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13. ABSTRACT (Maximum 200 words) This technical report provides closure to the Operations Research Center's (ORCEN's) work on the Installation Status Report, Part I- Infrastructure. This report is a follow on to Technical Report Numbers FY 92/9 1 -1 and FY 93/92 - 1, prepared by Majors Frye and Harmon, respectively. This report also summarizes the information provided in the ISR, Part I- Infrastructure Field Test After Action Report, dated 18 November 1993, and the ISR Part I- Infrastructure & Part II-Environment Expanded Field Test After Action Report, dated 1 April 1995, both compiled by Major Trainor. The final form of the ISR approved by the Chief of Staff, Army (CSA) for fielding at all CONUS installations is contained for historical reference in Appendix D. A copy of the decision briefing presented to the CSA is given in Appendix E. The Army secretariat identified a need to articulate the Army's infrastructure problems in a manner that decision makers throughout the chain of command could understand. The problem was that several, detailed engineering reports were used to evaluate infrastructure. These reports presented small bits of information that were difficult to tie together to present the "big" picture of true infrastructure revitalization needs. Hence, the Army could not form an effective infrastructure renewal strategy that complemented force and installation restructuring strategies. The development of the ISR by the ORCEN represents a systems engineering solution to an Army wide problem. The ORCEN defined the problem, performed a needs analysis, developed a system model, field tested and refined the model twice, and successfully briefed the model and test results through the key Army decision makers. Major David Frye tackled the problem definition and needs analysis of the Army's infrastructure dilemma. Key results from his analysis were that any decision support system to deal with this problem had to evaluate conditions based on common Army wide standards and the system must support the effective allocation of scarce infrastructure resources.				
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**Decision Support for Installations  
of the United States Army:  
The Installation Status Report  
Part I - Infrastructure**

**Major Timothy E. Trainor**

**Operations Research Center**

**Technical Report No. FY 94/93 - 1**

**8 June 1995**

The Operations Research Center is supported by the Assistant Secretary of the Army for Financial Management.

**DTIC QUALITY INSPECTED 1**

**Decision Support for Installations of the  
United States Army:**

**The Installation Status Report  
Part I - Infrastructure**

**Major Timothy E. Trainor**

**A TECHNICAL REPORT  
OF THE  
OPERATIONS RESEARCH CENTER  
UNITED STATES MILITARY ACADEMY**

Directed and Approved by

**Colonel James L. Kays, Ph.D.  
Professor and Head  
Department of Systems Engineering**

8 June 1995

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This project was sponsored by the Assistant Secretary of the Army for Financial Management.

## **Vita**

Major Timothy E. Trainor was born in Oceanside, New York in 1961. He graduated from the United States Military Academy in 1983 with a Bachelor of Sciences degree and was commissioned a Second Lieutenant in the US Army. He has served in a variety of engineering assignments, including tours as a company commander and brigade assistant operations officer. In 1992, he received a Masters in Business Administration (MBA) from the Fuqua School of Business at Duke University. He also received his license as a Professional Civil Engineer from the State of Virginia in 1992. As an Instructor and Assistant Professor in the Department of Systems Engineering at USMA, he has taught courses in Engineering Economy and Production Operations Systems.



## Acknowledgments

This report represents the synthesis of the ideas and efforts of many people who have worked on the project over a three year period. Much of the credit for the success of this endeavor must go to Major David C. Frye and Major William E. Harmon. Major Frye performed the initial, crucial work on this project by doing the needs analysis and systems framework sketch for the Installation Status Report (ISR). Major Harmon performed the laborious research and coordination efforts in developing the systems model for the ISR.

Colonel James L. Kays was the guiding force that saw the ISR through to completion - from initial concept to final approval as an Army-wide system by the Chief of Staff, Army. Most of the credit for successful completion of the ISR goes to him as the ideas the system is built on are his. Also, he provided the continuity for this effort as he was the only person who remained significantly from initial concept through final product.

I would like to especially thank Mrs. Suzanne Carlton of Management Analysis, Office of the Assistant Secretary of the Army, Financial Management (OASA(FM)). Her outstanding management skills and untiring, tenacious efforts as the Army's lead project officer for the ISR brought it to fruition as an Army system. Ms. Mary Walker, Director of Management Analysis for the OASA(FM), contributed significantly to the ISR through her sage guidance and smooth coordination of the effort with the Army staff.

Several people from Richardson & Kirmse Engineering, Inc. (R&K) need to be recognized for their significant contributions to the modeling and analysis of the ISR. Mr. John Hesson as the lead project manager from R&K skillfully organized his firm's significant contributions to the ISR. Mr. Roger Brown developed the user-friendly computer software that is a primary reason why the Army has so readily accepted the ISR. Mr. Robert Adams provided much of the knowledge of current Army facility reporting systems that was needed to make the ISR compatible with these systems. Mr. Julian Dangerfield assisted me in field research during the testing and analysis phase of this project.

The Office of the Assistant Chief of Staff for Installation Management (OACSIM), who is now the Army's proponent for the ISR, contributed significantly to this endeavor. Mr. Stan Shelton was the driving force within the OACSIM for the development of the ISR. His leadership, guidance and knowledge were critical in the completion of the ISR. LTC Tom Frankenfield provided the knowledge, coordination and development of the initial standards for Part II - Environment of the ISR. Ms. Billie Young, Mr. Bob Conte and Mr. James Kemp contributed much as action officers within the OACSIM. Mr. Steve Roberts spearheaded a key component of the ISR as he edited the facility standards booklets.

The ISR would not have been successfully fielded without the untiring efforts and close scrutiny of the system by the excellent action officers at each of the test installations. These individuals worked extremely hard to test and retest the ISR for us under actual installation conditions. The final product incorporates many of their wise recommendations and reflects the lessons learned from their patient labors. I would like to specifically thank some of the key

installation action officers for their support and honest feedback: Mr. Lamar McKissack, Fort Hood; Mrs. Thelma Varner, Anniston Army Depot, and CPT Greg Cleary, Fort Gordon.

I want to thank the administrative staff of the Department of Systems Engineering and the Operations Research Center for their care and efforts in this endeavor, Mrs. Sharon Moore, Ms. Betty Melick, Ms. Wendy O'Dell, Mrs. Nicole Scott and Mrs. Kim Dubey.

This project represents the synthesis of the ideas of many people. I would like to thank the members of the Executive Steering Committee who provided the leadership oversight of the key agencies involved:

Dr. Robert Raynsford, OASA(FM); BG Robert Herndon, OACSIM; Mr. DeWire, OASA(IL&E); MG (P) Arnold, ODCSOPS; MG Elam, ODCSLOG; MG Arnold, ODCSPER; Ms. Menig, OACSIM; Dr. Bellaschi, DPAE; BG Thompson, OASA(FM); Ms. Leiby, OASA(FM); Mr. Valletta, ODISC4; BG Brown, OACSIM; Mr. Steve Bagby, Cost and Economic Analysis Center (CEAC).

Finally, and most importantly, I would like to thank my wife, Major Donna Brazil, and our three children, Cory, Danny and Zach, for their patience, support and understanding while I worked on this project -- particularly during my many travels to conduct field research and project briefings.

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## Executive Summary

This technical report provides closure to the Operations Research Center's (ORCEN's) work on the Installation Status Report, Part I- Infrastructure. This report is a follow on to Technical Report Numbers FY 92/91-1 and FY 93/92 -1, prepared by Majors Frye and Harmon, respectively. This report also summarizes the information provided in the ISR, Part I- Infrastructure Field Test After Action Report, dated 18 November 1993, and the ISR Part I- Infrastructure & Part II-Environment Expanded Field Test After Action Report, dated 1 April 1995, both compiled by Major Trainor. The final form of the ISR approved by the Chief of Staff, Army (CSA) for fielding at all CONUS installations is contained for historical reference in **Appendix D**. A copy of the decision briefing presented to the CSA is given in **Appendix E**.

The Army secretariat identified a need to articulate the Army's infrastructure problems in a manner that decision makers throughout the chain of command could understand. The problem was that several, detailed engineering reports were used to evaluate infrastructure. These reports presented small bits of information that were difficult to tie together to present the "big" picture of true infrastructure revitalization needs. Hence, the Army could not form an effective infrastructure renewal strategy that complemented force and installation restructuring strategies.

The development of the ISR by the ORCEN represents a systems engineering solution to an Army wide problem. The ORCEN defined the problem, performed a needs analysis, developed a system model, field tested and refined the model twice, and successfully briefed the model and test results through the key Army decision makers. Major David Frye tackled the problem definition and needs analysis of the Army's infrastructure dilemma. Key results from his analysis were that any decision support system to deal with this problem had to evaluate conditions based on **common Army wide standards** and the system must support the **effective allocation of scarce infrastructure resources**.

Major William Harmon performed the systems modeling to meet the Army's needs. The model, which uses C-rating language similar to the Unit Status Report (USR) for ease of understanding, does these things:

1. Defines what/how infrastructure is evaluated;
2. Provides common standards for measuring the conditions of facilities across the Army;
3. Contains cost estimate reports which, for the first time, give the Army a consistent, common methodology for estimating infrastructure sustainment and improvement costs; and
4. Has a supporting software package for generating required reports.

Major Tim Trainor conducted the system testing and refinement, and saw the ISR through the decision making phase. Through both field tests, three common actions were critical to successful testing - training installation and MACOM users of the ISR, providing continual, personal assistance, and providing an effective means to gather and incorporate user feedback into the ISR. Decision makers at Headquarters, Department of the Army (HQDA) had to be

briefed after both field tests. After the first test, the CSA approved a plan to conduct expanded field testing at 25 installations in order to validate changes made to the first model and to test the whole ISR process - from installation preparation through aggregation and use of the data at MACOMs and HQDA. After this second test, some Installation Commanders and MACOM Chiefs of Staff joined the CSA for the final decision briefing. This enabled the CSA to impart his intent for the ISR directly to Commanders when he approved Part I -Infrastructure for fielding at CONUS installations.

The ORCEN passed off the ISR for Army implementation to the Office of the Assistant Chief of Staff for Installation Management. However, the model passed off could be continually improved in these areas:

1. **C-Ratings:** A weighting scheme may need to be incorporated into the software to account for relative asset size and importance to the installation.

2. **Implementing Instructions:** The Army Regulation should improve instructions for completing the appropriations reports.

3. **Inspection Process:** The format of the inspection worksheet should incorporate instructions on determining the overall facility color rating.

4. **Database / RPLANS Concerns:** The CATCODE structure for training ranges needs to be updated to better capture the range capabilities at installations. RPLANS algorithms for training range requirements need to be revised and staffed with the ODCSOPS. Also, RPLANS algorithms for Child Development Centers and Maneuver Areas need to be updated.

5. **Standards:** Standards improvements should focus on these categories of facilities: training ranges; utility systems; airfields; child development centers; information management; and outdoor sports and recreation facilities.

6. **Workload Issue:** The Army leadership should follow through on the CSA's directive to phase-out and replace these reports with the ISR:

- (a) The Unconstrained Requirements Report (URR);
- (b) The Installation Commander's Annual Real Property Utilization Survey (ICARPUS);
- (c) The Backlog of Maintenance and Repair report (BMAR);
- (d) The Deferred Maintenance and Repair report (DMAR);
- (e) The Triennial facility inspection requirement.

7. **Cost Reports:** The cost factors need to be continually updated as the ISR evolves. As more data becomes available over time, cost factors can be adjusted to improve accuracy. However, the Army will have to be educated on how to use ISR cost estimates.

The ISR should prove to be an effective infrastructure decision support tool for installation, MACOM and HQDA level decision makers in the future as long as it remains a

**Commander's report.** Historical data from the ISR will eventually be useful to analyze trends and the effects of funding strategies at the Army and MACOM levels. The cost estimates produced by the ISR will be useful in making **programming** decisions for infrastructure renewal in constructing the Army's Program Objective Memorandum (POM). Installation commanders should find it useful in providing consistency to the five-year construction plans between successive commanders. The ISR will have trouble, however, if staffs attempt to use it as a strict budgetary document. If the ISR becomes a means that "bean counters" use to control the construction and repair and maintenance funds used by installation commanders, it will cease to exist in the near future.

# 1. Overview of the ISR Development

This technical report provides closure to the Operations Research Center's (ORCEN's) work on the Installation Status Report, Part I- Infrastructure. This report is a follow on to Technical Report Numbers FY 92/91-1 and FY 93/92 -1, prepared by Majors Frye and Harmon, respectively. This report also summarizes the information provided in the ISR, Part I- Infrastructure Field Test After Action Report, dated 18 November 1993, and the ISR Part I- Infrastructure & Part II-Environment Expanded Field Test After Action Report, dated 1 April 1995, both compiled by Major Trainor. The final form of the ISR approved by the CSA for fielding at all CONUS installations is contained for historical reference in **Appendix D**. A copy of the decision briefing presented to the CSA is given in **Appendix E**.

## 1.1. Problem Definition and Needs Analysis.

The Army Secretariat staff identified a need to articulate the Army's infrastructure problems in a manner that decision makers throughout the chain of command could understand. The basic problem was that infrastructure needs were being identified in several different engineering "stovepipe" reports that provided disjointed bits of information in detailed, "engineering" language. The "big" picture of true infrastructure conditions and needs on our installations could not be presented in a clear, meaningful manner to the key leaders who make decisions regarding resource allocation. The problem was compounded by the fact that the engineering assessments of infrastructure conditions were not made based on any common standards among our installations. Hence, the Army had difficulty forming an effective, coherent infrastructure maintenance and revitalization strategy that would complement force and installation restructuring strategies. The bottom line was the Army needed a tool to help it make better, more effective use of limited resources for infrastructure with the future shaping of the force and installations in mind.

The ORCEN's three year effort in developing the ISR, Part I, represents a classic systems engineering solution to this Army-wide problem. Major Frye set about the difficult task of performing the problem definition and needs analysis for the Army Secretariat. This was a year-long effort that required significant research into current engineering systems and input from several knowledgeable decision makers regarding what outputs they need from an infrastructure decision support system. The key result from the needs analysis was that the primary purpose of any system to deal with this problem is to support the effective allocation of increasingly scarce resources for infrastructure renewal.<sup>1</sup>

This analysis shaped the objectives that became the common thread throughout the development, testing and refinement of the ISR. The ISR needed to provide the Army a decision support system that:

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<sup>1</sup> Frye, Major David C., "Decision Support for Infrastructure Renewal in the United States Army." ORCEN Tech. Report No. FY92/91-1, pg. 18.

1. Assesses installation **conditions**;
2. Establishes Army-wide **standards**;
3. Articulates **installation** and **Army needs**;
4. **Estimates** infrastructure renewal resource **requirements**;
5. Assists in **prioritizing** programs and projects;
6. Assists in **allocation** of resources; and
7. Measures **progress**.

Armed with Major Frye's research, Colonel Kays proposed using a system framework similar to that of the Unit Status Report (USR) for identifying infrastructure problems. With this in mind, Major Frye started defining the components of such a decision support system. It was apparent early on that for commanders to effectively determine needs, they must first assess infrastructure conditions **based on common Army-wide standards**. The idea was to provide a system that would allow installations to objectively assess infrastructure conditions based on standard criteria that would be non-technical to use, but technically sound in evaluation methodology.<sup>2</sup> Assessment using common Army-wide standards remains a bedrock of the ISR currently fielded.

## 1.2. System Modeling.

Major Bill Harmon gave life and form to the ISR by developing the prototype report system to meet the needs of the project. His monumental task was to orchestrate the work of several different Army agencies and contractors who were creating various portions of the ISR. The Army staff wrote the facility condition standards, the Cost and Economic Analysis Center (CEAC) developed cost factors to support the cost estimate reports of the ISR, Richardson & Kirmse Engineering, Inc. (R&K), developed the software program used to create the various ISR reports, and Rhodeside & Harwell, Inc., provided graphics support to illustrate the facility standards booklets. Major Harmon pulled the work of these groups together to create the ISR used in the initial field test.

A major undertaking in modeling the ISR was structuring what types of infrastructure the Army wanted to evaluate and how to package the evaluation. Through many briefings and much staffing, Major Harmon got the Army to agree on the facility sub-category, category and area hierarchical structure the ISR uses to report on infrastructure conditions. Conditions are quantified using the C-rating format of the USR as proposed by Colonel Kays. Thus the Army would now use the same language to report both unit readiness and infrastructure conditions on its installations.

The Management Analysis Office in the OASA(FM), led by Ms. Mary Walker and Mrs. Suzanne Carlton created a Project Working Group (PWG) to develop the facility standards portion of the ISR. This PWG had members of the Army staff that were proponents for the various type facilities being evaluated in the ISR. Their task was to develop facility inspection worksheets and the quality standards descriptions using the assessment codes of GREEN, AMBER and RED. They also were asked to identify mitigating environmental, health, safety,

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<sup>2</sup> Frye, Major David C., pgs. 17-18.



and preservation factors which influence facility conditions. Major Harmon, together with Mrs. Carlton and Mr. Steve Roberts of the Engineering and Housing Support Center now under OACSIM, formatted and edited these standards to final testing form.<sup>3</sup> Rhodeside and Harwell graphically illustrated the GREEN, AMBER, and RED conditions for several of the inspection items to help inspectors visualize the condition descriptions in the facility standards booklets.

The cost reports really "give teeth" to the ISR. The cost estimate reports provide a meaningful link between facility conditions and the dollars required to both sustain and improve these conditions. The beauty of these cost estimates is that they provide a consistent, **common methodology** for the Army to estimate the sustainment and improvements costs for its infrastructure based on assessment by common facility standards. CEAC developed the cost factors used by the ISR software to estimate the dollars required to sustain facilities at their current C-rating. They also developed factors to estimate the costs required to bring facility categories with quantity and quality deficiencies to a C-1 rating. For quantity shortfalls, the ISR estimates the construction costs for building the new facilities required to bring the category rating to C-1. The cost factors also allow the ISR to estimate the renovation costs to improve RED and AMBER facility conditions to a GREEN status such that the facility category rating increases to C-1. These cost reports are an essential part of the ISR.

The other major component of the prototype ISR was the supporting software program. Major Harmon worked closely with R&K Engineering to create a user-friendly program that accepts facility condition data, calculates category quality and quantity C-ratings, and develops C-rating and cost estimate reports. The software is pre-loaded with an installation's real property inventory reflected in the Headquarters, Integrated Facilities System (HQIFS) and its facility requirements data determined by the Headquarters, Real Property Planning and Analysis System (HQRPLANS). The ISR program takes the manually inputted GREEN, AMBER, RED facility inspection results and interfaces with an installation's real property inventory and facility requirements data to create the category quantity and quality C-ratings. The software then uses these C-ratings and the cost factors to develop the sustainment, renovation and new construction cost reports. This software program is a major plus of the ISR.

Major Harmon pulled all this work together and wrote the initial field test instructions which installations used to execute the ISR during the first field test. These instructions formed the basis of the Army Regulation that will be used as the formal executing document to implement the ISR throughout the Army.

### 1.3. System Testing and Refinement.

Major Trainor took on the ORCEN's efforts in testing and refining the ISR. The ISR underwent two field tests at selected installations over the course of one year. The first test was conducted in July-August 1993 at eleven CONUS installations. After refinement, the second field test took place in February - April 1994 at 25 installations in CONUS, Hawaii and Alaska. The ORCEN and OASA(FM) had to effectively develop, manage and execute three key phases

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<sup>3</sup> Harmon, Major William E. "Decision Support for Installations of the United States Army." ORCEN Tech Report No. FY93/92-1, pg. 10.

in order for system testing and refinement to be successful. First, the users (test installations) had to be effectively **trained** on how to complete the ISR. Second, the installations needed **assistance** during the field test to insure its successful execution. Finally, we needed to provide an effective means to **receive feedback** about the ISR so it could be refined based on user input.

The training phase before both tests had two main thrusts - visiting each test installation to brief the key leaders, second, conducting centralized training sessions for the installation personnel who would act as the ISR test project officers. Briefings to the Installation Commander and key leaders focused on the purpose, objectives and basic components of the ISR. These visits proved vital to the success of the ISR because they gave **command emphasis** to the project. Installation leaders also better understood the test reports they saw and eventually signed since the ISR is a commander's report. The centralized, day-long, training sessions for ISR project officers provided an overview of the development and objectives of the ISR and a detailed discussion of how to execute its various components. Key to this training was giving the project officers hands-on work with the ISR software and providing them helpful suggested guidelines on how to organize their installation's efforts to successfully complete the ISR. We also provided each installation during the second field test a training video tape they could use to train their facility inspectors. This proved very helpful to installation ISR project officers.

During both field tests, we conducted on site visits to each installation to provide assistance as needed. During the second test, we also used these assistance visits to help validate some of the ISR's components. Installations usually needed the most assistance either upfront in getting organized to execute the ISR and/or towards completion when they were finalizing and reconciling reports. While time consuming, these assistance visits were key to the ISR's eventual success because they allowed the developers (ORCEN, OASA(FM), OACSIM, and R&K Engineering) to meet directly with the system users and understand their difficulties and hear first hand suggestions for improvement. OASA(FM) also organized a phone "hotline" during each test to respond to questions and concerns. Lessons learned during the testing phase were shared with all installations through a weekly newsletter compiled by OASA(FM). These assistance efforts proved effective in getting quality reports from the test installations.

Key to successful testing and refinement of the ISR was gathering useful feedback about the system from the test installations. We took a Total Army Quality (TAQ) approach to this testing and refinement phase of the project. We knew in order for the Army to accept the ISR as a system, their ideas and suggestions needed to be incorporated into the final product. We used two means to gather "user level" feedback about the ISR - "Customer" surveys and After Action Reviews (AARs).

Each installation and MACOM was asked to complete a standard survey at the end of the first test that evaluated how well the ISR met its design objectives, the quality of the standards in each facility category, the validity and usefulness of the cost reports, the accuracy of the C-rating algorithms, and the user-friendliness of the software. These surveys highlighted the key concerns of the installations that we focused on in the AARs. The AARs provided the face-to-face feedback that was needed to determine the underlying problems in the ISR that needed to be fixed. During the second field test, in addition to the detailed project officer survey, we asked installation commanders to complete a short survey to provide us their evaluation of the

usefulness and effectiveness of the ISR as a decision support system. Both surveys provided some interesting and useful feedback. We conducted AARs after the second test via several teleconferences since so many installations were involved. The TAQ approach of getting, and using, installation and MACOM feedback in the refinement of the ISR was key to its eventual success because the users had direct contact with the systems developers and they saw their suggestions incorporated into the ISR used in the second field test.

#### **1.4. Decision Making.**

After both field tests, the ORCEN and OASA(FM) briefed the results and recommendations for future action to several levels of decision makers in Headquarters, Department of the Army (HQDA). We provided briefings to the following decision groups in this order:

1. The Executive Steering Committee (ESC). The ESC was the group providing guidance to development of the ISR. The ESC consisted of O-7 & O-8 general officers and civilian equivalents from the major offices of the Army and Secretariat staffs.

2. The Program Budget Committee (PBC). The PBC was briefed to get their approval of using the ISR in the future to assist in Army level programming decisions. They needed to support use of the ISR in order for it to go forward for final approval.

3. The Select Committee (SELCOM). The SELCOM, co-chair by the Vice Chief of Staff (VCSA) and the Under Secretary of the Army, consists of the principal Deputy Chiefs of Staff and the Assistant Secretaries of the Army. Their recommendations for approval had to be obtained prior to briefing the CSA.

4. The CSA was briefed after all the above committees to get his approval on our recommendations for actions with the ISR.

After analyzing the results of the first field test and conducting AARs with installations and MACOMs, we went forward to the HQDA committees with the recommendation to approve the ISR for fielding at all CONUS installations. The fielded ISR would include several refinements recommended by the test sites. The SELCOM was concerned that the ISR would be radically different after these refinements so they supported further field testing prior to full implementation. The CSA supported further testing at the original test locations and several other installations. The CSA directed ORCEN and OASA(FM) to look at these specific areas during the second field test and report back to him the results:

1. Use the original test sites to validate the refinements made to the ISR system.
2. Test the whole ISR process - from installation report preparation, through MACOM aggregation and use of data, to use of information at HQDA.
3. Examine closely reports which can be eliminated and/or streamlined at both MACOM and HQDA level by use of the ISR.

4. Get feedback directly from installation commanders on the ISR. Conduct an AAR for the CSA with some test installation commanders involved.

After analyzing the results of the second, expanded field test at 25 installations and conducting AARs with installations and MACOMs, ORCEN and OASA(FM) again briefed the same decision groups at HQDA. All committees supported our recommendation to field the ISR, Part I-Infrastructure, at CONUS installations. The decision briefing to the CSA included a round table discussion with several of the key leaders of the installations/MACOMs involved in the expanded field test. Those present from test installations/MACOMs included the Commander, XVIII Airborne Corps and Fort Bragg; Deputy Commander, III Corps and Fort Hood; Commander, Field Artillery Center and Fort Sill; and the Chiefs of Staff from FORSCOM, TRADOC and AMC. The CSA wanted to hear the briefing and input from the test sites and DA staff principals before making a decision.

