33	33	33	33	33	33	33	33
LPS/EVAL CREDIT	-3	-3	-3	-3	-3	-3	-3	-3
TACTICAL PROFICIENCY	44	44	44	44	44	44	44	44
SUBTOTAL	74	74	74	74	74	74	74	74

Appendix C: Yokota C-130 Flying Hour Training Requirements (continued)

AC/IP UPGRADE	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AC UPGRADE HOURS	74	74	74	74	74	74	74	74
IP UPGRADE HOURS	17	17	17	17	17	17	17	17
SUBTOTAL	91	91	91	91	91	91	91	91
PROFICIENCY TRAINING TOTAL	1,371	1,371	1,371	1,371	1,371	1,371	1,371	1,371
MISSION TRAINING								
VISUAL LOW LEVEL (VLL) OPERATIONS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAY VLL SORTIES RPI 1 x 1.2 x 4 x 1.1	95	95	95	95	95	95	95	95
STAFF RPI 6 x 1.2 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 4 x 1.1	5	5	5	5	5	5	5	5
NIGHT VLL SORTIES RPI 1 x 1.2 x 8 x 1.1	190	190	190	190	190	190	190	190
STAFF RPI 6 x 1.2 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 4 x 1.1	5	5	5	5	5	5	5	5
SUBTOTAL	359	359	359	359	359	359	359	359
SKE OPERATIONS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
SKE LEAD/WING SORTIES	333	333	333	333	333	333	333	333
STAFF RPI 6 SKE SORTIES	111	111	111	111	111	111	111	111
SUBTOTAL	444	444	444	444	444	444	444	444
RECOVERY EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
FORMATION VISUAL RPI 1 x 0.4 x 12 x 1.1	95	95	95	95	95	95	95	95
STAFF RPI 6 x 0.4 x 4 x 1.1	21	21	21	21	21	21	21	21
STAFF RPI 8 x 0.4 x 4 x 1.1	4	4	4	4	4	4	4	4
FORMATION AWADS/SKE RPI 1 x 0.5 x 12 x 1.1	119	119	119	119	119	119	119	119
STAFF RPI 6 x 0.5 x 6 x 1.1	40	40	40	40	40	40	40	40
RANDOM STEEP/SALLOW RPI 1 x 0.4 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 6 x 0.4 x 4 x 1.1	21	21	21	21	21	21	21	21
STAFF RPI 8 x 0.4 x 4 x 1.1	4	4	4	4	4	4	4	4
SUBTOTAL	336	336	336	336	336	336	336	336
LEAD UPGRADE	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
LEAD UPGRADE HOURS	83	83	83	83	83	83	83	83
SUBTOTAL	83	83	83	83	83	83	83	83
MISSION TRAINING TOTAL	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222
TRAINING EVENTS TOTAL (TET)	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593

Appendix C: Yokota C-130 Flying Hour Training Requirements (continued)

NON-TRAINING EVENTS								
TRAINING EVENTS TOTAL	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593
NON-TRAINING EVENT TOTAL	3,344	3,344	3,344	3,344	3,344	3,344	3,344	3,344
PROGRAM TOTAL	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,937
MISSION DESCRIPTIONS								
LOCAL TRAINING								
LOCAL TRAINING	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
PROFICIENCY TRAINING TOTAL	1,371	1,371	1,371	1,371	1,371	1,371	1,371	1,371
LESS OPER CREDIT (TWCF)	-304	-304	-304	-304	-304	-304	-304	-304
LOCAL PROFICIENCY TRAINING TOTAL	1,067	1,067	1,067	1,067	1,067	1,067	1,067	1,067
MISSION TRAINING TOTAL	1,222	1,222	1,222	1,222	1,222	1,222	1,222	1,222
LESS JA/ATT CREDIT	-315	-315	-315	-315	-315	-315	-315	-315
LESS RED FLAG/COPE THUNDER CREDIT	-11	-11	-11	-11	-11	-11	-11	-11
LOCAL MISSION TRAINING TOTAL	896	896	896	896	896	896	896	896
LOCAL TRAINING TOTAL (LTT)	1,963	1,963	1,963	1,963	1,963	1,963	1,963	1,963
JA/ATT								
JA/ATT	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
JA/ATT	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260
JA/ATT TOTAL	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260
RED FLAG/COPE THUNDER/ST JOE								
RED FLAG/COPE THUNDER	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
RED FLAG/COPE THUNDER	1	1	1	1	1	1	1	1
POS/DEPOS #DEPLOYMENTSx14x2	31	31	31	31	31	31	31	31
RANGE TIME #DEPLOYMENTS x 10 x4.0	44	44	44	44	44	44	44	44
SUBTOTAL	76	76	76	76	76	76	76	76
USER HOURS								
USER HOURS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
SAAM	317	317	317	317	317	317	317	317
CHANNEL	2,136	2,136	2,136	2,136	2,136	2,136	2,136	2,136
JCS EXERCISE	185	185	185	185	185	185	185	185
USER HOURS TOTAL	2,638	2,638	2,638	2,638	2,638	2,638	2,638	2,638
PROGRAM TOTAL	5,937	5,937	5,937	5,937	5,937	5,937	5,937	5,937

Appendix D: Yokota Airland Only Training Requirements

C-130 PROGRAM - YOKOTA								
AGING								
AGING REQUIREMENT	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
INEXPERIENCED PILOTS	16	16	16	16	16	16	16	16
AGING RATE	29	29	29	29	29	29	29	29
EXP HRS=INX CPsxAging Ratex12	5,568	5,568	5,568	5,568	5,568	5,568	5,568	5,568
NON-EXP HRS	286	286	286	286	286	286	286	286
PROGRAM TOTAL	5,854	5,854	5,854	5,854	5,854	5,854	5,854	5,854
SORTS TRAINING								
PROFICIENCY TRAINING								
PILOT EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
RPI 1 Acs								
1 LPS/EVALx1.7	34	34	34	34	34	34	34	34
1 LPSx1.7	34	34	34	34	34	34	34	34
10 MONTHLIESx.8	158	158	158	158	158	158	158	158
MISSION TRAINING CREDIT	-158	-158	-158	-158	-158	-158	-158	-158
STAFF ACs - RPI 6								
1 LPS/EVALx1.7	22	22	22	22	22	22	22	22
1 LPSx1.7	22	22	22	22	22	22	22	22
10 MONTHLIESx.8	106	106	106	106	106	106	106	106
MISSION TRAINING CREDIT	-106	-106	-106	-106	-106	-106	-106	-106
STAFF ACs - RPI 8								
1 LPS/EVALx1.7	4	4	4	4	4	4	4	4
1 LPSx1.7	4	4	4	4	4	4	4	4
10 MONTHLIESx.8	63	63	63	63	63	63	63	63
MISSION TRAINING CREDIT	-63	-63	-63	-63	-63	-63	-63	-63
RPI 1 CPs								
1 LPS/EVALx1.7	34	34	34	34	34	34	34	34
3 LPSx1.7	101	101	101	101	101	101	101	101
8 MONTHLIESx.8	127	127	127	127	127	127	127	127
MISSION TRAINING CREDIT	0	0	0	0	0	0	0	0
SUBTOTAL	382	382	382	382	382	382	382	382
NAV EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAY/NIGHT OVERWATER SORTIE								
RPI 1 NAVSx6.0x(2+2)	475	475	475	475	475	475	475	475
RPI 6 NAVSx6.0x(2+2)	132	132	132	132	132	132	132	132
RPI 8 NAVSx6.0x(2+2)	0	0	0	0	0	0	0	0
SUBTOTAL	607	607	607	607	607	607	607	607
ASSAULT LND	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
RPI 1 ACs x24x0.3	143	143	143	143	143	143	143	143
STAFF RPI 6 ACs x16x0.3	63	63	63	63	63	63	63	63
STAFF RPI 8 ACs x16x0.3	11	11	11	11	11	11	11	11
SUBTOTAL	217	217	217	217	217	217	217	217
IN-UNIT REQUAL	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
BASIC PROFICIENCY	33	33	33	33	33	33	33	33
LPS/EVAL CREDIT	-3	-3	-3	-3	-3	-3	-3	-3
TACTICAL PROFICIENCY	44	44	44	44	44	44	44	44
SUBTOTAL	74	74	74	74	74	74	74	74

Appendix D: Yokota Airland Only Training Requirements (continued)