*The Chief of Staff, Army approved CONUS implementation of the ISR, Part I Infrastructure for 3rd quarter, FY95. He directed the Army staff to get rid of those reports already identified for elimination and to look for other reports that can be eliminated by the ISR.* The CSA's guidance on implementing the ISR was for it to be in dialogue with MACOM and installation commanders. He stressed that there was too much disparity in standards among installations. He believed the ISR's use of standards will present an accurate picture of installation conditions and resource needs for infrastructure so large scale decisions about installations could be made with better information. He also stressed that a great benefit of the ISR was getting Commanders together in one room to talk about installations and infrastructure with him, something seldom done before.

We learned some key lessons from going through the briefing and decision approval process after both field tests. The membership of these various committees turns over rapidly so several agencies were represented by different people after both tests. It is important to provide a quick overview of the background, objectives and **needs analysis** of the project in all briefings to bring members up to speed. Present the **user-level feedback**, both good and bad, from the test sites in addition to the test results. In particular, it was effective discussing the user's evaluation of how well the ISR system met its design objectives. The CSA's idea to brief him with the Commanders and Chiefs of Staff from the test installations and MACOMs improved the quality of our decision briefing. It "gave life" to the feedback from the sites, allowing the CSA to discuss both the positive and negative comments directly with their proponents. Finally, as in all briefings, be succinct with the presentation to allow ample time for discussion.

## 1.5. Implementation.

The OACSIM has staff execution responsibility now for the ISR. The ORCEN, working for the OASA(FM), has continued work on developing a Part II - Environment to the ISR. The initial report for Part II, developed by ORCEN and the Environmental office of the OACSIM, was field tested along with Part I - Infrastructure during the second, expanded test of the ISR.

Results and support for Part II was mixed from the test installations and MACOMs so the CSA directed further refinement and testing of Part II before implementation CONUS wide.

The ISR should prove to be an effective infrastructure decision support tool for installation, MACOM and HQDA level decision makers in the future **as long as it remains a Commander's report**. Historical data from the ISR will eventually be useful to analyze trends and the effects of funding strategies at the Army and MACOM levels. The cost estimates produced by the ISR will be useful in making **programming** decisions for infrastructure renewal in constructing the Army's Program Objective Memorandum (POM). Installation commanders should find it useful in providing consistency to the five-year construction plans between successive commanders. The ISR will have trouble, however, if staffs attempt to use it as a strict budgetary document. If the ISR becomes a means that "bean counters" use to control the construction and repair and maintenance funds used by installation commanders, it will cease to exist in the near future.

## 2. Initial Field Test of Part I -Infrastructure

Part I - Infrastructure of the ISR was first field tested from 19 July - 31 August 1993. A detailed presentation of the test results, data, issues raised and solutions worked, and lessons learned is presented in the ORCEN's "Installation Status Report, Part I-Infrastructure Field Test After Action Report", dated 18 November 1993. This chapter summarizes the important points of the full after action report.

### 2.1. Background Information.

The following MACOMs & Installations participated in the test:

<u>FORSCOM</u>	<u>TRADOC</u>	<u>AMC</u>	<u>MDW</u>
Ft. Hood	Ft. Benning	Aberdeen Proving Grounds	Ft. Belvoir
Ft. Carson	Ft. Knox	Redstone Arsenal	
Ft. Riley	Ft. Gordon	Anniston Army Depot	
Ft. Campbell			

Prior to the field test, the ISR development team ( OASA(FM), ORCEN, OACSIM, CEAC, and R & K Engineering) conducted centralized training sessions for each of the test MACOMs and installations. The installation personnel who attended the training sessions became the ISR points of contact (POCs) at their respective installations. Training consisted of a 5 hour block of instruction covering the details of the ISR system to include hands-on training with the system software. These sessions built the foundation for an effective working relationship between the test installation POCs and the ISR development team that has continued to date.

At the conclusion of the training sessions, the test installations were issued six copies of the ISR package. This package consisted of:

- An Installation Commander's Guide to the ISR (Test Concept & Objectives);
- A Field Test Evaluation Survey;
- ISR Implementing Instructions (Draft Army Regulation);
- Facility Inspection Worksheets;
- Facility Standards Booklets;
- Automation package which included:
  - \* Program disks for the ISR main and the ISRS satellite programs;
  - \* Disks with installation-specific real property inventory data, current as of March 1993, downloaded from the Headquarters Integrated Facilities System (HQIFS). These disks also contained installation-specific facility requirements/allowances downloaded from the Headquarters Real Property and Planning Analysis System (HQRPLANS).
  - \* List of facilities to be inspected by each installation;

- \* Gummed labels with facility identification information for use on inspection worksheets;
- \* Software User's Manual.

During the field test period, OASA(FM) produced a weekly newsletter of issues that had been surfaced by the various test sites. These weekly newsletters, which were faxed on Fridays to each test installation POC, provided an excellent forum for sharing of ideas, concerns and problem solutions. This process surfaced some of the major issues requiring attention along with some initial problem solution methods. **One lesson learned is that any HQDA or MACOM agency that conducts field tests of similar initiatives would benefit from using this type of newsletter process.**

## 2.2. Major Test Issues and Solutions Worked.

Each of the **major ISR issues** raised by the test installations and MACOMs was addressed through system enhancements prior to the second field test:

1. **C-Rating algorithms** proved too stringent and, in some cases, did not present an accurate picture of infrastructure conditions. C-rating data from this test is presented in **Appendix A**. These algorithms need to identify the true problem areas as C-4 and the areas not needing attention as C-1. The constraints in these algorithms were relaxed to present a more accurate assessment. There will be no weighting of infrastructure C-Ratings in the ISR. Data needs to be forwarded to MACOMs and DA in a pure state so decisions are made with installations on a "level playing field". Any weighting of ISR data can be done in follow-on decision support systems, such as the OACSIM's developing Decision Architecture, to assist in resource and policy decisions related to infrastructure.
2. **Facility requirements and allowances** generated by the HQRPLANS system and the installation real property inventories (RPI) contained in the HQIFS system, which are used to build an installation's ISR database, are not 100% accurate. In the second ISR test, installations were able to direct edit their ISR database to correct problems. Long term, the OACSIM is instituting a streamlined process called FARA (Facilities Allowance & Analysis System) to enable installations to validate, and MACOMs to approve, the allowances generated by HQRPLANS. Future ISR iterations will also use an installation's most current RPI database as the ISR asset database of record.
3. Many of the **facility standards** focused too much on "cosmetics" and not functionality. AMC installations highlighted this problem particularly in the production and maintenance facility standards. All comments received from the field were provided to the functional proponents on the HQDA staff who developed the standards and they incorporated many needed changes. Standards refinement focused on assessing both the facility conditions and how well the building fulfills the function for which it is used.
4. The test required **significant effort** on the part of some installation staff personnel. The burden can be attributed to the short test window given to installations, shortcomings of the

ISR system, and the learning curve involved in this new way of doing business. Several software enhancements are geared towards reducing staff effort. A training tape will be provided in the future for installations to use in training facility inspectors. The ACSIM is studying how to streamline and/or eliminate current reporting systems, such as the Unconstrained Requirements Report (URR), the Tri-Annual Inspection requirement and the Installation Commanders Annual Real Property Utilization Survey (ICARPUS), in order to reduce installation staff workload in other areas.

5. The **manual cost reports** required in the test ISR were difficult to complete. A separate software package is being developed to automate these reports for the next ISR test and implementing instructions will better explain report requirements.

6. Some **critical facilities**, particularly several training ranges, were left off the list of facilities to be evaluated in the ISR due to the configuration of these facility category groups (FCGs) in the HQIFS system. These FCGs have been realigned so these important facilities will be evaluated in future ISRs.

7. Some installations are concerned about a **lack of facilities to support mobilization and deployment missions**, thereby degrading their ability to act as power projection platforms. Non-permanent, "World War II" wood facilities, previously used to handle personnel surges during deployments/mobilizations, are being torn down with no allowances authorized to replace these facilities. Installations are concerned that future surges will leave them dependent on local economy sources to fulfill facility shortfalls. This is an Army policy issue that needs to be studied between the ACSIM and MACOMs to determine if additional facility allowances need to be authorized to support these missions. The ISR does not directly address this concern, however installations can edit their facility requirements to reflect these needs in the next ISR test.

### 2.3. Test Results.

The ISR development team conducted after action reviews (AARs) at each test site to identify how the installation task organized to accomplish the mission, the major problems encountered and the positive aspects of the ISR. The format for the AARs was a round table discussion with the key ISR players followed by a session with the installation commander, chief of staff and/or the garrison commander. These sessions provided valuable information on the major issues needing attention along with suggested direction for solutions.

The test window proved too short for the majority of the installations to conduct a thorough implementation and analysis of the ISR. **Installations need adequate time, minimum of 90 days, to prepare for and execute a mission of this nature.** Installations spent a lot of time initially sorting ISR information, preparing worksheets and standards booklets for distribution, and training/coordinating with inspectors. Due to the short test time frame, some installations only inspected selected facilities, choosing them using a random sampling plan. Limited time hindered POCs in establishing submission and quality control channels for completed inspection worksheets. **In future tests of initiatives of this scope, test sites should**



be provided detailed warning orders a minimum of 90 days prior to start date and the test window should be 60 days long.

The test installations validated the ISR in meeting its design objectives for their use. **Appendix B** contains the supporting data for this statement. MACOM response to the ISR was mixed. Generally the MACOMs supported testing the ISR further to validate the cost factors and C-Rating algorithms prior to using data in the budgeting process. They support further testing also to validate improved facility standards and to identify efficient uses of the data at MACOM and DA level.

The test results were briefed to all levels of the Army leadership, to include the CSA. General Sullivan was enthusiastic about the potential of the ISR as a Commander's tool to assist infrastructure related decisions made at all levels of the Army. He approved a plan to retest Part I in Feb-Apr 94 at the original test sites, along with some additional installations, to validate the system improvements made since the first test. The expanded test in Feb - Apr 94 focused on validating the system improvements and testing the whole process - from installation execution of the ISR, to aggregation and use of the data in decisions at MACOM level, to use of the data by the many components of the DA staff. Current "stovepipe" reports received at MACOM and HQDA level were closely examined for utility, and streamlined or eliminated if possible, in light of data generated in the ISR. The CSA asked for feedback directly from some test installation Commanders after this expanded test.

### 3. Expanded Field Test of Part I -Infrastructure

The expanded field test of Part I - Infrastructure, and the initial test of Part II- Environment, was conducted from 15 February - 30 April 1994. When briefed on the results of this expanded field test, *the Chief of Staff, Army approved CONUS implementation of the ISR, Part I Infrastructure, for 3rd quarter, FY95. The CSA directed OASA(FM) and ORCEN to do more work on Part II before it is implemented Army-wide.*

A detailed presentation of the test results, data, feedback, issues raised and solutions worked, and lessons learned is presented in the ORCEN's "Installation Status Report, Part I-Infrastructure, Part II - Environment Expanded Field Test After Action Report", dated 1 April 1995. This chapter summarizes the important points of the full after action report.

#### 3.1. Background Information.

This expanded field test involved the following MACOMs and installations:

AMC	FORSCOM	TRADOC	MDW	USARPAC	HSC	MTMC
Aberdeen Proving Grounds *	Fort Bragg	Fort Gordon*	Fort Belvoir*	Schofield Barracks	Fort Detrick	Military Ocean Terminal, Bayonne
Anniston Army Depot *	Fort Campbell *	Fort Knox *	Fort Ritchie	Fort Richardson (Part II only)		
Redstone Arsenal *	Fort Carson*	Fort Sill				
Rock Island Arsenal	Fort Drum	Fort Benning*				
Natick Research & Develop. Center	Fort Hood *	Carlisle Barracks				
	Fort Stewart	Fort Eustis				
	Fort Lewis					
	Fort Riley*					

\* Indicates installations involved in the first field test of Part I Infrastructure

After the CSA directed the expanded field test on 4 November 1993, the ISR development team continued refinements to Part I recommended from the initial field test. The team also completed the initial field test package for Part II, briefed the leadership at each of the newly identified test installations and MACOMs, and conducted centralized train the trainer sessions for MACOM and installation points of contact (POCs). **A key lesson learned throughout the ISR development process is that providing information briefings to installation and MACOM leadership is definitely worth the time and effort expended.** The insights gained from the installation and MACOM leadership and their desire to "buy into" the ISR effort helped improve the field test process and, therefore, the overall ISR system. **Training also proved to be important.** Since the ISR is a new process, the Army needs to be educated on how to implement the system.

### **3.2. Test Feedback.**

The ISR development team received feedback from test installations by conducting in-progress assistance and validation visits to 24 of the 25 test sites, through feedback surveys completed by installation commanders and ISR action officers, and through post test teleconference after action reviews. Some of the key learning points from this feedback were:

1. Installation Commanders gave strong support to the idea of using C-ratings to describe infrastructure. The current ISR area structure is adequate to cover the major types of infrastructure found on most posts.
2. Installation commanders and action officers do not feel very confident in the costing or resource aspects of the ISR.
3. Both the G-3, Directorate of Plans and Training and the Directorate of Public works (DPW) office are the main activities used as an installation's lead ISR office.
4. The inspection process is most efficiently completed using both centralized teams for common facilities (e.g. installation utility systems) and individual facility users.
5. The facility requirements and assets data edit process is needed for the ISR to accurately portray infrastructure conditions.

Test MACOMs generally believed the ISR provides a realistic overview on the readiness of the MACOM's infrastructure and that Army-wide standards are extremely useful in communicating HQDA vision of facilities excellence. They also felt the ISR is a valuable management tool for real property managers. However, MACOMs believed the ISR estimated costs are under/overstated as compared to installation and MACOM data and, therefore, they are uncomfortable using this data in budget decision processes.

### 3.3. Test Data.

Below is a table with the five major infrastructure area C-ratings reported by the test installations.

INSTALLATION	MISSION FACILITIES	STRATEGIC MOBILITY	HOUSING	COMMUNITY FACILITIES	UTILITY SYSTEMS
<b>MDW</b>					
FT RITCHIE	C3	C3*(C4)	C3	C3	C3
FT BELVOIR	C3	C2	C3	C3	C3
<b>FORSCOM</b>					
FT CARSON	C2	C2	C3*(C2)	C3*(C2)	C3*(C2)
FT STEWART	C3	C3	C3	C3	C3
FT RILEY	C2	C2	C3	C2	C2
FT CAMPBELL	C3	C3	C3	C3	C2
FT DRUM	C2	C2	C2*(C3)	C2	C1
FT BRAGG	C3	C2	C3	C3	C2
FT HOOD	C3	C2	C3	C3	C3
FT LEWIS	C3	C3	C3	C2	C2
<b>AMC</b>					
ANNISTON	C2	C2	C1	C3	C2
REDSTONE	C2	C3*(C2)	C3	C2	C3
ROCK ISLAND	C3	C3	C4	C3	C2
ABERDEEN	C3	C4	C4*(C3)	C3	C3
NATICK	C2	C1	C3	C2	C2
<b>TRADOC</b>					
FT BENNING	C3	C3	C3	C3	C3*(C2)
FT GORDON	C3	C2	C2*(C3)	C3	C2
FT KNOX	C3	C3	C3	C2	C2
FT SILL	C3	C3	C3	C2*(C3)	C2
CARLISLE BKS	C2	C2	C3	C2	C1
FT EUSTIS	C4	C4*(C3)	C4	C3	C3
BAYONNE MTMC	C2	C2	C3	C3	C2
FT DETRICK HSC	C2*(C3)	C2	C2	C2*(C3)	C1

#### Test Reported Part I Area C-Ratings

\* Indicates a Commander's C-Rating Overwrite

Rating in brackets was the calculated rating prior to overwrite

C-Ratings for the component categories and sub-categories of each ISR area are provided in Appendix C.

### 3.4. Cost Estimates.

The second field test of the ISR Part I Infrastructure used three cost factors -- renovation, new construction and sustainment -- each of which had been adjusted based on the results from the initial field test. The strength of the ISR cost estimates are that they will provide, for the first time, *a consistent estimate of the resource requirements to sustain and improve facilities and installations*. These estimates will be used (at HQDA level) in comparing resource plans during the Program Operating Memorandum (POM) building process. CEAC used several methods to validate the Part I renovation, sustainment, and new construction cost factors after the test. By comparing actual inspection worksheets to project cost estimates, comparing new construction costs to private industry-wide costs and the Unconstrained Requirements Report (URR) costs, and by comparing the Sustainment cost factors, Army-wide value, to both FY 93 actual costs and the URR, CEAC validated these factors as useful to forecast *Army-wide requirements*.

### 3.5. Initial Test of Part II - Environment.

The expanded test of the ISR included the first test of the Part II - Environment status report. The purpose of Part II is to provide a macro-level status of environmental conditions on installations evaluated against an Army-wide set of standards. The test MACOMs and installations voiced several concerns with the original standards, prompting OASA(FM) and ACSIM to jointly sponsor a Part II standards workshop in May 1994 at the Army's Environmental Center (AEC). Representatives from seven of the test installations and three of the test MACOMs, together with the AEC, ACSIM and ORCEN, revised the standards and sent them back out to the installations for re-testing. Installations still had concerns with these revisions so Part II will be further refined and tested prior to implementation.

### 3.6. Value Added by the ISR.

These are consensus feedback comments from both HQDA and MACOM staffs regarding the potential value added of the ISR:

- (1) The ISR now gives a *Commander's overview* of the status of facility conditions on an installation.
- (2) The ISR data provides an assessment of conditions now measured against a common set of standards, thus "leveling the playing field".
- (3) The ISR will help highlight key, systemic problem areas so that the leadership can focus resources to the areas of most need.
- (4) The ISR will aid decision makers in stationing analysis.

(5) The ISR will better help the DA staff to meet the requirements of the Chief Financial Officer's (CFO) Act. Also, the ISR process is in keeping with the guidelines of the National Performance Review and the Government Performance Review Act.

(6) The ISR will eventually help the Army defend resource requirements for its installations to the Defense Department and Congress since these resource requirements are generated using a standard system.

### **3.7. Continuing Issues.**

After analyzing all the feedback and test data, these issues stand out as needing the most emphasis in further improving Part I of the ISR:

(1) **C-Ratings:** A weighting scheme may need to be incorporated into the software to account for relative asset size and importance to the installation.

(2) **Implementing Instructions:** The instructions should provide more detail on the operational aspects of implementing the ISR and improved instructions for completing the appropriations reports.

(3) **Inspection Process:** The format of the inspection worksheet should incorporate instructions on determining the overall facility color rating.

(4) **Database / RPLANS Concerns:** The CATCODE structure for training ranges needs to be updated to better capture the range capabilities at installations. RPLANS algorithms for training range requirements need to be revised and staffed with the ODCSOPS. Also, RPLANS algorithms for Child Development Centers and Maneuver Areas need to be updated.

(5) **Standards:** Standards improvements should focus on these categories of facilities: training ranges; utility systems; airfields; child development centers; information management; and outdoor sports and recreation facilities.

(6) **Workload Issue:** The Army leadership should follow through on the CSA's directive to phase-out and replace these reports with the ISR:

- (a) The Unconstrained Requirements Report (URR);
- (b) The Installation Commander's Annual Real Property Utilization Survey (ICARPUS);
- (c) The Backlog of Maintenance and Repair report (BMAR);
- (d) The Deferred Maintenance and Repair report (DMAR);
- (e) The Triennial facility inspection requirement.

(7) **Cost Reports:** The cost factors need to be continually updated as the ISR evolves. As more data becomes available over time, cost factors can be adjusted to improve accuracy. However, the Army will have to be educated on how to use ISR cost estimates.

## Appendix A - Initial Field Test C-Rating Data

### Installation and Area Test C-Ratings

ISR Area	AMC			TRADOC			FORSCOM			MDW	
	Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
Mission	C-3	C-2*	C-3	C-4	C-3	C-3	C-4	C-2*	C-3*	C-3	C-3
Facilities		(C-3)						(C-3)	(C-4)		
Mobility	C-4	C-3	C-3	C-3	C-2*	C-3	C-3	C-2*	C-3	C-2	C-3
Facilities					(C-3)			(C-4)			
Housing	C-3	N/A*	C-3	C-3	C-2*	C-3	C-3	C-3	C-3	C-3	C-3
Facilities		(C-3)			(C-3)						
Community	C-3	C-2*	C-2	C-3	C-2*	C-2	C-4	C-2*	C-3	C-3	C-3
Facilities		(C-3)			(C-3)			(C-3)			
Utility	C-3	C-2*	C-3	C-3	C-3	C-2	C-3	C-2	C-3	C-2*	C-3
Systems		(C-3)								(C-3)	
Reserve	N/A	N/A	N/A	C-4	N/A*	C-1	N/A	C-2	N/A	C-2*	C-4
Facilities					(C-4)					(C-3)	
Nat. Guard	C-1	N/A	N/A	N/A	N/A	N/A	N/A	C-2	N/A	C-2*	N/A
Facilities										(C-3)	
Overall	C-3	C-2*	C-3	C-3	C-3	C-2	C-3	C-2*	C-3	C-2*	C-3

- Notes:
1. \* Indicates a Commander's C-rating Overwrite
  2. Rating in Brackets was calculated rating prior to overwrite.