AC/IP UPGRADE	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AC UPGRADE HOURS	74	74	74	74	74	74	74	74
IP UPGRADE HOURS	17	17	17	17	17	17	17	17
SUBTOTAL	91	91	91	91	91	91	91	91
PROFICIENCY TRAINING TOTAL	1,371	1,371	1,371	1,371	1,371	1,371	1,371	1,371
MISSION TRAINING								
VISUAL LOW LEVEL (VLL) OPERATIONS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAY DD SORTIES RPI 1 x 1.2 x 4 x 1.1	95	95	95	95	95	95	95	95
STAFF RPI 6 x 1.2 x 2 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 2 x 1.1	5	5	5	5	5	5	5	5
NIGHT DD SORTIES RPI 1 x 1.2 x 8 x 1.1	190	190	190	190	190	190	190	190
STAFF RPI 6 x 1.2 x 2 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 8 x 1.2 x 2 x 1.1	5	5	5	5	5	5	5	5
SUBTOTAL	359	359	359	359	359	359	359	359
SKE OPERATIONS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
SKE LEAD/WING SORTIES	0	0	0	0	0	0	0	0
STAFF RPI 6 SKE SORTIES	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0
RECOVERY EVENTS	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
FORMATION VISUAL RPI 1 x 0.4 x 12 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 6 x 0.4 x 4 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 8 x 0.4 x 4 x 1.1	0	0	0	0	0	0	0	0
FORMATION AWADS/SKE RPI 1 x 0.5 x 12 x 1.1	0	0	0	0	0	0	0	0
STAFF RPI 6 x 0.5 x 6 x 1.1	0	0	0	0	0	0	0	0
RANDOM STEEP/SALLOW RPI 1 x 0.4 x 4 x 1.1	32	32	32	32	32	32	32	32
STAFF RPI 6 x 0.4 x 4 x 1.1	21	21	21	21	21	21	21	21
STAFF RPI 8 x 0.4 x 4 x 1.1	4	4	4	4	4	4	4	4
SUBTOTAL	57	57	57	57	57	57	57	57
LEAD UPGRADE	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
LEAD UPGRADE HOURS	0	0	0	0	0	0	0	0
SUBTOTAL	0	0	0	0	0	0	0	0
MISSION TRAINING TOTAL	416	416	416	416	416	416	416	416
TRAINING EVENTS TOTAL (TET)	1,787	1,787	1,787	1,787	1,787	1,787	1,787	1,787

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Vita

Captain Bauer was born 16 March 1967 in Chandler, Arizona. He earned his commission in 1989 through the United States Air Force Academy and was awarded a Bachelor of Science Degree in Engineering Psychology. He continued his education by earning a Master of Science Degree in Operations Management from the University of Arkansas in May 1999.

Captain Bauer began his military career by earning his pilot wings at Williams Air Force Base in October 1990. Upon completion of C-130 mission qualification, he was assigned to the 773rd Tactical Airlift Squadron at Dyess Air Force Base, Texas. While at Dyess he advanced from Copilot to Standardization and Evaluation pilot. Captain Bauer attained Distinguished Graduate status at Squadron Officer's School in October 1995, enroute to his new assignment as Joint Exercise Planner in the Joint Training Division of the Combat Aerial Delivery School. Captain Bauer was later selected to attend the newly developed C-130 Weapons Instructor Course and upon graduation remained on staff as a Weapons Instructor.

In May of 1999, Capt Bauer was assigned to the Air Mobility Warfare Center, Advanced Study of Air Mobility program. After graduation and subsequent Masters of Science Degree of Air Mobility, he will be assigned to USSOUTHCOM-J3 Air Operation in Miami Florida.

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ABSTRACT (Maximum 200 Words) In 1997, the Air Mobility Command Commander convened a Tiger Team to develop a road map for C-130s. The command was concerned the C-130 was spending too much time training for its airdrop mission and not enough time flying revenue generating Transportation Working Capital Fund (TWCF) missions. Despite this concern, one of the primary recommendations in the Tiger Team report was to keep all C-130 aircrews 100% formation airdrop and airland qualified. The purpose of this paper is to examine the feasibility and impact of eliminating the airdrop qualification of G-130 aircrews at Yokota AB Japan. The paper investigates three questions in exploring this research problem. The first investigative question examines the feasibility of combat delivery C-130s meeting wartime requirements if Yokota is requalified as airland only. The second investigative question examines if requalifying Yokota C-130s risks the Pacific TWCF and Joint Airborne/Air Transportability Training (JA/ATT) peacetime requirements. The final investigative question examines the impact requalifying Yokota has on training requirements and whether or not Yokota needs to fence training aircraft. In the end, the paper concludes that it is feasible to requalifying Yokota as airland only. The theater Commander in Chief (CINC) still has an effective force to meet all wartime requirements and an increased capability to meet peacetime requirements. At the same time, the requirements are met more efficiently, as savings are realized through reduced training and deployment costs.				
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