**The overall installation C-rating was removed from the ISR after the first test. Feedback was that the overall rating provided little utility to the report.**

## Mission Area Sub-Category Ratings

Area	MISSION	Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
		C-3	C-2* (C-3)	C-3	C-4	C-3	C-3	C-4	C-2* (C-3)	C-3* (C-4)	C-3	C-3
Category	Tng Rng/Area											
Sub-Category	Ind Wpn Rng	C-4	C-4	C-4	C-2	C-2	C-2	C-3	C-3	C-4	C-3	C-4
"	Maj Wpn Rng	N/A	N/A	N/A	C-4	N/A	C-2	C-4	C-2	C-3	C-3	N/A
"	Manuvr Area	C-4	N/A	C-4	C-2	C-2	C-2	C-1	C-2	C-4	C-3	C-4
Category	Maint & Prod											
Sub-Category	Maint Fac	C-2	C-2	C-2	C-3	C-4	C-3	C-3	C-3	C-3	C-3	C-2
"	Prod Fac	C-2	C-1	C-2	C-4	C-4	C-4	N/A	C-4	C-1	C-1	C-3
Category	Classrooms											
Sub-Category	Gen Pur Inst	C-3	C-4	C-4	C-3	C-2	C-4	C-4	C-4	C-4	C-3	C-3
"	Applied Inst	C-3	C-4	C-2	C-4	C-3	C-4	C-4	C-4	C-4	C-4	C-3
Category	Res & Devel											
Sub-Category	R&D Bldg	C-3	N/A	C-3	C-4	C-2	N/A	N/A	C-4	N/A	N/A	C-2
"	R&D Ranges	C-4	N/A	C-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	C-2
Category	Sup & Strg											
Sub-Category	Bulk Fuel	C-3	C-4	C-1	C-4	C-2	C-2	C-4	C-4	C-3	C-4	C-4
"	Gen S&S	C-4	C-2	C-3	C-3	C-3	C-3	C-3	C-3	C-3	C-3	C-3
Category	Invl Ammo Stg											
Sub-Category	Ammo Strg	C-4	C-2	C-3	C-3	C-2	C-1	C-3	C-1	C-3	C-3	C-2
"	Ammo Maint	C-4	C-2	C-2	N/A	N/A	N/A	N/A	N/A	C-4	C-4	N/A
Category	Admin Facil											
Sub-Category	Unit Ops	C-3	N/A	C-3	C-3	C-3	C-4	C-3	C-3	C-4	C-3	C-2
"	Gen Pur Adm	C-3	C-3	C-3	C-3	C-3	C-3	C-4	C-3	C-3	C-3	C-3
"	Confinmt Fac	N/A	N/A	N/A	C-3	C-4	C-2	C-4	C-1	C-4	C-3	N/A



## Strategic Mobility Facilities Area Sub-Category Ratings

		Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
Area	<b>MOBILITY</b>	C-4	C-3	C-3	C-3	C-2* (C-3)	C-3	C-3	C-2* (C-4)	C-3	C-2	C-3
Category	Road & Trail											
Sub-Category	Surf Roads	C-2	C-2	C-2	C-2	C-3	C-3	C-3	C-2	C-3	C-2	C-3
"	Brdg&US Rd	C-4	C-4	C-4	C-4	C-2	C-4	C-2	C-4	C-4	C-4	C-4
Category	Railroads											
Sub-Category	Track	C-4	C-3	C-1	C-2	C-2	C-2	C-4	C-4	C-1	C-1	C-1
"	Facilities	C-4*	N/A	N/A	C-4*	N/A	N/A	N/A	N/A	C-3*	N/A	N/A
Category	Airfield											
Sub-Category	Facilities	C-4	C-4	C-4	C-4	N/A	C-4	C-3	C-4	C-3	C-2	C-2
"	Pavements	C-3	C-4	C-3	C-2	C-3	C-3	C-2	C-3	C-2	C-3	C-3
Category	Ports											
Sub-Category	Pier/Wharf	C-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
"	Stg/Marshl	N/A	N/A	C-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
"	Rail/Truck	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
"	Intermodal	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

## Housing Area Sub-Category Ratings

		Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
Area	<b>HOUSING</b>	C-3	N/A* (C-3)	C-3	C-3	C-2* (C-3)	C-3	C-3	C-3	C-3	C-3	C-3
Category	Fam Housing											
Sub-Category	Fam Housing	C-3	C-1	C-3	C-4	C-2	C-3	C-3	C-2	C-3	C-3	C-3
Category	UPH											
Sub-Category	SEBQ/BOQ	C-3	C-4	C-4	C-3	C-4	C-4	C-4	C-4	C-4	C-4	C-4
"	Barracks	C-3	C-4	C-3	C-3	C-4	C-4	C-4	C-3	C-3	C-4	C-4
"	Transient	C-4	C-4	C-4	C-2	C-4	C-1	C-2	C-4	C-2	C-1	C-4
Category	Dining Fac											
Sub-Category	Dining Fac	C-2	C-4	C-2	C-3	C-4	C-3	C-3	C-2	C-3	C-3	C-2

## Community Facilities Area Sub-Category Ratings

Area	ISR Area	AMC				TRADOC			FORSCOM			MDW Belvoir
		Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	
Area	COMMUNITY	C-3	C-2* (C-3)	C-2	C-3	C-2* (C-3)	C-2	C-4	C-2* (C-3)	C-3*	C-3	C-3
Category	Post Exch											
Sub-Category	Post Exch	C-3	C-3	C-2	C-4	C-4	C-2	C-3	C-3	C-3	C-3	C-3
Category	Commissary											
Sub-Category	Commissary	C-2	C-4	C-2	C-2	C-2	C-1	C-4	C-2	C-3	C-4	C-4
Category	Hospt/Medical											
Sub-Category	Dental Clinic	C-3	C-4	C-2	C-4	C-2	C-2	C-3	C-1	C-4	C-1	C-2
"	Hospital	C-2	C-4	C-1	C-4	C-2	C-2	C-1	C-1	C-3	C-1	C-3
"	Trp Med Clin	C-2	C-1	C-3	C-3	C-2	C-3	C-4	C-3	C-3	C-3	C-4
"	Vet Facility	C-2	N/A	C-2	C-3	C-4	C-2	C-4	C-4	C-4	C-2	C-4
Category	Child Dev Ctr											
Sub-Category	Child Dev Ctr	C-4	C-4	C-4	C-4	C-4	C-4	C-4	C-4	C-4	C-4	C-4
Category	Community Spt											
Sub-Category	Educato Fac	C-4	N/A	C-1	C-3	C-2	C-2	C-4	C-2	C-4	C-3	C-3
"	Phys Fit Ctr	C-4	N/A	C-3	C-4	C-2	C-4	C-4	C-4	C-4	C-2	C-4
"	OD Sprt/Recn	C-4	C-4	C-2	C-3	C-3	C-4	C-4	C-4	C-4	C-4	C-3
"	Recreatn Fac	C-3	C-4	C-2	C-3	C-2	C-3	C-4	C-4	C-4	C-3	C-2
"	Service Fac	C-4	C-2	C-2	C-4	C-3	C-3	C-3	C-3	C-4	C-3	C-4

### Utility Systems Area Sub-Category Ratings

Area	ISR Area	AMC			TRADOC			FORSCOM			MDW	
		Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
Area	<b>UTILITY SYSTEMS</b>	C-3	C-2* (C-3)	C-3	C-3	C-3	C-2	C-3	C-2	C-3	C-2* (C-3)	C-3
Category	Heat/AC											
Sub-Category	Source/Dstn	C-3	C-2	C-3	C-4	C-4	C-2	C-2	C-3	C-3	C-2	C-3
Category	Elect/Gas											
Sub-Category	Source/Dstn	C-3	C-2	C-2	C-4	C-2	C-2	C-3	C-3	C-2	C-3	C-4
Category	Water											
Sub-Category	Tmt/Stg/Dn	C-4	C-3	C-3	C-3	C-4	C-2	C-3	C-3	C-4	C-3	C-2
Category	Sewer											
Sub-Category	Tmt/Dsp/Cn	C-3	C-3	C-4	C-2	C-2	C-3	C-3	C-2	C-2	C-2	C-2
Category	Info Mgt											
Sub-Category	Info Mgt	C-4*	N/A	C-1*	C-3*	N/A	N/A	C-4*	C-1*	C-4*	N/A	N/A

### Reserve and National Guard Facilities Area Sub-Category Ratings

Area	ISR Area	Aberdeen	Anniston	Redstone	Benning	Gordon	Knox	Campbell	Carson	Hood	Riley	Belvoir
Area	<b>RESERVE</b>	N/A	N/A	N/A	C-4	N/A* (C-4)	C-1	N/A	C-2	N/A	C-2* (C-3)	C-4
Category	Reserve Fac											
Sub-Category	Reserve Fac	N/A	N/A	N/A	C-4	C-4	C-1	N/A	C-2	N/A	C-3	C-4
Area	<b>NATIONAL GUARD</b>	C-1	N/A	N/A	N/A	N/A	N/A	N/A	C-2	N/A	C-2* (C-3)	C-4
Category	Nat Guard											
Sub-Category	NatGuard	C-1	N/A	N/A	N/A	N/A	N/A	N/A	C-2	N/A	C-3	N/A

## Appendix B - Initial Field Test Objectives Validation

The primary objective of the field test was to validate the ISR prototype as an effective tool for infrastructure management. Validating of the ISR focused on measuring the extent to which the system met these design objectives:

### ISR OBJECTIVES (Installations)

Provide the installation commander a decision support system that:

1. assesses installation conditions
2. uses HQDA established Army-wide standards
3. articulates installation needs
4. estimates installation requirements for sustainment/renewal resources
5. assists in prioritizing projects
6. assists in allocation of resources
7. measures progress

### ISR OBJECTIVES (MACOM AND HQDA)

1. Provide a current status to MACOMs and HQDA of the conditions of Army installations.
2. Provide indicators to MACOMs and HQDA that:
  - a. represent Army-wide facility conditions and trends;
  - b. identify areas which degrade installation conditions;
  - c. identify the shortfalls on installations between existing and required facilities;
  - d. identify the difference between the actual condition of facilities on installations and Army-wide standards;
  - e. identify mitigating factors that impact facility requirements and conditions.
3. Assist HQDA, MACOMs and installation commanders in allocating resources and prioritizing programs to upgrade installation conditions.
4. Assist MACOMs and HQDA with information for determining changes in Army policy or in determining needs for new policies.
5. Assist HQDA with information for use with Total Army Basing Study (TABS); Base Closure and Realignment (BRAC); Counter Stationing and Force Structure decisions).

### CUSTOMER SURVEY

One method used for evaluating how well the ISR met its design objectives was a feedback survey. Each test installation and MACOM was asked to complete a "customer" feedback survey designed based on Total Quality Management (TQM) concepts. The remainder of this appendix will present survey results and conclusions.

This feedback survey evaluated objectives 1 and 2 through a series of questions, while one question assessed each of objectives 3 through 7. The installations also provided feedback on other facets of the ISR system. The answer format for each of the survey questions was:

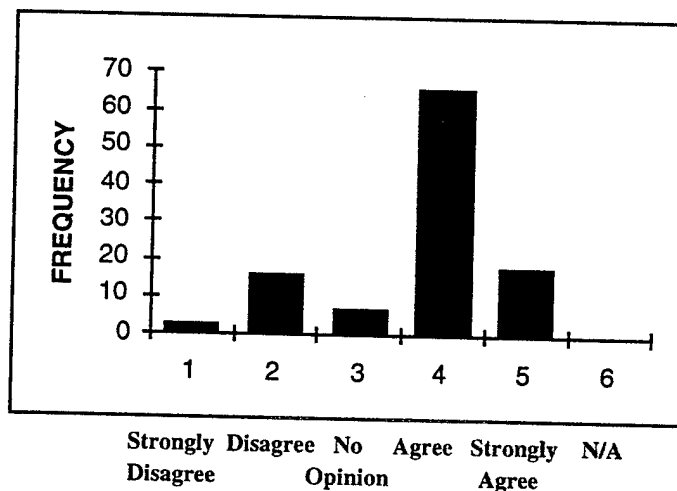
1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

The survey requested explanations of any strongly disagree or disagree responses, along with suggestions for improvement. Since the sample population is small (11 survey results), the raw data of response frequency gives the best picture of how well the ISR met its objectives.

### **OBJECTIVE #1 - ISR Assesses Installation Conditions.**

The installations responded to ten questions in evaluating this objective. The questions assessed whether the ISR captures installation infrastructure correctly in the current delineation of areas, categories and sub-categories. This graph depicts the responses from all installations to the ten questions:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 10 questions each assessing this objective).

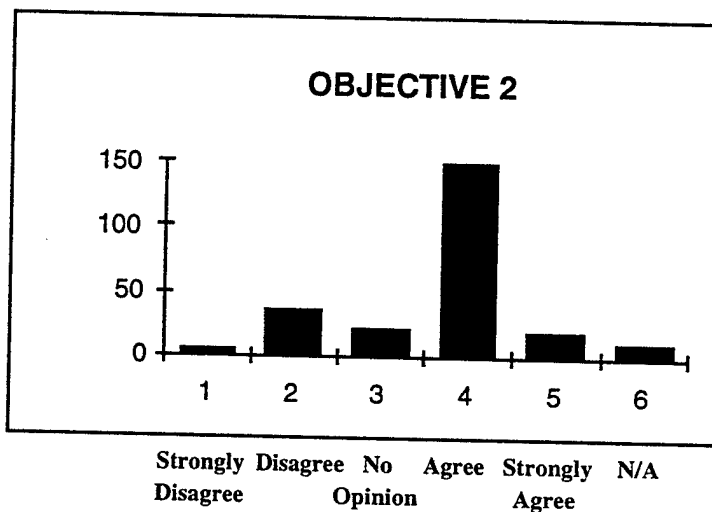


The survey responses support the conclusion that the ISR does assess installation conditions.

## OBJECTIVE #2 - ISR Establishes Army Wide Standards.

The installations responded to twenty-three questions in evaluating this objective. The questions assessed whether the standards used in each infrastructure category are reasonably simple to use, yet valid. This graph depicts the responses to all twenty-three questions:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 23 questions each assessing this objective).

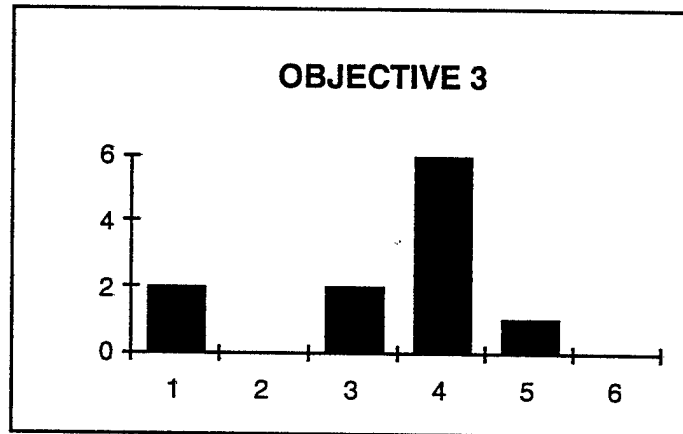


**These responses strongly support the conclusion that the ISR standards are relatively simple to use, yet valid.** Specific concerns regarding the standards have been incorporated into the revised facility standards.

### OBJECTIVE #3 - ISR Articulates Installation Needs.

The installations responded to one question in evaluating this objective. The question assessed if, overall, the ISR is an effective means for describing the needed improvements to the infrastructure on an installation. This graph depicts the responses to the question:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 1 question assessing this objective).



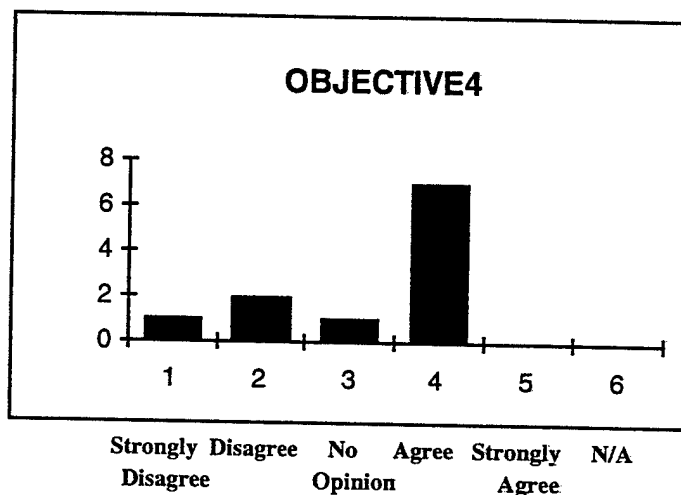
Strongly Disagree   Disagree   No Opinion   Agree   Strongly Agree   N/A

The majority of the test installations (7 of 11) support that the ISR is an effective means for describing the needed improvements to the infrastructure on an installation.

#### **OBJECTIVE #4 - ISR Estimates Resources.**

The installations responded to one question which assessed if the ISR could effectively (although not precisely) articulate resource requirements to correct infrastructure shortcomings. This graph depicts the responses to the question:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 1 question assessing this objective).



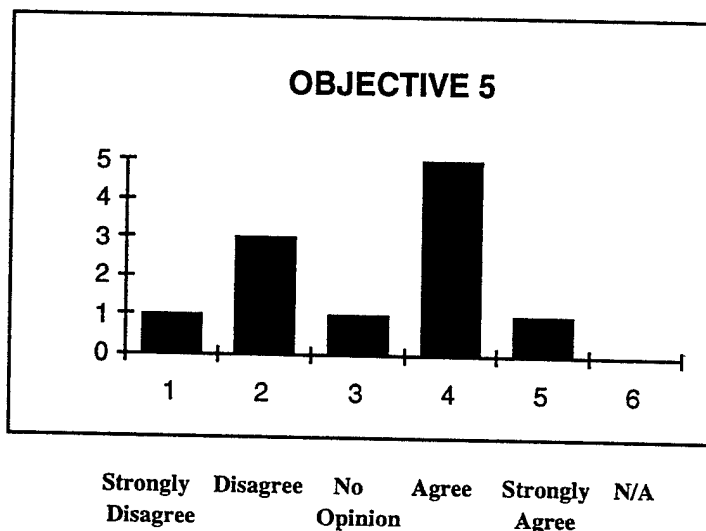
The majority of the test installations (7 of 11) support that the ISR could effectively (although not precisely) articulate resource requirements to correct infrastructure shortcomings.



### OBJECTIVE #5- ISR Assists in Prioritizing Projects.

One question assessed if the ISR could assist in prioritizing projects and/or programs at the installation level. This graph depicts the responses:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 1 question assessing this objective).

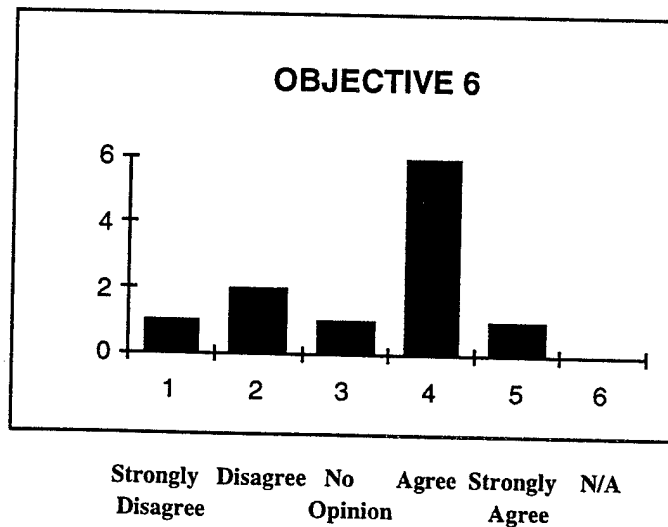


The installations provided mixed feedback on this objective. Six agreed the ISR could assist in prioritizing programs and projects while 4 disagreed. Some installations felt the ISR could assist in the Master Planning Process. Future decision support uses of the ISR should demonstrate its utility in prioritizing programs and projects.

### OBJECTIVE #6- ISR Assists in Allocating Resources.

The installations responded to one question which assessed if the ISR could assist in allocating resources at the installation level. This graph depicts the responses to the question:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 1 question assessing this objective).

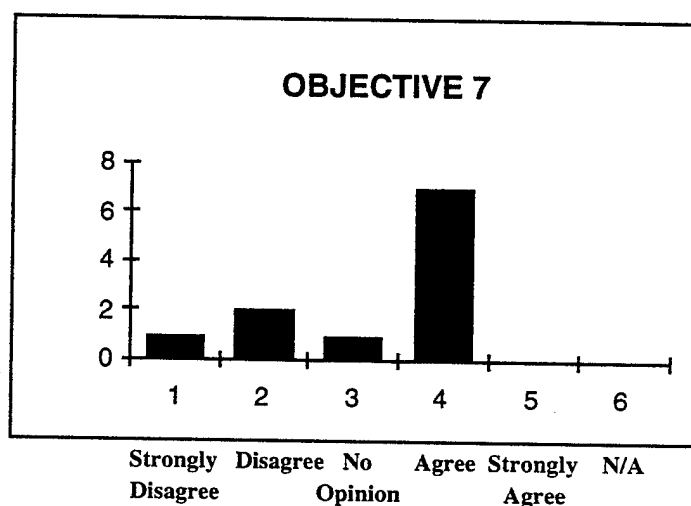


The installations supported the ISR in meeting this objective. Seven agreed the ISR could assist in allocating resources while 3 disagreed. The ISR can give Commanders a picture of where their true infrastructure problems are and, thus, lead to resource decisions to correct these shortcomings.

#### **OBJECTIVE #7 - ISR Measures Progress Towards Infrastructure Improvements**

One question assessed if the ISR provides a measure for evaluating infrastructure improvement. This part of the ISR system was not exercised during the test because it measures how installations use resources allocated to them based on previous ISRs. The survey results are, therefore, not based on actual use of these reports. This graph depicts the responses:

The horizontal axis shows the response categories: Strongly Disagree, Disagree, No Opinion, Agree, Strongly Agree, Not Applicable. The vertical axis depicts the total number of survey responses (11 surveys with 1 question assessing this objective).



Seven of the installations believed the ISR method for measuring progress will be adequate.

## Appendix C - Part I C-Rating Data from the Expanded Field Test

### MISSION FACILITIES AREA MACOMs: MDW, MTMC, HSC

Category / Sub-Category	Ft Ritchie	Ft Belvoir	Bayonne	Ft Detrick
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-3</b>	<b>C-2</b>	<b>C-2*</b>
Category: Training Ranges & Areas				
Individual Weapon Qual. Ranges	C-4	C-4	C-2	N/A
Major Weapon System Ranges	N/A	C-4	N/A	N/A
Maneuver areas	C-4	C-4	N/A	N/A
Category: Maintenance & Production Facilities				
Maintenance Facilities	C-3	C-3	C-4	C-3
Production Facilities	N/A	C-3	C-1	C-1
Category: Classrooms				
General Purpose Instruction Fac.	C-3	C-3	C-2	C-4
Applied Instruction Facilities	C-4	C-2	N/A	C-4
Category: Research & Development				
Research & Development Bldg.	N/A	C-2	N/A	C-3
Research & Development Ranges	N/A	C-2	N/A	N/A
Category: Supply & Storage Fac.				
Bulk Fuel Receipt, Issue & Storage Site	C-3	C-3	C-3	C-3
General Supply & Storage Facilities	N/A	N/A	N/A	N/A
Category: Conventional Ammunition Fac.				
Ammunition Storage Facilities	C-4	C-2	N/A	N/A
Ammunition Maintenance Facilities	N/A	N/A	N/A	N/A
Category: Administrative Facilities				
Unit Operations Buildings	C-3	C-2	N/A	C-4
General Purpose Administrative Fac.	C-3	C-3	C-2	C-3
Confinement Facilities	N/A	N/A	N/A	N/A
Category: Information Management				
Information Management	C-2	N/A	C-2	C-1

**MISSION FACILITIES AREA  
MACOM: FORSCOM**

Category / Sub-Category	Fort Carso n	Fort Stewart	Fort Riley	Fort Camp -bell	Fort Drum	Fort Bragg	Fort Hood	Fort Lewis
<b>AREA C-RATING</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2*</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>
Cat: Training Ranges & Areas								
Individual Weapon Qual. Rg.	C-2	C-2	C-2	C-2	C-2	C-3	C-3	C-2
Major Weapon System Rgs.	C-2	C-3	C-2	C-3	C-2	C-4	C-2	C-3
Maneuver areas	C-2	C-2	C-1	C-1	C-2	C-2	C-1	N/A
Cat: Maint. & Production Fac.								
Maintenance Facilities	C-1	C-3	C-2	C-3	C-2	C-3	C-3	C-2
Production Facilities	C-4	N/A	C-1	N/A	N/A	C-2	N/A	N/A
Cat: Classrooms								
General Purp. Instruction Fac.	C-4	C-4	C-3	C-4	C-4	C-3	C-4	C-3
Applied Instruction Facilities	C-3	C-3	C-2	C-3	C-4	C-3	C-3	C-3
Cat: Research & Dev. (R&D)								
R&D Buildings	C-1	C-1	N/A	N/A	N/A	C-3	C-2	N/A
R&D Ranges	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cat: Supply & Storage Fac.								
Bulk Fuel Receipt, Issue & Storage Site	C-3	C-3	C-3	C-3	C-2	C-3	C-3	C-3
General Supply & Storage	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cat: Conventional Ammo. Fac.								
Ammunition Storage Fac.	C-1	C-1	C-3	C-2	C-2	C-4	C-2	C-2
Ammo. Maintenance Fac.	N/A	C-1	C-1	N/A	C-1	C-1	C-4	N/A
Cat: Administrative Facilities								
Unit Operations Buildings	C-2	C-3	C-3	C-4	C-2	C-4	C-4	C-3
General Purpose Admin. Fac.	C-2	C-4	C-3	C-4	C-3	C-3	C-2	C-3
Confinement Facilities	C-1	C-4	C-1	C-4	N/A	N/A	C-4	C-3
Cat: Information Management								
Information Management	N/A	C-4	C-1	C-4	C-2	N/A	C-4	C-4

**MISSION FACILITIES AREA  
MACOM: TRADOC**

<b>Category / Sub-Category</b>	<b>Fort Benning</b>	<b>Fort Gordon</b>	<b>Fort Knox</b>	<b>Fort Sill</b>	<b>Carlisle Barracks</b>	<b>Fort Eustis</b>
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>	<b>C-4</b>
Cat: Training Ranges & Areas						
Individual Weapon Qual. Rg.	C-2	C-3	C-2	C-3	N/A	C-3
Major Weapon System Rgs.	C-4	C-4	C-2	C-3	N/A	N/A
Maneuver areas	C-4	C-2	C-2	C-4	N/A	C-4
Cat: Maint. & Production Fac.						
Maintenance Facilities	C-3	C-4	C-3	C-3	C-2	C-3
Production Facilities	C-4	C-4	C-4	C-3	C-2	C-4
Cat: Classrooms						
General Purp. Instruction Fac.	C-3	C-2	C-4	C-4	C-2	C-3
Applied Instruction Facilities	C-4	C-3	C-3	C-2	C-1	C-4
Cat: Research & Dev. (R&D)						
R&D Buildings	C-4	C-2	N/A	C-4	C-2	C-4
R&D Ranges	N/A	N/A	N/A	N/A	N/A	N/A
Cat: Supply & Storage Fac.						
Bulk Fuel Receipt, Issue & Storage Site	C-3	C-3	C-3	C-4	C-2	C-3
General Supply & Storage	N/A	N/A	N/A	N/A	N/A	N/A
Cat: Conventional Ammo. Fac.						
Ammunition Storage Fac.	C-3	C-2	C-1	C-2	N/A	C-4
Ammo. Maintenance Fac.	N/A	N/A	N/A	C-4	N/A	N/A
Cat: Administrative Facilities						
Unit Operations Buildings	C-3	C-3	C-3	C-3	C-1	C-3
General Purpose Admin. Fac.	C-3	C-2	C-3	C-3	C-3	C-4
Confinement Facilities	C-2	N/A	C-2	C-2	N/A	N/A
Cat: Information Management						
Information Management	C-3	C-4	C-2	C-3	C-1	C-3

**MISSION FACILITIES AREA**  
**MACOM: AMC**

<b>Category / Sub-Category</b>	<b>Anniston Army Depot</b>	<b>Redstone Arsenal</b>	<b>Rock Island Arsenal</b>	<b>Aberdeen Proving Grounds</b>	<b>Natick R&amp;D Center</b>
<b>AREA C-RATING</b>	<b>C-2</b>	<b>C-2</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>
Cat: Training Ranges & Areas					
Individual Weapon Qual. Rg.	N/A	C-2	C-4	C-3	N/A
Major Weapon System Rgs.	N/A	N/A	N/A	C-4	N/A
Maneuver areas	N/A	N/A	N/A	C-4	N/A
Cat: Maint. & Production Fac.					
Maintenance Facilities	C-2	C-2	C-3	C-2	C-1
Production Facilities	C-1	C-2	C-2	C-2	N/A
Cat: Classrooms					
General Purp. Instruction Fac.	C-2	C-4	C-2	C-3	C-3
Applied Instruction Facilities	N/A	C-2	C-3	C-3	N/A
Cat: Research & Dev. (R&D)					
R&D Buildings	N/A	C-2	C-3	C-3	C-2
R&D Ranges	N/A	C-2	N/A	C-4	N/A
Cat: Supply & Storage Fac.					
Bulk Fuel Receipt, Issue & Storage Site	C-2	C-3	C-2	C-3	C-3
General Supply & Storage	N/A	N/A	N/A	N/A	N/A
Cat: Conventional Ammo. Fac.					
Ammunition Storage Fac.	C-2	C-2	C-2	C-4	N/A
Ammo. Maintenance Fac.	C-3	C-2	N/A	C-3	N/A
Cat: Administrative Facilities					
Unit Operations Buildings	C-1	C-3	N/A	C-2	C-4
General Purpose Admin. Fac.	C-2	C-3	C-3	C-3	C-1
Confinement Facilities	N/A	N/A	N/A	N/A	N/A
Cat: Information Management					
Information Management	C-2	C-2	C-4	N/A	C-2

**STRATEGIC MOBILITY AREA**  
**MACOMs: MDW, MTMC, HSC**

<b>Category / Sub-Category</b>	<b>Ft Ritchie</b>	<b>Ft Belvoir</b>	<b>Bayonne</b>	<b>Ft Detrick</b>
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-2</b>	<b>C-2</b>	<b>C-2</b>
Category: Road & Trail Network				
Surfaced Roads	C-3	C-2	C-2	C-3
Category: Railroad				
Railroad Track	N/A	C-1	C-1	N/A
Railhead Facilities	C-5	N/A	N/A	N/A
Category: Airfield				
Airfield Facilities	C-4	C-2	N/A	N/A
Airfield Pavements	N/A	C-3	N/A	C-1
Category: Ports				
Piers & Wharfs	N/A	C-2	C-4	N/A
Staging & Marshaling Facilities	N/A	N/A	C-2	N/A
Rail & Truck Operations Areas	C-5	N/A	C-1	N/A
Terminal Intermodal Facilities	C-5	N/A	N/A	N/A

**STRATEGIC MOBILITY AREA  
MACOM: FORSCOM**

<b>Category / Sub-Category</b>	<b>Fort Carso n</b>	<b>Fort Stewart</b>	<b>Fort Riley</b>	<b>Fort Camp -bell</b>	<b>Fort Drum</b>	<b>Fort Bragg</b>	<b>Fort Hood</b>	<b>Fort Lewis</b>
<b>AREA C-RATING</b>	<b>C-2</b>	<b>C-3*</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>	<b>C-2</b>	<b>C-2</b>	<b>C-3</b>
Cat: Road & Trail Network								
Surfaced Roads	C-2	C-2	C-2	C-3	C-2	C-2	C-2	C-3
Cat: Railroad								
Railroad Track	C-1	C-1	C-1	C-4	C-1	C-1	C-1	C-4
Railhead Facilities	N/A	C-4	N/A	N/A	N/A	N/A	C-3	N/A
Cat: Airfield								
Airfield Facilities	C-1	C-3	C-2	C-3	C-1	C-1	C-2	C-2
Airfield Pavements	C-2	C-2	C-2	C-2	C-2	C-2	C-2	C-2
Cat: Ports								
Piers & Wharfs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Staging & Marshaling Facilities	N/A	N/A	N/A	N/A	N/A	C-4	N/A	N/A
Rail & Truck Operations Areas	N/A	C-5	N/A	N/A	N/A	N/A	N/A	N/A
Terminal Intermodal Facilities	N/A	C-5	N/A	N/A	N/A	N/A	N/A	N/A



**STRATEGIC MOBILITY AREA  
MACOM: TRADOC**

<b>Category / Sub-Category</b>	<b>Fort Benning</b>	<b>Fort Gordon</b>	<b>Fort Knox</b>	<b>Fort Sill</b>	<b>Carlisle Barracks</b>	<b>Fort Eustis</b>
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-3*</b>	<b>C-2</b>	<b>C-4*</b>
Cat: Road & Trail Network						
Surfaced Roads	C-2	C-2	C-2	C-3	C-3	C-3
Cat: Railroad						
Railroad Track	C-2	C-2	C-2	C-1	N/A	C-2
Railhead Facilities	C-4	N/A	N/A	C-4	C-5	C-4
Cat: Airfield						
Airfield Facilities	C-4	N/A	C-4	C-2	N/A	C-2
Airfield Pavements	C-2	C-1	C-3	C-2	C-1	C-2
Cat: Ports						
Piers & Wharfs	N/A	N/A	N/A	N/A	N/A	C-4
Staging & Marshaling Facilities	N/A	N/A	N/A	N/A	N/A	C-3
Rail & Truck Operations Areas	N/A	N/A	N/A	N/A	C-5	C-4
Terminal Intermodal Facilities	N/A	N/A	N/A	N/A	C-5	C-2

**STRATEGIC MOBILITY AREA  
MACOM: AMC**

<b>Category / Sub-Category</b>	<b>Anniston Army Depot</b>	<b>Redstone Arsenal</b>	<b>Rock Island Arsenal</b>	<b>Aberdeen Proving Grounds</b>	<b>Natick R&amp;D Center</b>
<b>AREA C-RATING</b>	<b>C-2</b>	<b>C-3*</b>	<b>C-3</b>	<b>C-4</b>	<b>C-1</b>
Cat: Road & Trail Network					
Surfaced Roads	C-3	C-2	C-3	C-2	C-1
Cat: Railroad					
Railroad Track	C-1	C-1	C-2	C-4	N/A
Railhead Facilities	N/A	N/A	C-4	N/A	N/A
Cat: Airfield					
Airfield Facilities	N/A	C-4	C-4	C-4	N/A
Airfield Pavements	N/A	C-2	C-4	C-3	C-1
Cat: Ports					
Piers & Wharfs	N/A	N/A	N/A	C-4	N/A
Staging & Marshaling Facilities	N/A	C-2	N/A	N/A	N/A
Rail & Truck Operations Areas	N/A	N/A	C-3	N/A	N/A
Terminal Intermodal Facilities	N/A	N/A	C-3	N/A	N/A

**HOUSING AREA**  
**MACOMs: MDW, MTMC, HSC**

Category / Sub-Category	Ft Ritchie	Ft Belvoir	Bayonne	Ft Detrick
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>
Category: Family Housing				
Family Housing	C-3	C-3	C-2	C-2
Category: Unaccompanied Personnel Housing				
Senior Enlisted Bachelor/Bachelor Officer Quarters	C-3	C-4	C-4	C-4
Barracks	C-4	C-4	C-4	C-3
Transient Housing Facilities	C-1	C-4	C-4	C-4
Category: Dining Facilities				
Dining Facilities	C-2	C-2	N/A	C-1

**HOUSING AREA**  
**MACOM: FORSCOM**

Category / Sub-Category	Fort Carson	Fort Stewart	Fort Riley	Fort Campbell	Fort Drum	Fort Bragg	Fort Hood	Fort Lewis
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2*</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>
Category: Family Housing								
Family Housing	C-2	C-3	C-3	C-3	C-4	C-4	C-2	C-4
Category: Unaccompanied Personnel Housing								
SEBQ / BOQ	C-4	C-4	C-3	C-4	C-4	C-4	C-4	C-4
Barracks	C-3	C-4	C-4	C-4	C-3	C-4	C-3	C-3
Transient Housing Facilities	C-4	C-1	C-1	C-2	C-1	C-2	C-2	C-1
Category: Dining Facilities								
Dining Facilities	C-1	C-3	C-3	C-3	C-1	C-2	C-3	C-3

**HOUSING AREA  
MACOM: TRADOC**

Category / Sub-Category	Fort Benning	Fort Gordon	Fort Knox	Fort Sill	Carlisle Barracks	Fort Eustis
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-2*</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-4</b>
Category: Family Housing						
Family Housing	C-4	C-2	C-3	C-3	C-2	C-4
Category: Unaccompanied Personnel Housing						
SEBQ / BOQ	C-3	C-4	C-4	C-4	C-4	C-4
Barracks	C-4	C-3	C-4	C-4	C-4	C-4
Transient Housing Facilities	C-2	C-4	C-1	C-1	C-2	C-2
Category: Dining Facilities						
Dining Facilities	C-3	C-2	C-3	C-3	N/A	C-4

**HOUSING AREA  
MACOM: AMC**

Category / Sub-Category	Anniston Army Depot	Redstone Arsenal	Rock Island Arsenal	Aberdeen Proving Grounds	Natick R&D Center
<b>AREA C-RATING</b>	<b>C-1</b>	<b>C-3</b>	<b>C-4</b>	<b>C-4*</b>	<b>C-3</b>
Category: Family Housing					
Family Housing	C-1	C-3	C-3	C-3	C-2
Category: Unaccompanied Personnel Housing					
SEBQ / BOQ	N/A	C-4	C-4	C-3	N/A
Barracks	N/A	C-3	C-4	C-3	C-4
Transient Housing Facilities	N/A	C-2	C-4	C-4	N/A
Category: Dining Facilities					
Dining Facilities	N/A	C-2	C-4	C-2	C-2

**COMMUNITY FACILITIES AREA**  
**MACOMs: MDW, MTMC, HSC**

<b>Category / Sub-Category</b>	<b>Ft Ritchie</b>	<b>Ft Belvoir</b>	<b>Bayonne</b>	<b>Ft Detrick</b>
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2*</b>
Category: Post Exchange				
Post Exchange	C-2	C-2	C-2	C-4
Category: Commissary				
Commissary	C-4	C-4	N/A	C-3
Category: Hospital & Medical Facilities				
Dental Clinic	C-4	C-1	N/A	C-4
Hospitals	N/A	C-2	N/A	N/A
Troop Medical Clinics	C-2	C-4	C-4	C-2
Veterinary Facilities	C-4	C-1	N/A	C-4
Category: Child Development Centers				
Child Development Centers	C-1	C-4	C-2	C-1
Category: Community Support				
Education Facilities	C-4	C-3	N/A	C-4
Physical Fitness Centers	C-4	C-4	C-4	C-4
Outdoor Sports & Recreation	C-3	C-3	C-3	C-2
Recreation Facilities	C-3	C-2	C-3	C-3
Service Facilities	C-3	C-4	C-1	C-3

**COMMUNITY FACILITIES AREA  
MACOM: FORSCOM**

Category / Sub-Category	Fort Carso n	Fort Stewart	Fort Riley	Fort Camp -bell	Fort Drum	Fort Bragg	Fort Hood	Fort Lewis
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>
Category: Post Exchange								
Post Exchange	C-3	C-4	C-3	C-3	C-2	C-2	C-3	C-2
Category: Commissary								
Commissary	C-1	C-2	C-4	C-1	C-1	C-3	C-1	C-2
Category: Hospital & Medical Facilities								
Dental Clinic	C-1	C-2	C-1	C-3	C-1	C-3	C-1	C-3
Hospitals	C-1	C-3	C-1	C-1	N/A	C-4	C-3	C-1
Troop Medical Clinics	C-3	C-4	C-2	C-4	C-1	C-4	C-3	C-2
Veterinary Facilities	C-4	C-3	C-2	C-4	C-2	C-4	C-4	C-4
Category: Child Development Centers								
Child Development Centers	C-4	C-4	C-1	C-4	C-1	C-2	C-4	C-1
Category: Community Support								
Education Facilities	C-1	C-3	C-2	C-4	C-4	C-2	C-4	C-2
Physical Fitness Centers	C-4	C-2	C-2	C-3	C-1	C-4	C-4	C-3
Outdoor Sports & Recreation	C-3	C-2	C-2	C-3	C-3	C-3	C-3	C-3
Recreation Facilities	C-2	C-3	C-3	C-4	C-3	C-4	C-4	C-3
Service Facilities	C-2	C-3	C-2	C-3	C-3	C-3	C-4	C-3

**COMMUNITY FACILITIES AREA  
MACOM: TRADOC**

<b>Category / Sub-Category</b>	<b>Fort Benning</b>	<b>Fort Gordon</b>	<b>Fort Knox</b>	<b>Fort Sill</b>	<b>Carlisle Barracks</b>	<b>Fort Eustis</b>
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>	<b>C-2*</b>	<b>C-2</b>	<b>C-3</b>
Category: Post Exchange						
Post Exchange	C-4	C-3	C-2	C-3	C-2	C-3
Category: Commissary						
Commissary	C-2	C-2	C-1	C-2	C-4	C-1
Category: Hospital & Medical Facilities						
Dental Clinic	C-4	C-2	C-2	C-1	C-1	C-4
Hospitals	C-4	C-2	C-2	C-3	C-4	C-4
Troop Medical Clinics	C-2	C-2	C-3	C-2	C-1	C-4
Veterinary Facilities	C-3	C-4	C-2	C-4	C-1	C-4
Category: Child Development Centers						
Child Development Centers	C-1	C-4	C-1	C-4	C-1	C-4
Category: Community Support						
Education Facilities	C-3	C-2	C-2	C-3	C-4	C-4
Physical Fitness Centers	C-4	C-2	C-3	C-4	C-4	C-3
Outdoor Sports & Recreation	C-3	C-3	C-3	C-3	C-2	C-3
Recreation Facilities	C-3	C-2	C-3	C-3	C-3	C-2
Service Facilities	C-3	C-4	C-3	C-3	C-2	C-4

**COMMUNITY FACILITIES AREA  
MACOM: AMC**

<b>Category / Sub-Category</b>	<b>Anniston Army Depot</b>	<b>Redstone Arsenal</b>	<b>Rock Island Arsenal</b>	<b>Aberdeen Proving Grounds</b>	<b>Natick R&amp;D Center</b>
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>
Category: Post Exchange					
Post Exchange	C-4	C-2	C-3	C-2	C-3
Category: Commissary					
Commissary	N/A	C-2	C-1	C-2	N/A
Category: Hospital & Medical Facilities					
Dental Clinic	N/A	C-2	C-4	C-2	N/A
Hospitals	N/A	C-1	C-4	C-2	N/A
Troop Medical Clinics	C-1	C-2	C-2	C-3	C-2
Veterinary Facilities	N/A	C-2	N/A	C-2	N/A
Category: Child Development Centers					
Child Development Centers	N/A	C-1	C-4	C-4	C-1
Category: Community Support					
Education Facilities	N/A	C-1	C-4	C-4	C-1
Physical Fitness Centers	C-4	C-4	C-1	C-4	N/A
Outdoor Sports & Recreation	C-4	C-2	C-3	C-3	C-2
Recreation Facilities	C-4	C-2	C-3	C-3	C-2
Service Facilities	C-1	C-2	C-3	C-3	N/A



**UTILITY SYSTEMS AREA**  
**MACOMs: MDW, MTMC, HSC**

Category / Sub-Category	Ft Ritchie	Ft Belvoir	Bayonne	Ft Detrick
<b>AREA C-RATING</b>	<b>C-3</b>	<b>C-3</b>	<b>C-2</b>	<b>C-1</b>
Category: Heat/ AC				
Heat/ AC Source & Distribution	C-1	C-3	C-3	C-1
Category: Electric				
Electric Source, Distribution & Substations	C-4	C-3	C-4	C-1
Category: Water				
Water Treatment, Storage, & Distribution	C-2	C-2	C-1	C-2
Category: Sewer				
Sewage Treatment, Disposal & Collection	C-3	C-2	C-1	C-1

**UTILITY SYSTEMS AREA  
MACOM: FORSCOM**

<b>Category / Sub-Category</b>	<b>Fort Carson</b>	<b>Fort Stewart</b>	<b>Fort Riley</b>	<b>Fort Camp- bell</b>	<b>Fort Drum</b>	<b>Fort Bragg</b>	<b>Fort Hood</b>	<b>Fort Lewis</b>
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-3</b>	<b>C-2</b>	<b>C-2</b>	<b>C-1</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>
Category: Heat/AC								
Heat / Air Conditioning Source & Distribution	C-1	C-3	C-2	C-2	C-1	C-1	C-3	C-2
Category: Electric								
Electric Source, Distribution & Substations	C-2	C-3	C-2	C-3	C-2	C-1	C-2	C-1
Category: Water								
Water Treatment, Disposal & Collection	C-2	C-2	C-1	C-2	C-1	C-3	C-4	C-3
Category: Sewer								
Sewage Treatment, Disposal & Collection	C-1	C-2	C-3	C-2	C-1	C-2	C-2	C-3

**UTILITY SYSTEMS AREA  
MACOM: TRADOC**

<b>Category / Sub-Category</b>	<b>Fort Benning</b>	<b>Fort Gordon</b>	<b>Fort Knox</b>	<b>Fort Sill</b>	<b>Carlisle Barracks</b>	<b>Fort Eustis</b>
<b>AREA C-RATING</b>	<b>C-3*</b>	<b>C-2</b>	<b>C-2</b>	<b>C-2</b>	<b>C-1</b>	<b>C-3</b>
Category: Heat / AC						
Heat/ Air Conditioning Source & Distribution	C-3	C-2	C-1	C-2	C-1	C-2
Category: Electric						
Electric Source, Distribution & Substations	C-2	C-1	C-2	C-1	C-1	C-3
Category: Water						
Water Treatment, Storage, & Distribution	C-2	C-2	C-2	C-3	C-1	C-4
Category: Sewer						
Sewage Treatment, Disposal & Collection	C-1	C-1	C-3	C-2	C-2	C-3

**UTILITY SYSTEMS AREA  
MACOM: AMC**

<b>Category / Sub-Category</b>	<b>Anniston Army Depot</b>	<b>Redstone Arsenal</b>	<b>Rock Island Arsenal</b>	<b>Aberdeen Proving Grounds</b>	<b>Natick R&amp;D Center</b>
<b>AREA C-RATING</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>	<b>C-3</b>	<b>C-2</b>
Category: Heat / AC					
Heat / Air Conditioning Source & Distribution	C-2	C-3	C-2	C-3	C-3
Category: Electric					
Electric Source, Distribution & Substations	C-2	C-2	C-3	C-3	C-2
Category: Water					
Water Treatment, Storage, and Distribution	C-1	C-2	C-2	C-3	C-2
Category: Sewer					
Sewage Treatment, Disposal & Collection	C-2	C-3	C-2	C-2	C-2

## **Appendix D - ISR Field Test Instructions for the Expanded Field Test**

The following pages contain the final form of the Installation Status Report, Part I - Infrastructure, that was used during the second, expanded field test. This was the form of the ISR that was approved for full fielding at CONUS installations by the CSA. The OACSIM, the executing agency of the ISR for the Army staff, used these field test instructions to draft the Army Regulation that will direct implementation of the ISR.

# **Installation Status Report**

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## **Field Test Instructions**

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# **Installation Status Report**

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## **Field Test Instructions**

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## Chapter 1 General

### 1-1. Purpose.

a. This document provides field test instructions for the Installation Status Report (ISR), a decision support system to improve management of limited resources for installations. The ISR is comprised of three parts:

- (1) Part I - Infrastructure
- (2) Part II - Environment
- (3) Part III - Services.

b. Part I and Part II are both being tested during this field test period. Part III is not included in this field test since it is under development.

c. Part I - Infrastructure is designed to give installation and MACOM commanders, and HQDA an evaluation of both the quality and quantity of available facilities. These implementing instructions explain in detail what installations are required to report, how reports are prepared, and how reports are submitted for Part I - Infrastructure. Reports submitted in accordance with these implementing instructions satisfy the need to--

(1) Apply common Army-wide standards for assessing the condition of facilities.

(2) Identify installation facility renovation, sustainment and new construction requirements.

(3) Synchronize facility renovation efforts across installations and focus the Army's future facility investment.

d. HQDA and MACOM objectives (Part I - Infrastructure) are to --

(1) Provide the current status of US. Army installation facilities to Headquarters, Department of the Army (HQDA) and all levels of the Army chain of command.

(2) Provide indicators to MACOMs and HQDA that:

(a) represent Army-wide facility conditions and trends;

(b) identify common factors which degrade installation conditions;

(c) identify the quantity shortfalls on installations between existing and required facilities;

(d) identify the difference between the actual condition of facilities on installations and Army-wide standards;

(e) identify mitigating factors that impact facility requirements and conditions.

(3) Assist HQDA, MACOMs and installation commanders in allocating resources and prioritizing infrastructure programs.

(4) Assist MACOMs and HQDA with information for determining changes in Army policy or in determining needs for new policies.

(5) Assist HQDA with information for use with Total Army Basing Study (TABS); Base Closure and Realignment (BRAC); counter stationing and force structure decisions.

e. Installation objectives (Part I - Infrastructure) are to provide the installation commander a report that:

(1) assesses installation conditions

(2) uses established Army-wide standards

(3) articulates installation needs

(4) estimates installation sustainment, renovation and new construction resource requirements

(5) assists in prioritizing projects

(6) assists in allocation of resources

(7) measures progress

f. Part II - Environment is designed to capture the current macro-level status of environmental conditions and programs on an installation. Part II will give installation and MACOM commanders an evaluation of installation environmental programs. **The detailed Part II field test instructions, (which will be provided to installations and MACOMs in a separate mailing due to delays in receiving field comments on the concept), provide specific instructions on installation**



execution and submission requirements for this portion of the ISR. Reports submitted in accordance with those instructions will satisfy the need to--

(1) Apply common Army-wide standards for assessing the condition of the overall environmental program.

(2) Measure environmental program progress and identify resource shortfalls.

g. HQDA and MACOM objectives (Part II - Environment) are to--

(1) Provide the current status of Army installation environmental programs to Headquarters, Department of the Army and all levels of the Army chain of command.

(2) Provide indicators to MACOMs and HQDA that:

(a) represent Army-wide environmental conditions and trends;

(b) identify common factors which affect the environmental program;

(c) identify environmental program progress;

(d) provide comparison between actual environmental conditions on installations and Army-wide standards.

(3) Assist HQDA and MACOM commanders in allocating resources and prioritizing environmental programs.

(4) Provide HQDA and MACOMs useful information in making needed changes to Army environmental policies.

h. Installation objectives (Part II - Environment) are to provide the installation commander a report that:

(1) assesses installation environmental conditions;

(2) assesses effectiveness of environmental program management;

(3) articulates installation needs and resource requirements.

## 1-2. Concept.

a. Part I of the ISR will provide an installation's status by comparing the quantity of facilities to installation requirements and the quality of installation facilities to Army standards in five areas: Mission Facilities, Strategic Mobility Facilities, Housing, Community Facilities, and Utility Systems. Reports will also include Army Reserve Facilities and National Guard Facilities, **however Reserve and National Guard Facilities will not be evaluated during this test.** Part I contains a commander's narrative statement prioritizing the installation's infrastructure areas and highlighting any mission impacts due to infrastructure deficiencies.

b. One of the most important aspects of the ISR is the use of common Army-wide standards for assessing facilities. The facility standards were developed by the HQDA functional proponent responsible for the facilities. Standards are a means of assessing the condition of facilities as well as their functionality. The standards for each group of facilities are established and described in the ISR standards booklets. Accompanying the word description of most standards is a graphic which depicts the level of condition and functionality in terms of GREEN, AMBER and RED.

c. Cost estimates for new construction, renovation, and sustainment are also built into the Installation Status Report system. The cost factor methodology and an example of how they are applied is illustrated in appendix J. These estimates are based on uniform, Army-wide cost factors as well as ISR evaluations.

1-3. **Scope.** Part I of the ISR applies to facilities for which the Army programs and allocates dollars or is otherwise reimbursed. Facilities on Army installations which do not impact Army budget dollars, or for which the Army is not reimbursed, should not be included in the ISR.

## 1-4. Responsibilities.

a. *OASA(FM)*. The Office of the Assistant Secretary of the Army (Financial Management) will --

(1) Provide oversight for the concept development and field testing of all three parts of the ISR.

(2) Provide the primary point of contact (POC), Suzanne Carlton, for ISR coordination with field test MACOMs and installations.

(3) Staff the field test results with the HQDA staff to validate uses of the ISR data in decision making.

(4) Identify current reporting systems for which the ISR provides redundant or duplicate information. During the after action review process, determine which current reports can be eliminated or streamlined because of the ISR. Coordinate this with the HQDA staff.

(5) Provide after action results to field test sites and the senior Army leadership.

(6) Establish a test control cell for answering questions from the field during the test period. A test question "hotline" is (703) 695-5951, DSN 225-5951.

(7) The ORCEN will provide assistance to the OASA(FM) on above responsibilities.

b. *OACSIM*. The office of the Assistant Chief of Staff for Installation Management will --

(1) Be the HQDA proponent for the ISR when it is approved for implementation by the CSA.

(2) Develop policies, standards, and procedures for Army-wide implementation of installation status reporting.

(3) Collect installation data from MACOMs and maintain an automated historical records file.

(4) Process and distribute installation status data in a usable format to requesting Department of the Army agencies and commands.

(5) Establish an automated methodology for reviewing and analyzing installation status data to include programming and funding considerations.

(6) Develop and issue guidance in the use of installation status data.

(7) Act as the focal point for the development of procedures for using installation status data and for improving the status of Army installations.

c. *Army Staff principals*, will--

(1) Assign specific staff responsibilities for monitoring and utilizing installation status report test data within their areas of responsibility.

(2) Identify uses of ISR data in functional area decision support systems. Develop procedures for using ISR test data within their area of responsibility.

(3) Assist the HQDA ACSIM in the development of procedures for using installation status data and improving the status of Army installations.

(4) Provide feedback to the ASA(FM) on the utility of the test ISR. Recommend system improvements as needed.

d. *Commanders of MACOMs*. Commanders of MACOMs will--

(1) Determine MACOM staff uses of ISR.

(2) Assign specific staff responsibilities for supervision and coordination of the ISR field test within their commands.

(3) Compile installation field test ISRs into a MACOM report.

(4) Ensure that subordinate installations comply with installation status reporting requirements, to include the submission of test reports in a timely and accurate manner.

(5) Establish a MACOM Host/Tenant relationship to share ISR information.

(6) Provide feedback to the ASA(FM) on the quality and utility of the test ISR system. Recommend system improvements as needed.

(7) Recommend if a C-rating is needed for each infrastructure area and the installation. Assess if an overall installation rating for infrastructure and a rating for environment are required to enhance the ISR as a decision support system. If so, recommend a simple, objective methodology for calculating the overall installation C-ratings.

e. *Installation commanders*. Commanders of installations will--

(1) Assign specific staff responsibilities for supervision and coordination of the ISR at installation level. Normally the Garrison Commander or equivalent will designate the ISR POC.

(2) Execute the test ISR and submit requirements listed in paragraph 3-26 to the MACOM. **Section II of Chapter 3 provides some lessons learned from the first field test on how to execute the ISR at installation level.**

(3) Review the ISR reports and adjust Area ratings as justified by other considerations discussed in paragraph 3-9.

(4) Review ISR assessments and cost estimates to prioritize resource requirements by infrastructure area by fiscal year.

(5) Authenticate the ISR and provide a narrative statement prioritizing the installation's infrastructure areas and highlighting any mission impacts due to infrastructure deficiencies.

(6) Complete the survey contained in Appendix L to provide the installation commander's feedback on the utility of the ISR to the senior Army leadership.

(7) Forward the ISR to the designated MACOM in their chain of command.

f. *Division and Major unit Commanders.* Unit Commanders will--

(1) Assign specific staff responsibilities for coordination of the unit/activity's ISR input with the garrison staff ISR POC.

(2) Complete quality assessment of facilities under control of staff activities. Ensure subordinate units/activities complete quality assessments of their permanent facilities as identified by the ISR POC.

(3) Coordinate training of facility inspectors with the installation staff.

(4) Submit roll-up of quality inspection worksheets to the garrison staff ISR POC.

g. *ISR POC (normally designated by the Garrison Commander or equivalent).* The ISR POC will--

(1) Establish guidance for completing ISR quality assessments. Develop a plan for inspecting

facilities identified in the ISR software database. Assign staff (see figure 3-1) responsibility for ISR sub-categories.

(2) Provide ISR training as needed.

(3) Serve as source of information and office of record for the ISR. See Section II of Chapter 3 for suggestions in planning the ISR field test.

(4) Compute and validate the quantity assessment of all installation facilities using ISR software.

(5) Consolidate, compile, and validate all quality assessments into the overall installation report using ISR software.

(6) Extract new construction, renovation and sustainment cost estimates from the ISR reports; in coordination with the DEH and DRM, compare cost estimates against any programmed projects.

(7) Provide recommendations to the Installation Commander on prioritization of improvement projects.

(8) Finalize ISR and submit to Installation Commander for approval and signature.

(9) Provide ISR feedback to facility inspectors and owners through reports generated by the ISR software.

(10) Provide input on the quality and utility of the test ISR system by completing the feedback survey in Appendix M.

(11) Serve as the office responsible for compilation/completion of the ISR. Submit the requirements defined in paragraph 3-26 to the MACOM.

(12) Identify uses of the ISR by the Garrison staff.

h. *Garrison Staff or Equivalent.*

(1) Complete and consolidate quality assessments of facilities under control of staff activity.

(2) Submit complete quality inspection worksheets to the garrison staff ISR POC.

(3) The real property manager validates the assets database contained in the ISR software.

(4) The Master planner validates the facility requirements database in the ISR software.

(5) DEH/DPCA/DRM provide recommendations on prioritization of capital improvements to Garrison Commander for submission to the Installation Commander.

(6) DEH/DPCA/DRM assists the garrison staff ISR POC in preparation of the Costs Report for submission as part of the complete ISR.

i. *Separate unit commanders/Army Tenants.* Commanders/activity directors of tenant units/organizations will--

(1) Complete quality assessments of assigned facilities funded by Army resources.

(2) Submit quality assessments to the ISR POC or equivalent.

(3) Submit a copy of quality assessments through the chain of command to the parent MACOM/organization.

j. *Other non-Army Tenants.* Commanders/activity directors of other non-Army tenant units/organizations will--

(1) Complete quality assessments of assigned facilities funded by Army resources.

(2) Submit quality assessments through the chain of command to the ISR POC or equivalent.

(3) Submit a copy of quality assessments through the chain of command to the parent organization.

#### **1-5. Explanation of abbreviations and terms.**

Abbreviations and special terms used in this regulation are explained in the glossary.

**1-6. References.** Related publications are listed in appendix A.

## **Chapter 2**

### **Installation Status Report Elements**

**2-1. The Installation Status Report.** The Installation Status Report is designed to provide a single source document for assessing key elements of an installation's status. Figure 2-1 is the Part I - Infrastructure report. Figure 2-2 is the Part II - Environment report. **The remaining portions of these instructions deal solely with Part I - Infrastructure. When the word "ISR" is used, the instructions are referring to Part I - Infrastructure. Field test instructions for Part II will be sent separately to MACOMs and installations.**

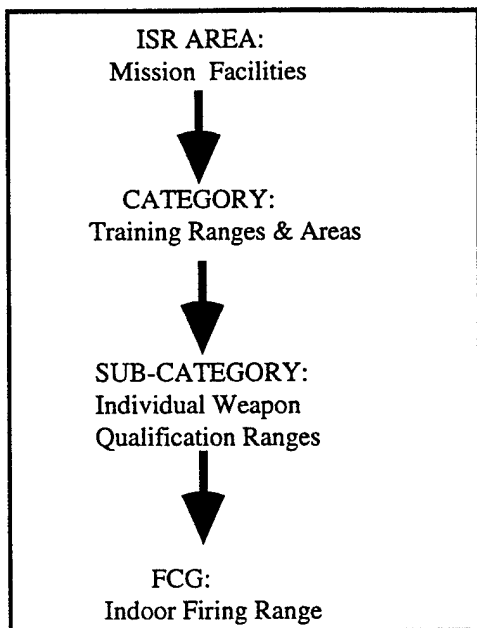
**2-2. Areas.** Part I of the ISR is comprised of five infrastructure areas: Mission Facilities, Strategic Mobility Facilities, Housing, Community Facilities, and Utility Systems. The ISR also reports on Army Reserve and National Guard Facilities. These areas will not be evaluated during this field test. C-ratings, similar to the Unit Status Reporting System (USR), are used as status indicators for each area.

**2-3. Categories.** Areas are sub-divided into categories for which C-ratings are determined. The relationship of categories to areas is shown in a table in appendix B.

**2-4. Sub-Categories.** Each category contains sub-categories for which C-ratings are determined. The relationship of sub-categories to categories is shown in a table in appendix C.

**2-5. Facility Category Groups (FCGs).** Each sub-category contains FCGs which are the lowest grouping of facilities in the ISR system. This first level of facility aggregation forms the basis for many of the calculations performed by the ISR software.

**NOTE:** Figure 2-3 provides an example breakdown of ISR infrastructure classifications. The complete breakdown from area through FCG level is provided in Appendices B through D.



**Figure 2-3. Example Infrastructure Classification**

**2-6. Installation status levels.** Installation infrastructure areas, categories, and sub-categories are assigned numerical C-ratings. C-ratings are a function of both the quality and quantity of available facilities. A C-1 rating represents an infrastructure area that requires little immediate attention while a C-4 rating highlights a true problem area for the installation. C-5 is used to show that an installation's status is being degraded due to a HQDA directed action or program, or otherwise is in a non-reportable status. Table 2.1 provides the C-rating definitions.

## **2-7. Quality Evaluation.**

a. One of the most important aspects of the ISR is the use of common Army wide standards for assessing the quality of facilities. The ISR standards for each group of facilities are found in standards booklets, provided to installations and MACOMs as a document accompanying these instructions.

b. Quality evaluations of infrastructure facilities are determined using Inspection Worksheets and Standards Booklets. A completed sample worksheet for a general purpose instructional facility is at figure 3-5. Inspection worksheets prescribe facility items to be inspected; a booklet for each item establishes inspection standards. An illustration of the use of an Inspection Worksheet and an accompanying page from a Standards Booklet is shown in figure 2-4. Instructions

for completing Inspection Worksheets and using Standards Booklets are located in Chapter 3.

## **2-8. Quantity Determination.**

a. The quantity determination is automated using the ISR software.

b. The installation facility requirements are taken from the Real Property Planning and Analysis System (RPLANS). The facility allowances are obtained using information and algorithms contained in the Headquarters RPLANS.

c. Assets data are obtained from the installation engineer's Integrated Facilities System-Mini/Macro (IFS-M) or Desktop Resource for Real Property Management (DR REAL) real property inventory databases.

d. Instructions for determining quantity C-levels are located in Chapter 3.

# INSTALLATION STATUS REPORT

## PART ONE - INFRASTRUCTURE

Installation: Fort Harmon

As Of Date: 1 Nov 93

### Mission Facilities

C-2

Training Ranges & Areas	C-3
Maintenance & Production Facilities	C-2
Classrooms	C-1
Research & Development	C-2
Supply & Storage Facilities	C-2
Conventional Ammunition Facilities	C-2
Administrative Facilities	C-1
Information Management	C-2

### Strategic Mobility Facilities

C-2

Road & Trail Network	C-2
Railroad	C-3
Airfield	C-1
Ports	C-3

### Housing

C-2

Family Housing	C-3
Unaccompanied Personnel Housing	C-1
Dining Facilities	C-1

### Community Facilities

C-1

Post Exchange	C-1
Commissary	C-1
Hospital & Medical Facilities	C-1
Child Development Centers	C-1
Community Support	C-2

### Utility Systems

C-1

Heat/AC	C-1
Electric/Gas	C-1
Water	C-2
Sewer	C-1

### Army Reserve Facilities

N/A

### National Guard Facilities

N/A

Installation Commander's Signature: John Henry, MG, USA

Figure 2-1. Part I - Infrastructure  
Installation Status Report Field Test Instructions

# INSTALLATION STATUS REPORT

## PART TWO -- ENVIRONMENT

Installation: Fort Harmon

As Of Date: 1 Nov 93

### Compliance and Pollution Prevention Programs (MM)

C-3

\*Measures compliance with key environmental regulations and the quality of installation programs in place.

### Restoration (R)

C-2

\*Measures the quality of restoration action plans and the progress of restoration efforts.

### Conservation (C)

C-1

\*Measures compliance with regulations and laws in the management of Wetlands, Endangered Species, Land, Natural Resources, Cultural Resources, and Pests.

### Environmental Resources (ER)

C-3

\*Measures level of funding currently devoted to programs and projects within each of the environmental pillars.

Installation Commander's Signature: John Henry, MG, USA

Figure 2-2. Part II - Environment

**Table 2-1**  
**C-Rating definitions**

**C-Rating: C-1**

**Definition:** Almost all ( $\geq 95\%$ ) required facilities available  
Meets unit/activity needs and Army standards  
Very minor, if any, functional deficiencies  
Infrastructure fully supports mission performance  
No significant environmental, health, safety, or preservation (EHSP) issues

**C-Rating: C-2**

**Definition:** Most ( $\geq 80\%$ ) required facilities available  
Meets unit/activity needs and partially meets Army standards  
Minor functional deficiencies  
Infrastructure supports majority of assigned missions  
Minor environmental, health, safety, or preservation (EHSP) issues

**C-Rating: C-3**

**Definition:** Majority of ( $\geq 60\%$ ) required facilities available  
Meets majority of unit/activity needs, however, does not meet Army standards  
Some functional deficiencies  
Impairs mission performance  
Minor environmental, health, safety, or preservation (EHSP) issues

**C-Rating: C-4**

**Definition:** Less than 60% of required facilities available  
Facilities available do not meet unit/activity needs or Army standards  
Major functional deficiencies  
Significantly impairs mission performance  
Major environmental, health, safety, or preservation (EHSP) issues

**C-Rating: C-5**

**Definition:** Undergoing major reorganization  
Newly activated/inactivated installation or base closure ongoing






QUALITY ROLL-UP SHEET				
Facility Number	Installation Number	User UIC	Color Quality Level (GREEN, AMBER, RED)	Quality Inspector
632	1112	W3ATAA	AMBER	MAJ Harmon
328	2111	W3ATAA	RED	SSG Slape

Part of a quality roll-up sheet.

Barracks Inspection Worksheet		Overall Quality Rating: AMBER	
Unaccompanied Personnel Housing Category			
Facility Number: 632	Installation Number: 1112	Inspector: MAJ Harmon	Date Completed: 1 April 1993
Facility Category Group: 72100			
FACILITY CONDITION RABESSWIBAT			
Condition of Each Item			
Inspection Item	Place an "X" in the box that applies to the Troop Barracks for each inspection area.	GREEN	AMBER
Common Building Areas			
1. Site & Grounds		<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Parking		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Building Exterior***		<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Loading Dock		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Lobby		<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Administrative Areas		<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Stairs		<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. Corridors		<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. Toilets & Showers***		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Utilities**		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Facility Specific Item			
11. Lounge		<input checked="" type="checkbox"/>	<input type="checkbox"/>
12. Living Area***		<input type="checkbox"/>	<input checked="" type="checkbox"/>
13. Outdoor Formation Area		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sum of "X's" in each column		7	2
Majority item color rating		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Critical*** item color rating		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Location Comment:			
Environmental, Health, Safety, & Preservation (EHSP) Comment:			

An Inspection Worksheet.

Barrack Standards Booklet		
TOILETS/SHOWERS		
<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>
		
<ul style="list-style-type: none"> <li>• Toilet and shower upgraded to semi-private facilities</li> <li>• Walls upgraded to ceramic tile/venyl wall covering with matching trim</li> <li>• Floor upgraded to ceramic tile with ceramic base</li> <li>• Built-in ventilation fan and electrical safety outlets</li> <li>• All of the personnel assigned to the shower have hot water for showers</li> <li>• More than one toilet/shower room per floor</li> <li>• Separate male &amp; female facilities</li> <li>• All toilets designed for handicapped accessibility</li> </ul>	<ul style="list-style-type: none"> <li>• Exposed ceiling structure, conduit, piping, and mechanical equipment</li> <li>• Mirrors repaired</li> <li>• Walls in good repair</li> <li>• Standing fan placed in room</li> <li>• Emergency lighting present</li> <li>• 75% of the personnel assigned to the latrine have hot water for showers</li> <li>• Water pressure does not drop when toilets are flushed</li> <li>• At least one toilet/shower room per floor</li> <li>• Co-mingled male &amp; female facilities</li> <li>• One or more toilets modified or designed for handicapped accessibility</li> </ul>	<ul style="list-style-type: none"> <li>• Exposed ceiling structure, conduit, piping, and mechanical equipment</li> <li>• Broken and missing mirrors</li> <li>• Leaking sinks, toilets, &amp; showers</li> <li>• Lighting fixtures, doors, &amp; tile in poor state of repair &amp; walls have cracks</li> <li>• No ventilation fan, electrical safety outlets or emergency lighting</li> <li>• Water pressure drops when toilets are flushed</li> <li>• Half of the personnel assigned to the latrine have hot water for showers</li> <li>• Less than one toilet/shower room per floor</li> <li>• No handicapped accessibility</li> </ul>

A page from a Standards Booklet.

The Inspection Worksheet and the Standards Booklet depict Army-wide quality standards.

Figure 2-4. Determining facility quality

## Chapter 3 Instructions for Reporting

### Section I Reporting System

#### 3.1. Overview

a. This chapter provides detailed instructions on the reporting system. The first section provides details of the ISR system elements and installation submission requirements. Section II provides some lessons learned from the initial field test in executing the ISR at installation level. Section III discusses MACOM reporting requirements.

b. The Garrison staff element responsible for the ISR will need to determine the units/activities who will inspect the installation's permanent facilities. Figure 3.1 provides a list of installation offices normally responsible for the facilities within the ISR's sub-categories.

c. Facility inspectors should receive a short training session on the inspection process. Each test installation will receive a training video for use in familiarizing their units/activities with the facility quality inspection process.

#### 3-2. Facility quality inspections.

a. Inspection worksheets and standards booklets are used to determine facility conditions. **The inspector should be a primary user of the facility, knowledgeable of the facility's conditions and uses.** For example, a barracks inspector should be a company commander or first sergeant. A Maintenance facility inspector should be the unit/activity maintenance officer/NCO. Figure 3-2 provides instructions for using the standards booklets and inspection worksheets. These instructions are also found as part of each standards booklet. Also, the installation ISR POC will be provided a training video, providing instruction on the inspection process, to use in training facility inspectors.

b. Inspection worksheets must only be completed for an installation's permanent assets used to determine the quantity ratio. These permanent facilities are identified in the ISR database provided with the software package. The installation's real property manager should verify the accuracy of this database pulled from the HQ IFS system. World War II wooden facilities and other temporary or semi-permanent

facilities will be visible in ISR reports however, they will not be evaluated or assessed.

c. It is not necessary to physically assess all permanent facilities. For example, in Facility Category Groups (FCGs) with 10 or more facilities, it may be productive to use a random sampling process to inspect a representative sample of the facilities within this FCG. This may give the commander an accurate picture of the conditions of these facility types without inspecting every single like-type facility. This random sampling process should be useful in a sub-category such as Family Housing where there are normally several units of the same type facility. Ammunition storage may be another sub-category candidate for using a random sampling process on some types of installations. The overall goal of the inspection process is to give the commander an accurate picture of facility conditions on the installation. Although an inspection worksheet may not be completed on each permanent facility, **a color rating for each permanent facility must be entered into the ISR software program to generate appropriate C-Ratings and cost estimates to improve facility conditions.**

Table 3-1

#### Quality-level definitions

Quality-level: DEFINITION:	GREEN Complies with standards Overall good condition
Quality-level: DEFINITION: standards	AMBER Does not fully meet Overall good condition
Quality-level: DEFINITION:	RED Dysfunctional or substandard Overall poor condition

<b>Installation Offices Normally Responsible For ISR Sub-Categories</b>	
<b>Installation Offices</b>	<b>Sub-Category</b>
DPTM	Individual Weapon Qualification Ranges
DPTM	Major Weapon System Ranges
DPTM	Maneuver Areas
Using Units & DOL	Maintenance Facilities
DOL, DOIM	Production Facilities
DPTM, DPCA	General Purpose Instruction Facility
DPTM, DPCA	Applied Instruction Facility
DOL	Research & Development Buildings
DOL	Research & Development Ranges
DOL	Bulk Fuel Receipt, Issue, & Storage Site
DOL	General Supply & Storage Facilities
DOL	Ammunition Storage Facilities
DOL	Ammunition Maintenance Facilities
Using Units	Unit Operations Buildings
Using Units/Organizations	General Purpose Administrative Facilities
DPTM	Confinement Facilities
DOIM	Information Management
DOL	Surfaced Roads
DOL	Railroad Track
DOL	Railhead Facilities
DOL	Airfield Facilities
DOL	Airfield Pavements
DOL	Piers & Wharves
DOL	Staging & Marshaling Facilities
DOL	Rail & Truck Operations Areas
DOL	Terminal Intermodal Facilities
DEH	Family Housing
Using Unit/DEH	Senior Bachelor Enlisted/Bachelor Officer Quarters
Using Unit	Barracks
DPCA, DEH	Transient Housing Facilities
Using Unit	Dining Facilities
AAFES	Post Exchange
DeCA	Commissary
DENTAC	Dental Clinic
MEDAC	Hospitals
MEDAC	Troop Medical Clinics
MEDAC	Vet Facilities
DPCA	Child Development Centers
Using Unit, DPCA	Education Facilities
DPCA	Physical Fitness Centers
DPCA	Outdoor Sports & Recreation Facilities
DPCA	Recreation Facilities
DPCA, Chaplain, DEH, DOL	Service Facilities
DEH	Heat/Air Conditioning Source Distribution
DEH	Electric Source, Distribution & Substations
DEH	Water Treatment, Storage & Distribution
DEH	Sewage Treatment, Disposal & Collection
Army Reserve Units	Army Reserve Facility
National Guard Units	National Guard Facility

**Figure 3-1. Installation Offices Responsible for Sub-Categories**

d. Record Facility quality information on the Inspection Worksheet. This sheet lists the items which are to be inspected for each facility. (On some worksheets, the condition standards for GREEN, AMBER, and RED are written directly on the worksheet.) Note that some inspection items are identified as **critical items\*\*\***. **This designation means that these areas are most critical to performing the mission for which the facility is used. The condition of these items drives the overall facility quality color rating.**

e. When pictures are available for an inspection item, look at the pictures first to get an idea of the condition of the inspection item. Then read the words under the picture. Rate the inspection item based on which picture and description **best fits** the inspection item. Not all criteria under each picture must be met to receive the associated color rating for that inspection item. The pictures and words are only a guide for the best description of the overall condition of an inspection item. Follow the instructions provided in the standards booklets (figure 3-2) and complete the inspection worksheet. **An example of a completed worksheet is depicted in figure 3-5.**

f. An inspection worksheet is not completed for a facility which is undergoing major repair or renovation. If this facility will be functional in a short period of time (generally less than 3 months), assign the color rating that the facility will meet when renovation is complete. If a lower rating is assigned, the ISR program will generate cost estimates to renovate this facility when money is already obligated to its renovation. If the facility will be out of commission for longer than 3 months, a RED rating should be assigned to the facility so that C-ratings properly reflect the condition status of these type facilities. However, the ISR program will generate costs to renovate these facilities, so the costs reports need to be modified to reflect that money is already appropriated towards these renovations.

1. Select the correct inspection worksheet and standards booklet to evaluate your facility.
2. Rate each inspection item on the inspection worksheet by first looking at the picture in the standards booklet, then by reading the bullets under the picture to select the color level that **best fits** the item being evaluated.
3. If an inspection item is not in the facility and it is not needed, mark the "N/A" box.
4. If an inspection item is not in the facility and it is needed, rate that inspection item as RED.
5. Determine the majority item Color-level by summing the "X's" recorded in each color column.
6. Determine the critical item Color-level by selecting the lowest Color-level of the critical items rated. Critical items are identified by asterisks on the Inspection Worksheets.
7. Determine the facility's overall Color-level by selecting the lower Color-level between the majority items Color-level (determined in step 5) and the critical item Color-level (determined in step 6).
8. If deemed necessary, write comments concerning location. Location pertains to the location of a facility on the installation.
9. If known, write comments concerning environmental, health, safety, and preservation (EHSP) issues.
10. Have the unit commander or activity director sign the inspection worksheet.

**Figure 3-2. Inspection Worksheet instructions**

#### **g. Inspections of Historical Facilities.**

By law, some inspection items within facilities designated as historical structures may not be renovated to the GREEN standards depicted in the applicable standards booklet. Evaluate the facility in terms of which inspection items you are authorized to renovate. Do not strictly apply standards for inspection items that you cannot effect due to legal restrictions. For inspection items whose condition is restricted by their historical status, the inspector needs to determine under which color rating the item "best fits", disregarding the standards that cannot be met due to the legal restrictions on the structure's condition.

For example, an installation may have a General Purpose Administrative Building that has been declared a historical facility. Among the GREEN standards for the Building Exterior Inspection Item in this type facility are these three bullet comments:

"Full handicapped access integral part of design";

"Exterior components, colors and materials follow Installation Design Guide";

"Exterior signage clearly visible and follows the Installation Design Guide".

Restrictions due to the historical classification of the facility may prevent the installation from renovating to meet these standards. As such, do not consider these comments when determining under which color rating the building's exterior best fits. If the facility meets 4 or 5 of the remaining 5 GREEN standards comments, rate this inspection item as GREEN.

For facilities restricted by historical classification, inspectors need to determine the standards to which the building can be legally renovated and apply those standards in classifying inspection items as GREEN, AMBER or RED.

### 3-3. Determining Quality C-ratings.

a. The C-rating calculations are all automated. A quality C-level is calculated for each sub-category using the results of the individual facility inspections. Results from the facility quality inspections can be manually consolidated at any unit/activity level on Quality Roll-Up Sheets. These sheets are then forwarded, through reporting channels, to the Installation ISR POC for data entry into the ISR software program provided to the installation. An example of a completed Roll-Up sheet is provided in Figure 3-6. Facility inspection data consolidation can also be automated at any unit/activity level by using the ISRS software program. This user friendly program allows facility quality data entry to be decentralized. Details of this option are in the software user's manual.

b. The ISR software program will take the facility quality inspection results and calculate a C-rating. A detailed explanation of the method used to determine quality C-levels is provided in Appendix E, Quality Level Explanation.

### 3-4. Determining Quantity C-ratings.

a. The ISR software will automatically calculate a Quantity C-rating for each Sub-Category. The ISR software program will perform the calculation using facility assets reported by the installation's IFS-M or DR REAL Programs to the Headquarters Integrated Facilities System (HQIFS) Program. The software program also contains the standard Army facility allowance algorithms contained in the RPLANS program. Note that the assets database and facility allowance database contained in the ISR software are installation specific, downloaded from the HQIFS and HQRPLANS systems.

b. The software program will calculate a quantity ratio of permanent assets divided by allowances and convert this to a C-level according to the method described in Appendix F, Quantity C-level Explanation. These ratios will reflect the permanent assets of the entire installation for each facility type and not for individual, subordinate units or organizations.

c. During the first field test, there were several concerns with the accuracy and validity of the facility assets and allowance data contained in the ISR databases provided to the installations. These inaccuracies led to some software generated C-ratings the installation's did not believe truly represented their infrastructure status.

d. In reaction to this concern, the ISR software now allows installations limited direct edit capability of the assets database provided in the software. Instructions for using this edit capability are contained in the ISR software user's manual. Any edits of the ISR assets database should be coordinated with the installation's real property manager, normally located in the DEH / DPW office. **Note that changing assets data in the ISR database will not alter the installation's real property asset database of record contained in the HQIFS system. This edit capability should only be used to help correct inaccurate C-ratings that result from discrepancies in the assets data provided in the ISR program. Changes to real property assets data must still be submitted through current channels via updates of the IFS-M or DR REAL systems.**

e. This ISR software also allows installations to edit the facility requirements contained in the ISR database. Instructions for editing requirements are contained in the ISR software user's manual. **This capability should again only be used to correct inaccurate C-ratings generated because of facility requirements the installation believes are not valid. Installations may not have adequate time for this ISR submittal to fully validate requirements for each facility category group (FCG) in RPLANS. Concentrate on those critical FCGs that are generating incorrect C-ratings. Again, editing facility requirements in the ISR database will not alter those reflected in RPLANS. Any edits should be coordinated with the DEH / DPW office to insure that changes are submitted through proper channels. The ACSIM is instituting a streamlined process for installations & MACOMs to validate facility allowances and requirements called the Facility Allowances and Requirements Analysis (FARA) process. This is explained in the paragraph 3-5 below.**

f. Installations may want to change requirements if the installation is adequately fulfilling facility shortfalls using off-post resources or outside programs. For example, a shortfall of Child Care Center facility space may be adequately fulfilled by local economy sources or post in-home child care programs. This may be a better alternative than building additional facility space and hence a reason to adjust RPLANS requirements.

### 3-5. Facilities Allowances and Requirements Analysis (FARA) Process.

a. The FARA process is a tiered analysis intended to bring a consistency of requirements analysis to the planning and programming actions that ultimately lead to executable plans. FARA policy will ensure that macro planning analysis can be accurately translated into micro programming actions.

b. Based on recommendations from MACOMs and installations, the initial objective of the FARA process was determined to be the upward reporting of requirements. The process has been developed for the calculation of requirements (based on personnel, equipment, mission, etc.) and effective assets (based on facility constraints) to be done at installation level. Once requirements are derived, the process defines the justification procedure at the installation level and validation process at the MACOM level.

c. Once the MACOM has validated and approved requirements changes submitted by their installations, information copies are provided to DA and approved requirements will be input to

HQRPLANS / RPLANS. This will then allow the installations, MACOMs and DA to view the same requirements data for use in planning and decision making.

d. The FARA process should be undertaken by the DPW/DEH as a separate action outside of the ISR. Future ISR reports will be based on requirements in HQRPLANS that have been approved through the FARA process.

### 3-6. Determining Sub-Category C-level.

a. The quality and quantity C-levels will be combined by the ISR software program at the sub-category level to determine a composite sub-category C-level. The composite C-level will be the lower of the two C-levels. Figure 3-3 illustrates the methodology.

b. A detailed explanation of the methods used to determine sub-category C-levels is provided in Appendix G, Detailed Sub-Category C-level.

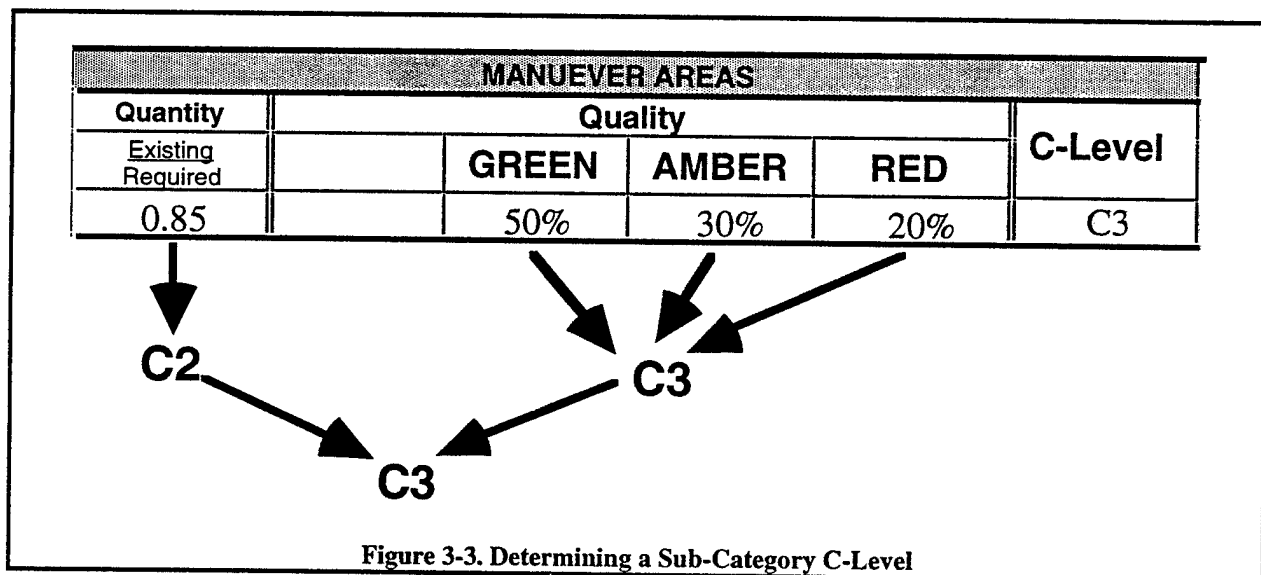


Figure 3-3. Determining a Sub-Category C-Level

c. Several exceptions to the ISR automated C-rating calculations for sub-categories are discussed below:

(1) **Information Management Sub-Category:** The ISR software does not calculate a C-rating for this sub-category because the databases used by the software do not have asset information on facilities in the Information Management Sub-Category. The C-rating for this category has to be determined manually using the Information Management Standards Booklet and Worksheet. The

user fills out the worksheet by assigning a Green, Amber or Red condition status to each inspection item. The user then determines the C-rating for this sub-category using the table at the bottom of the worksheet. The C-rating determined for the Information Management sub-category has to be manually inputted into the ISR software at installation level. Use the "Commander Overwrite" selection of the main software menu to enter the section in which to input the Information Management sub-category C-rating.

(2) **Railhead Facilities Sub-category:**

The ISR software does not calculate a C-rating for this sub-category because the databases used by the software do not have asset information on Railhead facilities. The C-rating for this sub-category has to be determined manually using the Railhead Facilities Standards Booklet and Worksheet. The user fills out the worksheet by assigning a Green, Amber or Red condition status to each inspection item. The user then determines the C-rating for this sub-category using the table at the bottom of the worksheet. The C-rating determined for the Railhead sub-category has to be manually inputted into the ISR software at installation level. Use the "Commander Overwrite" selection of the main software menu to enter the section in which to input the Railhead Facilities Sub-category C-rating.

(3) The ISR software does not calculate a C-rating for two other sub-categories, **Rail & Truck Operations Areas and Terminal Intermodal Facilities, both under the Ports Category**. Inspect the facilities in these two sub-categories using the appropriate worksheets and standards booklets. Apply the C-rating determination table at the bottom of each inspection worksheet to the results to manually calculate the sub-category C-rating. Use the "Commander Overwrite" selection of the main ISR software menu to input these sub-category C-ratings.

**3-7. Determining Category C-Rating.**

a. C-ratings for each category are determined by the ISR software program. The software will generate a simple average of the composite C-ratings for each of a category's subordinate sub-categories. Sub-Categories which do not have any facility requirements will not be used in the calculations.

b. A detailed explanation and example of the Category C-rating calculations are at **Appendix H, Detailed Category C-Rating**.

**3-8. Determining Area C-Rating.**

a. C-ratings for each Area will be determined by the ISR software program. The software will calculate a simple average of the C-ratings for each of an area's subordinate categories. Categories which do not have any facility requirements will not be used in the calculations.

b. A detailed explanation and example of the Area C-Rating calculations are at **Appendix I, Detailed Area C-Rating**.

**3-9. Commander's Overwrite Option of Area C-ratings.**

a. While the ISR software program will calculate Area C-ratings, it is not meant to be the final rating. The ISR Program is designed to give the Installation Commander the ability to consider other factors which may influence the adequacy of facilities needed to accomplish assigned missions. The software will provide the commander a report with the calculated ratings, but then accept changes to area C-ratings which the commander deems appropriate. Instructions for this are contained in the software user's manual. The commander is asked to provide written justification for any changes made to area C-ratings.

b. The commander may want to consider the condition and availability of semi-permanent or temporary facilities in any adjustments of area C-ratings. An installation may have semi-permanent or temporary facilities, not reflected in the calculated C-rating, that currently fulfill facility shortfalls. The software will still generate the estimated costs to fulfill these shortfalls but the C-rating can be adjusted to better reflect the installation's status in that area.

c. Examples of other factors which might influence a commander's decision about a particular C-rating include location, environment, health, safety, or preservation factors. The location factor might be the installation's location in the United States or the facilities' location on the installation. The other factors; environmental, health, safety, and preservation, will be considered when they have a deleterious effect on the ability of the facility to perform the function it was meant to accomplish. These factors are only to be applied to an entire area across the entire installation. If these other factors are positive, raise the area C-rating. If they have a negative impact on the installation, lower the area C-rating.

**3-10. Costing Overview.**

a. Cost factors are included in the Installation Status Report software to automatically calculate the cost of new construction requirements, renovation projects, and the annual sustainment of the installation facilities. All cost factors are at the Facility Category Group (FCG) level of detail in accordance with AR 415-28. The cost factors are contained in the ISR software.



b. The building blocks for cost reporting are new construction, renovation, and sustainment costs expressed at the FCG level of detail. Using these building blocks, costs are summarized at sub-category, category, area, and installation levels of aggregation while retaining a complete audit to the detailed inspections and their cost implications. Factors are built into the software to adjust costs by location across CONUS (includes Hawaii and Alaska).

(1) *New construction cost factors.* New construction cost factors include the basic construction cost and allowances for inflation, technological adjustment, cost data reliability, contingency, supervision, support facility requirements and site preparation. The ISR software uses these factors to estimate the new construction costs required to improve an FCG quantity C-level to C-1.

(2) *Renovation cost factors.* Renovation cost factors are used to estimate the cost of correcting quality deficiencies noted during the installation inspection. Renovation cost factors are automatically applied in the ISR software to correct facilities which have been graded as AMBER or RED during an inspection. The factors are designed to upgrade the AMBER or RED facilities to GREEN. Renovation factors at the FCG level are provided for renovating an AMBER facility to GREEN and a RED facility to GREEN. The renovation cost factors are expressed as percentages of new construction costs.

(3) *Sustainment cost factors.* Sustainment cost factors are included in the ISR software to automatically calculate the annual cost to maintain a facility at current levels. The cost factors are provided for both permanent and non-permanent (semi-permanent or temporary) facilities and include the components of annual recurring maintenance and major component replacement. The sustainment cost factors, expressed at the FCG level, represent the average annual cost anticipated during the life cycle of the facility. The sustainment cost factors are expressed as cost per unit of measure.

c. The ISR software will separate the costs by appropriation and budget activity. Budget activity will be identified throughout these instructions as a reminder that some appropriations are split further than other appropriations. New construction costs are collected in the Military Construction (MILCON) appropriation. Sustainment costs are reported in the appropriation and budget activity of the owning UIC. The renovation costs are split between the owning UIC

budget activity and appropriation and MILCON. The Sustainment costs will be automatically displayed for the budget years. Renovation and new construction costs must be spread by the installation and then automatically inflated as appropriate, by the software.

d. The ISR Costs Reports program generates reports broken down by ISR Area, displayed by appropriation and budget activity and summarized by type of cost (new construction, renovation and sustainment). The costs reports program will use default values and ask the user a series of questions to better identify the source of funding and reimbursement. This costs reports program is still under development. The program and user instructions will be sent to MACOMs and installations prior to the field test start date.

### 3-11. Cost Reports

a. These reports reflect the new construction and renovation costs, by appropriation and two digit budget activity, to improve the installation's ISR Area C-ratings to C-1. They also reflect the sustainment costs, by appropriation and two digit budget activity, to maintain the installation's ISR Area C-ratings at their current level. The software program will provide a separate report for each type cost, by appropriation and budget activity, by ISR Area. The program will also provide a total report for the installation by ISR Area.

(1) *New Construction Cost Report:* The new construction costs are calculated as explained above. The cost report calculates the aggregate cost to build new facilities for each ISR Area. These costs are further separated by appropriation. The program will allow the installation to spread the aggregate new construction costs over a five year period and an outyears period (See **Note\*** below this paragraph) This distribution of costs over time represents the installation's plan to "get well" and reflects the Commander's priorities and the installation's capabilities to execute the plan over time. This will be done by entering, for each ISR Area and appropriation combination, the percent of the aggregate cost in each of the reported years. The program will then distribute and inflate the aggregate cost over the years. Installations will also be able to show programmed dollars and net dollar requirements for each ISR Area.

**NOTE\*:** The aggregate cost figure calculated may be large since semi-permanent, temporary facilities are not counted as available on-hand assets when the ISR software calculates the new construction costs required

to bring an installation's C-level to C-1. The program generates a cost to replace all required semi-permanent, temporary facilities that are currently being used in place of permanent facilities. Since funding to replace all these facilities cannot reasonably be provided within the five year planning time frame captured on the ISR, an "Outyears" column representing BY + 5 through 20 years is included. This column should contain amounts that cannot reasonably be programmed in the BY through BY + 4 years.

(2) **Renovation Costs Report:** The renovation costs are calculated as explained above. The cost reports program calculates the aggregate cost to renovate facilities for each ISR Area. These costs are further separated by appropriation and budget activity. The software will split the costs between MILCON and parent user appropriation. The program will allow the installation to spread the aggregate renovation costs over a five year period. This distribution of costs over time represents the installation's plan to "get well" and reflects the Commander's priorities and the installation's capabilities to execute the plan over time. This will be done by entering, for each ISR Area and appropriation combination, the percent of the aggregate cost in each of the reported years. The program will then distribute and inflate the aggregate cost over the years. Installations will also be able to show programmed dollars and net dollar requirements for each ISR Area.

(3) **Sustainment Costs Report:** The sustainment costs are calculated as explained above. The program displays the costs to maintain facilities in each ISR Area such that the Area's C-rating remains the same. These costs are further separated by appropriation and budget activity. The program calculates the annual cost for sustainment and then automatically inflates these costs to represent the costs for each of the next five years.

b. The DEH/DPW and DRM need to advise the installation commander on which portions of the new construction effort can be reasonably accomplished over a five year period. MCA projects that are already approved under the installation Master Plan (BY and BY + 1) need to be considered when spreading costs. They also need to be involved in the recommended spread of renovation costs over a five year period.

c. Renovation and New Construction cost reports for MWR facilities should be calculated for APF and NAF funding IAW guidance in AR 215-5 and MWR UPDATE number 16.

d. The installation must submit the cost estimates created by the ISR software in preparing this report. However, if installations have other cost estimates believed to be more accurate, they should be submitted along with the estimating methodology as an enclosure to the ISR.

### **3-12. Appropriation Progress Statement.**

a. The appropriation progress statement is designed to reflect installation progress on C-levels since the date of the previous ISR report. This report should not be completed during the field test since no money has yet been appropriated based on previous ISR submissions. Instructions are discussed below to familiarize you with the report.

b. A separate report is prepared for each appropriation. This report should be prepared by the DEH and DRM. Indicate the C-level for each of the ISR areas by appropriation on the previous ISR submission. Enter dollars which have been appropriated for capital improvements. Also enter dollars obligated against capital improvements. Indicate the C-level for each of the ISR areas on the current ISR report. Use the section for comments to explain circumstances concerning installation progress.

### **3-13. Installation Progress Statement.**

a. The progress statement is designed to reflect a summary of installation progress on C-levels since the date of the previous ISR report. This report should not be completed during the field test since no money has yet been appropriated based on previous ISR submissions. Instructions are discussed below to familiarize you with the report.

b. This report should be prepared by the DEH and DRM. Indicate the C-level for each of the ISR areas on the previous ISR submission. Enter total dollars which have been appropriated for capital improvements. Also enter total dollars obligated against capital improvements. Indicate the C-level for each of the ISR areas on the current ISR report. Use the section for comments to explain circumstances concerning installation progress.

### **3-14. Installation Commander's remarks.**

a. In a cover memorandum to the ISR, commanders should rank order the seven infrastructure areas in terms of importance to supporting the installation's missions. This provides a clear statement to higher HQ from the commander about what infrastructure areas are most vital to his/her installation.

b. Installation commanders may submit additional remarks to support and amplify data submitted in the Installation Status Report. These remarks should highlight the major facility conditions that have a significant adverse impact on an installation's ability to meet its mission. These optional remarks should also be contained in the memorandum attached to the ISR form.

c. Specific remarks are required to explain the adjustment to any area C-ratings.

### **3-15. Automation.**

a. Installations will be provided with a set of software programs which will automate a number of support functions for the ISR. The software program will be the mechanism to record and store the individual facility quality inspection results. It will contain the necessary Army standard criteria algorithms to calculate the allowances for each facility type. It will include the installation's facility assets contained in either its IFS-M or DR REAL program and reported by the installation to the HQIFS Program. It will contain the various cost factors mentioned in these instructions. With these data the software program will calculate C-level ratings and various costs by facility type. Software program output reports will provide information with which to complete the various reports required by the ISR Program.

b. While the software program will calculate C-level ratings, it is not meant to be final. The ISR Program is designed to accept and use the commander's judgment in determining the C-level of the various Areas inspected. The commander will provide written justification for any changes made.

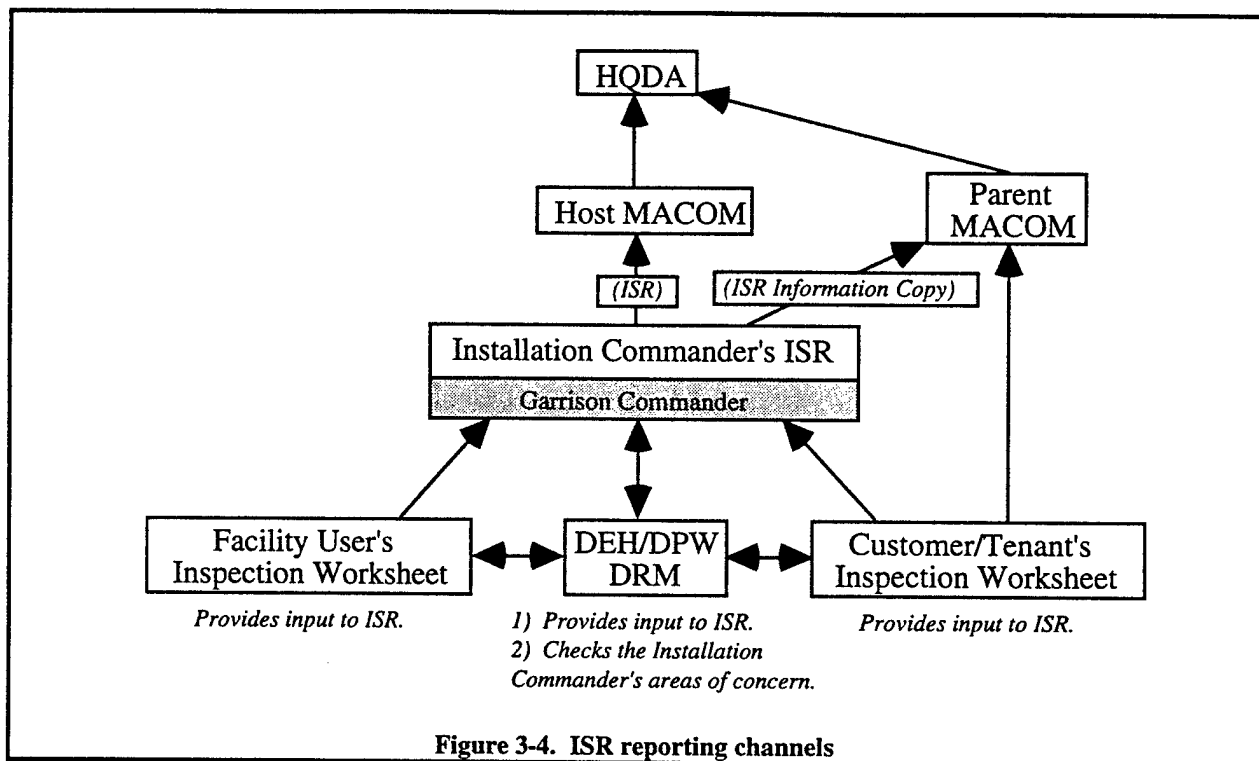
c. Information about the software program is contained in Appendix L, ISR Software Program and the user's manual.

### **3-16. Submission Requirements.**

a. **The ISR should reflect conditions as of 15 Feb. 94.** Installations will submit the following reports for Part I of the ISR to their host MACOM by the suspense date provided:

- (1) Installation Status Report with cover memorandum of Commander's remarks.
- (2) Automated New Construction Cost Reports.
- (3) Automated Renovation Cost Reports.
- (4) Automated Sustainment Costs Reports.
- (5) Disk uploaded with all completed automated ISR reports. The user's manual describes how to load the completed reports and databases on floppy disks.
- (6) Installation Commander's feedback survey. Feedback surveys were an effective means of identifying the strengths and weaknesses of the ISR during the first field test. Installation Commanders are asked to personally complete a short survey in order to provide the CSA direct feedback on the ISR's utility after the field test. This survey is provided in Appendix L.
- (7) Installation ISR POC feedback survey. This is a more detailed survey assessing the quality of the ISR's various system components. This survey is in Appendix M.

**3-17. Submission channels.** Installation reports should be submitted to MACOMs not later than (TBD by MACOMs). MACOMs should submit test reports to the Assistant Secretary of the Army (Financial Management) ATTN: SAFM-RBM not later than 15 April 94. Information copies of the completed ISR should be submitted to the parent MACOMs of the tenants on an installation. Figure 3-4 provides a diagram of report flow



**3-18. Standard rules and procedures.** The following rules and procedures are incorporated into the ISR Software and are provided below.

a. When fractions need to be rounded , "5" or more will result in rounding to the next higher number and anything less than "5" to the next lower number.

b. The terms "higher or highest" and "lower or lowest", when used to describe C-levels, refer to the value of a C-level; for example, a level of C-1 is higher than a level of C-4.

c. The terms "higher or highest" and "lower or lowest", when used to describe Quality-levels, refer to the value of a color quality level; for example, the value of the colors from highest to lowest is: GREEN, AMBER, RED. See Table 3-1, page 12.

### 3-19. Special Reporting Situations.

a. *Single Purpose, Multi-User Facilities.* The building commandant will use the appropriate standards booklet and submit the inspection worksheet through the chain of command to the Garrison staff ISR POC.

b. *Multi-Purpose, Multi-User Facilities.* For each purpose/use there will be one inspection performed. The inspector will submit the completed inspection

worksheet through the chain of command to the Garrison Staff ISR POC.

c. *Government Facilities Operated by Contractors (e.g., Laundries, DOL Maintenance Facilities, Government Owned Contract Operated (GOCO) Installations).* The responsible staff office will use the appropriate standards booklet and turn in inspection worksheets to the Garrison staff ISR POC.

d. *Contractor Built and Operated Facilities. (e.g., Banks, Burger Kings)* If listed on the real property inventory as a reportable facility, the responsible staff office will use the appropriate standards booklet and turn in inspection worksheets to the Garrison staff ISR POC.

e. *Government Owned and Operated Industrial Plants.* The user will use the appropriate standards booklet and turn in inspection worksheets to the Garrison staff ISR POC

f. *Non-Appropriated Facilities.* The user will use the appropriate standards booklet and turn-in inspection worksheets to the DPCA.

## Section II Suggestions for Implementing the ISR at Installation Level

The first field test provided some valuable lessons learned on how an installation conducts the ISR. This section provides suggestions on task organization and process planning steps for an installation. **These are just suggestions - they are not meant to dictate to installations how to accomplish the mission.**

### 3.20 Task Organization

a. The installations that prepared the most detailed reports, and apparently got the most cooperation from units and directorates, were those that organized a multi-functional team (task force) from the Garrison staff to execute the ISR. Generally, the installations that had the most difficulty in implementing the ISR were those that kept the responsibility solely within the DEH/DPW realm.

b. An effective approach used by some installations was putting overall responsibility for the ISR under the G-3 / Director of Plans & Training office. This enabled these installations to make facility users responsive and supportive in the inspection process. Also, these installations used Unit Status Report (USR) reporting channels to initially organize the ISR reporting channels. Other key members of a multi-functional ISR team need to be the real property manager and/or the master planner from the DEH/DPW, and someone from the Resource Management office who understands the appropriation sources used by the installation.

### 3.21 Task Planning Steps.

a. In preparing to conduct an ISR, the ISR POC can use these task planning suggestions:

(1) Task the Real property manager to update the assets inventory looking particularly at:

- Facility conversions and diversions;
- Multi-use facilities; and
- UICs in the database.

(2) Carefully plan task organization at the installation level considering the comments in paragraph 3.27.

(3) Brainstorm the method for facility inspections. The preferred approach is to use user / unit level inspections. Another approach is to use centralized inspection teams. Both approaches were used during the initial test with success. The user / unit level inspections are preferred because they provide

first hand knowledge about conditions from those using the facility. Quality control of the process is more difficult with this approach. Centralized teams can be easier to organize and supervise, however the inspection process takes longer due to limited resources.

(4) Plan for training the facility inspectors. The training video should help this process. **Emphasize the importance of objective assessments of facilities in "as is" condition.** The facility standards and inspection worksheets have been refined based on the comments from the first test installations. If the inspectors have suggestions for improving the standards booklets and/or worksheets, have them annotate comments on a clean copy of the standards and/or worksheets. Submit these comments with the completed ISR test package so standards can be further improved.

(5) Lay out a plan for who inspects what facility. See figure 3.1 for a breakdown of installation offices normally responsible for the facilities within the ISR sub-categories.

(6) Develop a plan for consolidating inspection data using the ISRS software or manual means, such as using the Quality Roll-Up sheet.

(7) Plan for quality control of inspections. Some installations randomly audited 10% of the overall number of inspections using a DEH/DPW team. Most test installations had to manually inspect each facility worksheet for accuracy as they entered data into the ISR software.

(8) Determine how best to consolidate facility quality data at the main ISR computer workstation.

(9) **Generate the initial ISR reports and do a "Sanity Check" of the C-Ratings.** If some do not seem to make sense, there is probably a problem with either the facility allowances / requirements from RPLANS and/or the real property asset data in the ISR database.

(10) Task the DRM, DPCA and DEH/DPW personnel to jointly complete cost reports.

(11) Provide information to the installation commander with recommendations for raising / lowering area C-Ratings. Have the Commander rank order the 7 infrastructure areas in terms of priority for resources and importance to supporting missions.

(12) Prepare Commander's cover memorandum to the ISR. Ask the Commander to complete the feedback survey contained in Appendix L.

(13) Prepare the ISR POC's feedback survey contained in Appendix M.

Ofc. of the Asst. Secretary of the Army (FM)  
109 Army Pentagon (Room 3A720)  
ATTN: Suzanne Carlton  
Washington D.C., 20310 - 0109

### **Section III**

#### **Summary Reports Prepared By MACOMs**

**3-22 Overview.** Summary reports will be submitted by MACOMs. They provide an assessment of the status of installations. MACOM POCs will be provided an ISR software program that can prepare summary reports for their use from the aggregated installation reports. MACOM POCs will need the installation ISR reports on disk in order to generate these reports.

#### **3-23. Compiling Installation Status Reports.**

a. The complete report for an installation must be visible up to HQDA level. Hard copies of installation reports should be submitted to HQDA along with disks containing the MACOM summary reports.

b. MACOM Chiefs of Staff are asked to complete a feedback survey, provided in Appendix N, assessing the utility of ISR information to the MACOM.

c. MACOM ISR POCs will be asked to provide more detailed feedback with a survey assessing the uses of ISR data by the MACOM staff. This survey is provided in Appendix O.

#### **3-24. MACOM Commander's remarks**

a. MACOM commanders may submit additional remarks to support and amplify data reported by subordinate installations on the ISR. These optional remarks should be prepared as a memorandum attached to the summary ISR reports.

b. Completed ISR packages should be forwarded from MACOM POCs to the Asst. Secretary of the Army for Financial Management at the following address NLT  
15 April 94:

Housing Facilities Worksheet		Barracks	Overall Quality Rating:
Facility Number:	Installation Number:	Inspector:	Date Completed:
Facility User UIC:			
Facility Category Group:			
FACILITY CONDITION ASSESSMENT			
Condition of Each Area			
Place an "X" in the box that applies to each inspection area.			
Inspection Area	GREEN	AMBER	RED
<b>Common Building Areas</b>			
1. Site & Grounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Parking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Building Exterior ***	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Service Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Lobby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Corridors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Toilets/Showers ***	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Facility Specific Areas</b>			
9. Lounge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Living Area ***	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Trainee Barracks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Outdoor Formation Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sum of "X's" in each column	<input type="text"/>	<input type="text"/>	<input type="text"/>
Majority item color rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Critical *** item color rating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Location Comment:			
Environmental, Health, Safety, & Preservation (EHSP) Comment:			

Figure 3-5. Sample Inspection Worksheet

[illegible]

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**Appendix A**  
**References**

**AR 1-1**

Planning, Programming, Budgeting, and Execution System.

**AR 11-18**

The Cost and Economic Analysis Program

**AR 11-32**

The Army Long-Range Planning System.

**AR 25-1**

Army Information Resources Management Plan.

**AR 25-3**

Army Life Cycle Management of Information Systems.

**AR 25-3**

Army Life Cycle Management of Information Systems.

**AR 210-13**

General and Flag Officer Quarters (GFOQ) and Installation Commanders Quarters (ICQ) Management.

**AR 210-20**

Master Planning for Army Installations.

**AR 210-50**

Installation Housing Management.

**AR 310-50**

Authorized Abbreviations.

**AR 380-5** Department of the Army Information Security Program.

**AR 405-45**

Inventory of Army Military Real Property.

**AR 415-15**

Military Construction, Army (MCA) Program Development

**AR 415-28**

Department of the Army Facility Classes and Construction Categories

**AR 420-10**

Management of Installation Directorates of Engineering and Housing.

**AR 420-40**

Historic Preservation.

**AR 420-72**

Surfaced Areas, Bridges, Railroad Track and Associated Appurtenances.

**TC 25-1**

Training Land.

**AR 11-2**

Internal Management Control.

**DA Pamphlet 750-13**

Operating Guide for TDA Support Maintenance Operations

**Appendix B**  
**Relationship of Categories to Areas**

Installation Status Report Areas:    1. Mission Facilities  
    2. Strategic Mobility Facilities  
    3. Housing  
    4. Community Facilities  
    5. Utility Systems  
    6. Army Reserve Facilities  
    7. National Guard Facilities

<b>Relationship Of Categories To Areas On The Installation Status Report</b>	
<b>Category</b>	<b>Area</b>
Training Ranges & Areas	Mission Facilities
Maintenance & Production Facilities	Mission Facilities
Classrooms	Mission Facilities
Research & Development	Mission Facilities
Supply & Storage Facilities	Mission Facilities
Conventional Ammunition Facilities	Mission Facilities
Administrative Facilities	Mission Facilities
Information Management	Mission Facilities
Road & Trail Network	Strategic Mobility Facilities
Railroad	Strategic Mobility Facilities
Airfield	Strategic Mobility Facilities
Ports	Strategic Mobility Facilities
Family Housing	Housing
Unaccompanied Personnel Housing	Housing
Dining Facilities	Housing
Post Exchange	Community Facilities
Commissary	Community Facilities
Hospital & Medical Facilities	Community Facilities
Child Development Centers	Community Facilities
Community Support	Community Facilities
Heat/AC	Utility Systems
Electric/Gas	Utility Systems
Water	Utility Systems
Sewer	Utility Systems
Army Reserve Facilities	Army Reserve Facilities
National Guard Facilities	National Guard Facilities

**Appendix C**  
**Relationship of Sub-Categories to Categories**

<b>Sub-Category</b>	<b>Category</b>
Individual Weapon Qualification Ranges	Training Ranges & Areas
Major Weapon System Ranges	Training Ranges & Areas
Maneuver Areas	Training Ranges & Areas
Maintenance Facilities	Maintenance & Production Facilities
Production Facilities	Maintenance & Production Facilities
General Purpose Instruction Facilities	Classrooms
Applied Instruction Facilities	Classrooms
Research & Development Buildings	Research & Development
Research & Development Ranges	Research & Development
Bulk Fuel Receipt, Issue, & Storage Site	Supply & Storage Facilities
General Supply & Storage Facilities	Supply & Storage Facilities
Ammunition Storage Facilities	Conventional Ammunition Facilities
Ammunition Maintenance Facilities	Conventional Ammunition Facilities
Unit Operations Buildings	Administrative Facilities
General Purpose Administrative Facilities	Administrative Facilities
Confinement Facilities	Administrative Facilities
Information Management	Information Management
Surfaced Roads	Road & Trail Network
Railroad Track	Railroads
Railhead Facilities	Railroads
Airfield Facilities	Airfield
Airfield Pavements	Airfield
Piers & Wharves	Ports
Staging & Marshaling Facilities	Ports
Rail & Truck Operations Areas	Ports
Terminal Intermodal Facilities	Ports
Family Housing	Family Housing
Senior Bachelor Enlisted/Bachelor Officer Qtrs.	Unaccompanied Personnel Housing
Barracks	Unaccompanied Personnel Housing
Transient Housing Facilities	Unaccompanied Personnel Housing
Dining Facilities	Dining Facilities
Post Exchange	Post Exchange
Commissary	Commissary
Dental Clinic	Hospital & Medical Facilities
Hospitals	Hospital & Medical Facilities
Troop Medical Clinics	Hospital & Medical Facilities
Vet Facilities	Hospital & Medical Facilities
Child Development Centers	Child Development Centers
Education Facilities	Community Support
Physical Fitness Centers	Community Support
Outdoor Sports & Recreation Facilities	Community Support
Recreation Facilities	Community Support
Service Facilities	Community Support
Heat/Air Conditioning Source Distribution	Heat/AC
Electric Source, Distribution & Substations	Electric/Gas
Water Treatment, Storage & Distribution	Water
Sewage Treatment, Disposal & Collection	Sewer
Army Reserve Facility	Army Reserve Facilities
National Guard Facility	National Guard Facilities

## Appendix D

### Sub-Categories Cross-walk To Facility Category Group (FCG)

For all Sub-Categories except Information Management, the DEH can provide a list of all facilities which fall under each of the Sub-Categories. Using the Cross-Walk Table contained in this appendix and the IFS-M or DR REAL Systems, the DEH can produce lists of facilities by Sub-Category which include the facility number and the responsible organization. Multi-use facilities will appear on each Sub-Category list which applies.

Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
<b>Mission Facilities</b>		
Individual Weapon Qualification Ranges	17121	Indoor Firing Range
	17901	Basic 25m Firing Range
	17902	Field Firing Range
	17903	Record Firing Range
	17907	Sniper Training Range
	17909	Machine Gun 10m Range
	17910	Machine Gun Transition Range
	17917	Grenade Launcher Range
	17923	MOUT CFT Facility
	17928	Combat Pistol Range
	(*)17904	Night Fire Range
	(*)17906	Known Distance Range
	(*)17908	Target Detection Range
	(*)17913	Hand Grenade Familiarization Course
	(*)17916	Hand Grenade Confidence Course
	(*)17918	Recoilless Rifle Range
	(*)17919	Light Anti Armor Weapon Range
	(*)17920	Anti Armor Tracking & Live Fire Range
	(*)17921	Demo, Booby Trap & Land Mine Area
	(*)17922	Flash and Flame Thrower Range
	(*)17947	Bayonet Assault
	(*)17967	Infiltration Course

Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
Major Weapon System Ranges	17912	APC Firing Range
	17930	Tank Gunnery 1:30 & 1:60
	17931	Tank Gunnery 1:5 & 1:10
	17932	Tank Gunnery Stationary
	17133	Tank Crew Combat Fire
	17937	Aerial Gunnery Range
	17942	Field Artillery Indirect Fire Range
	17943	Air Defense Artillery Firing Range
	(*)17924	Mortar Scaled Training Range
	(*)17925	Mortar Range
	(*)17926	Infantry Squad Battle Course
	(*)17927	Infantry Platoon Battle Course
	(*)17935	Combat Engineer Vehicle Range
	(*)17936	Gunship Harmonization Range
	(*)17938	Field Artillery Scaled Range
	(*)17944	Platoon Defense Against Aircraft
Maneuver Areas	17986	Maneuver Area
Maintenance Facilities	21110	Maintenance Hanger AVUM
	21111	Maintenance Hanger AVIM
	(+) 21120	Miscellaneous Aircraft Maint. Hangers
	(+) 21410	Vehicle Maintenance Shop, Organizational
	21420	Vehicle Maintenance Shop, DS
	45200	Vehicle Hardstand
	21210	Guided Missile Maintenance Building
	(+) 21435	Vehicle Rebuild Facility
	(**) 21456	Central Wash Facility
	(**) 21800	Special Purpose Maintenance Shop
	(X) 21810	Par/ABN Equipment Repair
	(**) 21900	Installation Maintenance Facilities
	(+) 21510	Gun/Weapon Repair Facility
	21830	Miscellaneous Maintenance Building

Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
Production Facilities	(+) 22110	Aircraft Production Buildings
	(+) 22210	Guided Missile Production Facility
	(+) 22310	Ship Production Buildings
	(+) 22410	Tank/Automotive Production Facility
	(+) 22510	Weapons Production Building
	(+) 22610	Explosive Production Facility
	(+) 22710	Communications Production Building
	(+) 22810	Leather & Textile Production Plant
	(+) 22820	Construction Equipment Production Plant
	(+) 22830	Railroad Equipment Production Plant
	(+) 22840	Print Plant
	(+) 22890	Miscellaneous Production Buildings
	(+) 22910	Production Maintenance Repair Operations
General Purpose Instruction Facility	(**) 17120	General Purpose Instruction Facility
	(**) 17115	Band Training Facility
Applied Instruction Facility	(**) 17130	Applied Instruction Facility
	(**) 17160	Training Aids Support Center
	(*) 17112	Flight Simulator Building
	(*) 17182	Moving Target Simulator Building
Research & Development Buildings	(+) 31010	RDT&E Laboratory
	(+) 31110	Aircraft RDT&E
	(+) 31210	Missile, Space RDT&E
	(+) 31310	Marine Equipment RDT&E
	(+) 31410	Tank/Automotive RDT&E
	(+) 31510	Weapon RDT&E
	(+) 31610	Explosive RDT&E
	(+) 31710	Electronic RDT&E
	(+) 31810	Propulsion RDT&E
	(+) 31910	Non-Metallic RDT&E
	(+) 32010	Under-water Equipment RDT&E
	(+) 32110	Technical Services Support
	(+) 39010	Other RDT&E Facilities
Research & Development Ranges	(+) 37110	RDT&E Range Facilities
Bulk Fuel Receipt, Issue, & Storage Site	(**) 41100	Liquid Fuel Storage

Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
General Supply & Storage Facilities	(**) 43200 (+) 44100 (**) 44200 (**) 44230 (**) 44240 44260	Cold Storage, Installation General Purpose Ware House, Depot General Purpose Warehouse, Installation Controlled Humidity Storage Flammable Material Storage Vehicle Storage Shed
Ammunition Storage Facilities	(+) 42100 (**) 42210	Conventional Ammunition Facilities, Depot Conventional Ammunition Facilities, Installation
Ammunition Maintenance Facilities	21610	Ammunition Maintenance Facilities
Unit Operations Buildings	14112 14182 14183 14185	Aviation Operations Buildings Brigade Headquarters Buildings Battalion Headquarters Buildings Company Headquarters Buildings
General Purpose Administrative Facilities	61050	General Purpose Administrative
Confinement Facilities	(+) 73015	Confinement Facility
Information Management	N/A	N/A
<b>Strategic Mobility Facilities</b>		
Surfaced Roads	(**) 85100 (**) 85210 (**) 85215 (*) 85120	Roads Organizational Vehicle Parking Non-organizational Vehicle Parking Vehicle Bridge
Railroad Track	(X) 86010 (X) 21320	Railroads Marine Railway
Railhead Facilities	N/A	N/A
Airfield Facilities	14110	Air Field Operations Building

Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
Airfield Pavements	11110	Fixed Wing Runways
	11120	Rotary Wing Runways
	11210	Standard Taxiway
	11310	Fixed Wing Aircraft Bridges
	11320	Rotary Wing Aircraft
	11330	Aircraft Maintenance Aprons
	11340	Hanger Access Aprons
	11350	Aircraft Runway Holding Apron
	11370	Aircraft Washing Apron
	11380	Aircraft Loading Apron
	11610	Compass Swing Base
Piers & Wharves	(X) 15110	Piers/Wharves
Staging & Marshaling Facilities	(X) 14310	Miscellaneous Ship Operations Buildings
	(X) 15310	Staging Area
Rail & Truck Operations Areas	N/A	N/A
Terminal Intermodal Facilities	N/A	N/A
<b>Housing</b>		
Family Housing	71100	Family Housing
Senior Bachelor Enlisted/Bachelor Officer Quarters	(**) 72400	Officer UPH
	72170	Senior Enlisted Quarters
Barracks	72100	Enlisted UPH
	(**) 72114	Enlisted Barracks, AT/MOB
	(**) 72181	Enlisted Barracks, Trainee
Transient Housing Facilities	(**) 74032	Transient Housing Facilities
Dining Facilities	72200	Unaccompanied Personnel Housing Dining Facility
<b>Community Facilities</b>		
Post Exchange	74052	Exchange Service Station
	74053	Exchange Main, Retail
	74064	Restaurant/Cafe
Commissary	(**) 74021	Commissary
Dental Clinic	54010	Dental Clinic
Hospitals	51010	Hospital
Troop Medical Clinics	55010	Health Clinics
Vet Facilities	(X) 53040	Vet Facility



Sub-Category	Facility Category Group	Facility Category Group (FCG) Description
Child Development Centers	(**) 74014	Child Support Center
Education Facilities	(+) 73048 (+) 73049 74025	Dependent Grade Schools Dependent High Schools ACES Facility
Physical Fitness Centers	74028	Physical Fitness Facility
Outdoor Sports & Recreation Facilities	75010 75011 (**) 75020 75021 (**) 75022 (**) 75030 (*) 75012 (*) 75018 (*) 75027 (*) 75040 (*) 75041	Tennis Courts Multiple Courts Baseball Fields Softball Fields Football/Soccer Fields Outdoor Pools Basketball Court General Purpose Playground Running Track Golf Course, 18 hole Golf Course, 9 hole
Recreation Facilities	74022 74024 74011 (**) 74069 (**) 74066 74010 74033 74041 (**) 74046	Skill Development Center Skill Development Center, Auto Bowling Recreation Building Youth Center Auditorium, General Purpose Community Center Library Center Open Dining Facility
Service Facilities	(+) 73010 73020 (+) 73028 (+) 73030 (+) 73073 (**) 74006 (*) 76010	Fire Station Chapel Center Facilities Drug Abuse Center Laundry/Dry Cleaning Facility Post Office Bank Museum
<b>Utility Systems</b>		
Heat/Air Conditioning Source & Distribution	(+) 82100 (X) 82111 (+) 82200	Heat Source Miscellaneous Heating Plant Heat Distribution System

<b>Sub-Category</b>	<b>Facility Category Group</b>	<b>Facility Category Group (FCG) Description</b>
Electric Source, Distribution & Substations	(**) 81100	Electric Power Source
	(X) 81121	Miscellaneous Electric Power
	(**) 81200	Electric Power Distribution System
	(**) 81300	Electric Power Substations
Water Treatment, Storage & Distribution	(**) 84100	Water Supply Treatment
	(X) 84127	Miscellaneous Water Treatment
	(**) 84120	Water Supply Storage
	(**) 84200	Water Supply Distribution System
Sewage Treatment, Disposal & Collection	(**) 83100	Sewer Treatment & Disposal
	(X) 83120	Miscellaneous Sewage Treatment
	(**) 83200	Waste water Collection System
	(X) 83310	Waste/Refuse Garbage Facility
<b>Army Reserve Facilities</b>		
Army Reserve Facility	(+) 17140	Army Reserve Center
	(+) 21409	Army Reserve Maintenance Facility
<b>National Guard Facilities</b>		
National Guard Facility	(+) 17142	National Guard Center
	(+) 21407	National Guard Maintenance Facility

**Notes:**

(1) (\*) means that this is not a true FCG but rather is an individual CATCODE being treated as an FCG for ISR purposes. It is possible that these may be true FCGs in the future.

(2) (\*\*) = Unvalidated Space Planning Algorithm

(3) (+) = HQRPLANS/RPLANS Allowance = Total Installation Assets

(4) (X) = Not presently included in HQRPLANS/RPLANS analysis/standards reports. For the purpose of the Installation Status Report: Allowances = Total Installation Assets

## Appendix E

### Detailed Quality C-Rating Explanation

A quality C-rating is automatically calculated for each facility category group (FCG) which comprises a sub-category. The example we will work through is for the sub-category Barracks. The FCGs which comprise the sub-category Barracks are: Enlisted Unaccompanied Personnel Housing (UPH); Enlisted Barracks, Annual Training (AT)/Mobilization (MOB); Enlisted Barracks, Trainee. The unit of measure is the number of sleeping spaces in the facility. A space is defined as the area allocated to any soldier in the rank E1 - E4.

The color condition of each permanent facility on an installation has to be entered into the ISR software. The ISR software will determine the amount of the FCG which is GREEN, AMBER, and RED. Let's work through an example.

The facility number and the facility color condition rating have been collected for the FCG Enlisted UPH (72100) and listed in the table below. These data are entered into the ISR software. The ISR software then links the condition information with a database which contains the capacity of the facility.

Facility Number (Entered into ISR Software)	Color Quality Level (Entered into ISR Software)	Facility Capacity (ISR software provides)
2402	AMBER	24 spaces
2403	GREEN	24 spaces
2404	AMBER	24 spaces
2409	AMBER	24 spaces
2410	AMBER	145 spaces
2411	AMBER	145 spaces
2414	GREEN	145 spaces
2415	AMBER	110 spaces
2416	RED	110 spaces

The ISR software will then determine the amount of Enlisted UPH which is GREEN, AMBER, and RED. The software does the following calculations:

Amount of Enlisted UPH GREEN = 24 spaces + 145 spaces = 169 spaces

Amount of Enlisted UPH AMBER = 24 spaces + 24 spaces + 24 spaces + 145 spaces + 145 spaces + 110 spaces = 472 spaces

Amount of Enlisted UPH RED = 110 spaces

Total Enlisted UPH spaces inspected = 169 spaces + 472 spaces + 110 spaces = 751 spaces

Percent of Enlisted UPH GREEN =  $169 \text{ spaces} \div 751 \text{ spaces} \times 100 = 23\%$

Percent of Enlisted UPH AMBER =  $472 \text{ spaces} \div 751 \text{ spaces} \times 100 = 63\%$

Percent of Enlisted UPH RED =  $110 \text{ spaces} \div 751 \text{ spaces} \times 100 = 14\%$

Table E-1 provides the quality C-rating algorithm cutoffs.

Table E-1

**Quality Algorithm Cutoffs at FCG Level**

**Condition:** Percent of facilities GREEN  $\geq 90\%$

**Rating:** C-1

**Condition:** Percent of facilities GREEN and AMBER  $\geq 90\%$

**Rating:** C-2

**Condition:** Percent of facilities GREEN and AMBER  $\geq 50\%$

**Rating:** C-3

**Condition:** Percent of facilities RED  $\geq 50\%$

**Rating:** C-4

From the example: Percent of facilities GREEN = 23%  
Percent of facilities AMBER = 63%  
Percent of facilities RED = 14%

The ISR software calculates the following:

$$\text{Percent of facilities GREEN} + \text{Percent of facilities AMBER} = 23\% + 63\% = 86\%$$

By using Table E-1, the ISR software determines the quality C-rating for Enlisted UPH is C-3.

The ISR software computes quality C-ratings for all FCGs that comprise a sub-category. The table below shows the quality C-ratings for FCGs which comprise the Barracks sub-category.

Facility Category Group (FCG)	Quality C-Rating
Enlisted UPH	C-3
Enlisted Barracks, AT/MOB	C-4
Enlisted Barracks, Trainee	C-1

The quality C-rating of the sub-category is the average quality C-rating for all the facility category groups that comprise the sub-category. The calculations below show how the average quality C-rating is determined.

Number of C-1 FCGs  $\times 1 = 1 \times 1 = 1$

Number of C-2 FCGs  $\times 2 = 0 \times 2 = 0$

Number of C-3 FCGs  $\times 3 = 1 \times 3 = 3$

Number of C-4 FCGs  $\times 4 = 1 \times 4 = 4$

$$\text{Average Sub-Category C-rating} = (1 + 3 + 4) \div \text{Number of total FCGs} = (1 + 3 + 4) \div 3 = 2.7$$

C-1 if the average sub-category C-rating number is less than 1.5.

C-2 if the average sub-category C-rating number is greater than or equal to 1.5 and less than 2.5.

C-3 if the average sub-category C-rating number is greater than or equal to 2.5 and less than 3.5.

C-4 if the average sub-category C-rating number is greater than or equal to 3.5.

The **Quality** C-rating for Barracks in this example is C-3.

## Appendix F

### Detailed Quantity C-rating Explanation

A quantity C-rating is automatically calculated for each facility category group (FCG) which comprises a sub-category. The ISR Software does all quantity C-ratings. The example we will work through is for the sub-category Barracks. The FCGs which comprise the sub-category Barracks are: Enlisted Unaccompanied Personnel Housing (UPH); Enlisted Barracks, Annual Training (AT)/Mobilization (MOB); and Enlisted Barracks, Trainee. The quantity ratio for a given sub-category is calculated by dividing the permanent area/capacity of a sub-category on-hand by the amount required. The assets on-hand for the FCGs in every sub-category except Information Management, Railhead Facilities, Port Rail & Truck Operations Areas, and Port Terminal Intermodal Facilities are available by Category Code (CATCODE) in the Real Property Inventory (RPI) database maintained by the Directorate of Engineering and Housing (DEH) in either the Integrated Facilities Systems, Mini-Micro (IFS-M) or DR REAL databases. A cross-walk table relating CATCODES to FCGs is contained in the installation's Real Property Planning and Analysis System (RPLANS). A cross-walk table relating FCGs to ISR sub-categories is at Appendix C of these instructions. The required quantities by FCGs are initially calculated using the allowance algorithms contained in RPLANS.

The assets and allowances for each installation have been loaded into the ISR software. These data are the latest data sets that have been updated in the HQIFS program. The software will use these data to calculate the Quantity Ratio. The installation can see the values used by producing the RPLANS Tabulation Report, "Tabulation of Facilities by FCG, % Allowance Satisfied". The column entitled "Percent Satisfied, Perm" will show the Quantity Ratio.

Let's work through an example. The ISR software contains the following data for Enlisted UPH.

FCG	FCG Description	Unit of Measure	Perm Assets	Semi Perm Assets	Temp Assets	Avail Off Post Housing Assets	Total Assets	Total Lease d Assets	Reqt.	Perm Assets - Reqt.	Total Assets - Reqt.
72100	ENL UPH	Space	217	0	50	0	267	0	206	11	61

The ISR software uses the numbers from the Perm Assets and Reqt. columns to determine the % Requirement Satisfied. From the table above: Perm Assets = 217 and Reqt. = 206. To determine the % Requirement Satisfied, the following equation is used:

$$\% \text{ Requirement Satisfied} = \text{Perm Assets} \div \text{Reqt.} = 217 \div 206 \times 100 = 105\%$$

With the % Requirement Satisfied, the quantity C-rating for an FCG is determined using the following table:

<b>Table F-1</b>
<b>Rating using % Requirement Satisfied</b>
Percent: 95 or greater
Rating: C1
Percent: 80 to 95
Rating: C2
Percent: 60 to 80
Rating: C3
Percent: Below 60
Rating: C4

By using Table F-1, the quantity C-rating for Enlisted UPH is C-1.

The ISR software computes quantity C-ratings for all FCGs that comprise a sub-category. The table below shows the quantity C-ratings for FCGs which comprise the Barracks sub-category.

Facility Category Group (FCG)	Quantity C-Rating
Enlisted UPH	C-1
Enlisted Barracks, AT/MOB	C-3
Enlisted Barracks, Trainee	C-2

The quantity C-rating of the sub-category is the average quantity C-rating for all the facility category groups that comprise the sub-category. The calculations below show how the average quantity C-level is determined.

Number of FCGs C-1: 1

Number of FCGs C-2: 1

Number of FCGs C-3: 1

Number of FCGs C-4: 0

Determine a quality C-rating for the sub-category.

Number of C-1 FCGs  $X_1 = 1 \times 1 = 1$

Number of C-2 FCGs  $X_2 = 1 \times 2 = 2$

Number of C-3 FCGs  $X_3 = 1 \times 3 = 3$

Number of C-4 FCGs  $X_4 = 0 \times 4 = 0$

$$\text{Average Sub-Category C-rating} = (1 + 2 + 3) \div \text{Number of total FCGs} = (1 + 2 + 3) \div 3 = 2.0$$

C-1 if the average sub-category C-rating number is less than 1.5.

C-2 if the average sub-category C-rating number is greater than or equal to 1.5 and less than 2.5.

C-3 if the average sub-category C-rating number is greater than or equal to 2.5 and less than 3.5.

C-4 if the average sub-category C-rating number is greater than or equal to 3.5.

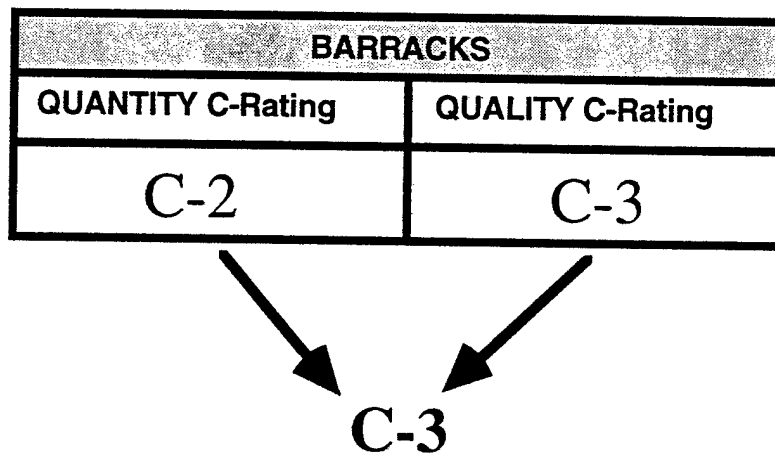
The **Quantity** C-rating for Barracks in this example is C-2.

**Appendix G**  
**Detailed Sub-Category C-Rating Explanation**

To determine the C-rating of a sub-category (i.e., Barracks), the Quantity and Quality C-ratings for that sub-category must be determined from the procedures outlined in appendices E and F. The results of the C-ratings for Barracks from appendices E and F are shown in the table below.

Sub-Category	Quantity C-Rating	Quality C-Rating
Barracks	C-2	C-3

The overall C-rating for the sub-category of Barracks is the **lower** of the quantity and quality C-ratings. This is depicted in the figure below.



The C-rating for Barracks in this example is C-3.

## Appendix H

### Detailed Category C-Rating Explanation

To determine the C-rating of a category (i.e., Unaccompanied Personnel Housing), the C-ratings of the sub-categories that comprise the category must first be determined. For example, to determine the C-rating of Unaccompanied Personnel Housing, the C-ratings must first be determined for Senior Bachelor Enlisted/Bachelor Officer Quarters, Barracks, and Transient Housing Facilities. The Category C-rating is the average of the sub-category C-ratings. For example, suppose the C-ratings for the sub-categories that comprise Unaccompanied Personnel Housing are as follows:

Sub-Category	C-Rating
Senior Bachelor Enlisted/Bachelor Officer Quarters	C-2
Barracks	C-3
Transient Housing Facilities	C-1

Number of sub-categories C-1: 1

Number of sub-categories C-2: 1

Number of sub-categories C-3: 1

Number of sub-categories C-4: 0

Determine a C-rating for the category.

Number of C-1 sub-categories  $X_1 = 1 \times 1 = 1$

Number of C-2 sub-categories  $X_2 = 1 \times 2 = 2$

Number of C-3 sub-categories  $X_3 = 1 \times 3 = 3$

Number of C-4 sub-categories  $X_4 = 0 \times 4 = 0$

Average Category C-rating =  $1 + 2 + 3 \div \text{Number of total sub-categories} = 1 + 2 + 3 \div 3 = 2.0$

C-1 if the average sub-category C-rating number is less than 1.5.

C-2 if the average sub-category C-rating number is greater than or equal to 1.5 and less than 2.5.

C-3 if the average sub-category C-rating number is greater than or equal to 2.5 and less than 3.5.

C-4 if the average sub-category C-rating number is greater than or equal to 3.5.

The C-rating for Unaccompanied Personnel Housing in this example is C-2.



## Appendix I

### Detailed Area C-Rating Explanation

To determine the C-rating of an area (i.e., Housing), the C-ratings of the categories that comprise the area must first be determined. For example, to determine the C-rating of Housing, the C-ratings must first be determined for Family Housing, Unaccompanied Personnel Housing, and Dining Facilities. The Area C-rating is the average of the category C-ratings. For example, suppose the C-ratings for the categories that comprise Housing are as follows:

Category	C-Rating
Family Housing	C-1
Unaccompanied Personnel Housing	C-2
Dining Facilities	C-1

Number of categories C-1: 2

Number of categories C-2: 1

Number of categories C-3: 0

Number of categories C-4: 0

Determine a C-rating for the area.

Number of C-1 categories  $\times 1 = 2 \times 1 = 2$

Number of C-2 categories  $\times 2 = 1 \times 2 = 2$

Number of C-3 categories  $\times 3 = 0 \times 3 = 0$

Number of C-4 categories  $\times 4 = 0 \times 4 = 0$

$$\text{Average Area C-rating} = 2 + 2 \div \text{Number of total categories} = 2 + 2 \div 3 = 1.3$$

C-1 if the average sub-category C-rating number is less than 1.5.

C-2 if the average sub-category C-rating number is greater than or equal to 1.5 and less than 2.5.

C-3 if the average sub-category C-rating number is greater than or equal to 2.5 and less than 3.5.

C-4 if the average sub-category C-rating number is greater than or equal to 3.5.

The C-rating for Housing in this example is C-1.

The commander now considers other factors (See paragraph 3-9) to determine if the C-rating of an area should be raised or lowered. The installation commander is authorized to raise or lower the C-rating of an area due to other factors. The ISR program, under the menu item "Commander Over Write", allows the commander to enter changes deemed appropriate.

## Appendix J Cost Factors

Cost factors are automatically applied in the ISR software to determine the cost for new construction projects to correct quantity shortfalls (reference Appendix F), the cost to correct quality deficiencies (reference Appendix E), and the cost to sustain all facilities on the installation.

A complete listing of new construction, renovation and sustainment factors is not provided in this appendix since the factors are subject to change each fiscal year and are resident in the ISR software. However, the use of the three different factors is described to illustrate their application and relationship to the calculations described in appendices E and F. The general formula for applying the cost factors is:

$$\text{Cost} = \text{quantity of unit of measure} \times \text{factor per unit of measure}$$

The units of measure in the ISR include square feet, square yards, linear feet, acres, each, etc.

New Construction Cost Factor. This factor is expressed in dollars per unit of measure for each FCG contained in the ISR software. As an example, the new construction cost factor for FCG 72100 (Enlisted UPH) is \$25,048 per space. The table below provides an example to show that the % Requirement Satisfied is less than 100% and thus a requirement exists for new construction:

FCG	FCG Description	Unit of Measure	Perm Assets	Semi Perm Assets	Temp Assets	Avail Off Post Housing Assets	Total Assets	Total Lease d Assets	Reqt.	Perm Assets - Reqt.	Total Assets - Reqt.
72100	ENL UPH	Space	751	0	50	0	801	0	850	-99	-49

The ISR software uses the numbers from the Perm Assets and Reqt. columns to determine the % Requirement Satisfied. The new construction cost is calculated as:

$$\text{New Construction Cost} = (\text{Reqt.} - \text{Perm Assets}) \times \text{New Construction Factor}$$

$$\text{New Construction Cost} = (850 \text{ spaces} - 751 \text{ spaces}) \times (\$25,048 \text{ per space}) = \$2,479,752$$

Renovation Cost Factor. This factor is expressed as a percent of new construction cost to attain GREEN from RED and to attain GREEN from AMBER for each FCG contained in the ISR software. As an example, the Renovation factors for FCG 72100 (Enlisted UPH) are:

$$\text{RED Renovation Factor} = 0.4128$$

$$\text{AMBER Renovation Factor} = 0.2843$$

The following table was presented in Appendix E to illustrate the derivation of a Quality C-level.

Facility Number (Entered into ISR Software)	Color Quality Level (Entered into ISR Software)	Facility Size (ISR software provides)
2402	AMBER	24 spaces
2403	GREEN	24 spaces
2404	AMBER	24 spaces
2409	AMBER	24 spaces
2410	AMBER	145 spaces
2411	AMBER	145 spaces
2414	GREEN	145 spaces
2415	AMBER	110 spaces
2416	RED	110 spaces

The ISR software determines the amount of the Enlisted UPH which is GREEN, AMBER, and RED. The software performs the following calculations:

Amount of Enlisted UPH GREEN = 24 spaces + 145 spaces = 169 spaces

Amount of Enlisted UPH AMBER = 24 spaces + 24 spaces + 24 spaces + 145 spaces + 145 spaces + 110 spaces = 472 spaces

Amount of Enlisted UPH RED = 110 spaces

Total amount of Enlisted UPH inspected = 169 spaces + 472 spaces + 110 spaces = 751 spaces

The AMBER and RED Renovation Factors are applied at this time to determine the cost to upgrade the AMBER and RED facilities to a GREEN condition. The ISR software determines the Renovation cost using the following general equation for both AMBER and RED conditions:

Renovation Cost = Amount of Facility x Renovation Factor x New Construction Cost Factor For Renovation

The cost to upgrade the amount of AMBER Enlisted UPH is calculated as:

AMBER Renovation Cost = 472 spaces x 0.2843 x \$25,048 per space = \$3,242,945.50

The cost to upgrade the amount of RED Enlisted UPH is calculated as:

RED Renovation Cost = 110 spaces x 0.4128 x \$25,048 per space = \$1,137,379.50

The total renovation cost is calculated as:

Total Renovation Cost = AMBER Renovation Cost + RED Renovation Cost  
= \$3,242,945.50 + \$1,137,379.50 = \$4,380,325.00

Sustainment Cost Factor. This cost factor is expressed as dollars per unit of measure and is used to derive the annual sustainment cost for each FCG on an installation. Cost factors are provided for permanent facilities and non-permanent (i.e., semi-permanent temporary) facilities.

The sustainment cost factors for FCG 72100 (Enlisted UPH) are:

Permanent Sustainment Cost Factor = \$368 per space

Non-Permanent Sustainment Cost Factor = \$368 per space

NOTE: Although the sustainment cost factors for Enlisted UPH in the above example are equal, this is not always the case. Permanent and non-permanent sustainment costs are calculated separately to account for the differences.

The example provided above for the New Construction Cost Factor showed that the Permanent Assets for FCG 72100 accounted for 751 spaces and the Temporary Assets amounted to 50 spaces. The ISR software uses this size data and the two sustainment cost factors listed above to calculate the sustainment cost for FCG 72100 as follows:

Sustainment Cost = (Amount of Permanent Assets x Permanent Sustainment Cost Factor) +  
( Amount of Temporary Assets x Non-Permanent Sustainment Cost Factor)

Sustainment Cost = (751 spaces x \$368 per space) + (50 spaces x \$368 per space) = \$294,768

The methods described above calculate the costs for a single FCG. To determine the costs associated with a sub-category, the costs of all the FCGs that comprise the sub-category are added together.

## Appendix K

### ISR Software Program

L-1. The ISR Software Program is designed to run in a stand-alone mode of a PC with the following minimum and desirable features:

	Minimum System	Preferred
Computer	IBM compatible XT (8086 or 8088)	IBM compatible 386-SX (20 MHz)
Memory	512 K of RAM	1 MB of RAM
Monitor	Monochrome	Color (EGA or VGA)
Floppy Disk Drive	5 1/4", 360K	3 1/2", 1.44 MB or 5 1/4", 1.2 MB
Hard Drive	2 MB	5 MB
MS DOS	3.1	5.0
Mouse	N/A	N/A
MS Windows	N/A	N/A
Keyboard	Any	101 keyboard
Printer	9 pin, DOT Matrix	Laser printer

L-2. The ISR Software Program has three major components; data entry, data analysis, and reporting.

a. The data entry feature will be the mechanism to introduce the Quality Inspection Ratings for each facility into the ISR Program. It will also be the mechanism to enter the Ratings for those special Sub-Categories (Information Management, Railhead Facilities, Port Rail & Truck Operations Areas, and Port Terminal Intermodal Facilities) which are not in the installation's Real Property Inventory. Lastly, it will be the mechanism for the commander to enter any appropriate changes to the area C-levels.

b. The data analysis component of the ISR Software Program will perform the many calculations detailed in Appendices E through J.

c. The reporting component of the ISR Software Program will take the results of the analysis and display the resulting data in seven reports. These reports include:

(1) Summary Installation Status Report. This report will list the Category, Area, and Installation C-level ratings. The Category Ratings will be generated by the ISR Software Program from the subordinate FCG and Sub-Category C-levels for most Categories. For the special sub-categories listed above, the C-levels will be manually calculated and directly entered into the program through the Commander's Over Write selection on the program's main menu. The Area C-levels will initially be the calculated values. They can be changed by the installation commander through the same Commander's Over Write selection on the main program menu. The installation C-level will be calculated from the Area ratings.

(2) Area/Category Report. This report will list the Sub-Category, Category, and Area C-levels. The Sub-Category C-levels will be calculated from the Quality Inspection results and the Quantity C-levels derived from installation RPI data and RPLANS requirement algorithms. For certain Sub-Categories, the C-levels will be manually calculated and directly entered into the program through the Commander's Over Write selection on the program's main menu. The Category and Area C-levels will be calculated from the Sub-Category C-levels.

(3) Facilities on Hand/Requirements Report. By Facility Category Group (FCG) this report will list the Permanent Assets reported by the installation in their RPI database, the RPLANS calculated requirement, and the percent requirement satisfied by permanent facilities. Total assets (permanent and non-permanent) and % requirement satisfied are displayed, although C-rating calculations do not include non-permanent facilities.

(4) Renovation/New Construction Cost Report. By FCG this report will list two classes of costs; quality improvements and quantity improvements. The quality improvement section will display the quality C-level and the costs to improve the quality from its current level to C-1, C-2 and C-3. The quantity improvement section will display the quantity C-level and the costs to improve the quantity from its current level to C-1, C-2, and C-3. The quality C-level will be calculated from the individual inspection ratings entered into the software. The quantity C-level will be calculated from the permanent assets contained in the installation's RPI. The cost values will be calculated from unit cost factors contained in the software and the assets which need to be improved.

(5) Sustainment Cost Report. By FCG this report will list two classes of costs; cost to sustain permanent and other-than-permanent facilities. Each section will list the appropriate assets reported in the installation RPI, the sustainment cost factor, and the sustainment cost. By FCG it will also list the total sustainment costs. The cost values will be calculated from unit cost factors contained in the software and the assets which need to be sustained.

(6) Facility Quality Condition Report. This report will list the facilities inspected. For each facility the report will list the FCG, FCG description, facility number, size/capacity, unit of measure, quality rating, and dollars to improve the quality to GREEN, and UIC of the reporting unit. The quality rating will come from the individual facility inspections. The assets data will be taken from the installation's RPI. The cost values will be calculated from unit cost factors contained in the software and the size of the asset inspected.

(7) Facilities Not Yet Surveyed Report. This report will list the installation number, facility number, FCG, and size of facilities which have not yet had a quality inspection rating entered into the software. It will start with a complete listing of the facilities to be inspected in the ISR program. As quality inspection data is entered into the program, the facility will be removed from the list.

(8) Unit Facility Quality Condition Report. This report lists all the UICs which have assigned facilities and provides the Quality Color Ratings of facilities grouped by UIC.

(9) Excess Report. This report lists the excess amount of both permanent and non-permanent facilities in each FCG by unit of measure.

(10) Installations can export ISR data and create other reports to assist in analyzing ISR data, as desired. Reports can be locally created to assist the real property manager in updating installation databases.

## Appendix L

### Installation Commander's Feedback Survey

The goal of these surveys is to gather feedback on the utility of the ISR from users in the field. The surveys are designed to evaluate how robust the current ISR is in meeting its design objectives discussed in paragraph 1-1 of the test instructions. Your assessment and comments are important in refining the ISR to be an effective, useful decision support system for infrastructure management at all levels of the Army. Results from these surveys will be consolidated and briefed to the senior Army leadership after the field test.

Please answer the following questions by circling the appropriate number. Each question has space for narrative comments, if needed.

1. a. The ISR is a useful tool for assessing the condition of my installation.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

- b. If you answered with 1. or 2. above, give ideas to make the ISR a more effective tool for assessing conditions.

2. a. The Areas included on the ISR (Mission facilities, Strategic Mobility facilities, Housing, Community facilities, Utility Systems, Army Reserve facilities, National Guard facilities) adequately cover major types of infrastructure on installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

- b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following areas should be added:

2) The following areas should be eliminated:

3. a. The facility standards are suitable for a broad, non-technical assessment of infrastructure on most Army installations.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. to the last question, identify the Area(s) in which the facility standards need the most refinement.

4. a. The Commander's cover memorandum to the ISR is an appropriate means to indicate the relative importance of infrastructure Areas to the installation's missions.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. to the last question, provide comments on improving the means to indicate your infrastructure priorities to support installation missions.

5. a. Overall the ISR is an effective means for describing the needed improvements to the infrastructure at this installation.



1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. to the last question, give any ideas for changes which could make the ISR more effective in describing installation needs:

6. a. The ISR effectively estimates resource requirements to correct infrastructure shortcomings.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. The IRS capability to estimate resource requirements at installation level could be improved by doing the following:

7. a. The ISR assists in prioritizing projects and/or programs at installation level:

1	2	3	4	5	6
---	---	---	---	---	---

Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

b. If you answered 1. or 2. to this question, please describe how the ISR could effectively assist in prioritizing projects.

8. a. The ISR assists in allocating resources at installation level:

1	2	3	4	5
Strongly	disagree	no	agree	strongly
disagree		opinion		agree

b. The use of the ISR to assist in allocating resources could be improved by:

9. a. Assuming satisfactory facility standards and algorithms (for combining quantity and quality) for each Area, a C-rating system of C1 through C5 is sufficient to describe (in simple terms) infrastructure conditions at installations.

1	2	3	4	5
---	---	---	---	---

Strongly	disagree	no	agree	strongly
disagree		opinion		agree

b. If you answered 1. or 2. to this question, please provide a description of an expanded, or shortened, scale to describe infrastructure conditions.

10. Please provide comments on how you will use ISR data in installation management.

11. Consider how much time elapses before infrastructure conditions change significantly on your installation. Given the rate of significant change of infrastructure conditions at your installation, how often should the ISR be submitted so that MACOMs and HQDA are aware of current installation conditions? (Every six months? Annually? Every other year? Other?)

## Appendix M

### Installation ISR POC's Feedback Survey

The goal of these surveys is to gather feedback on the utility of the ISR from users in the field. The surveys are designed to evaluate how robust the current ISR is in meeting its design objectives discussed in paragraph 1-1 of the test instructions. This survey asks for more detailed feedback on specific aspects of some of the ISR system components. Your assessment and comments are important in refining the ISR to be an effective, useful decision support system for infrastructure management at all levels of the Army. Results from these surveys will be consolidated and briefed to the senior Army leadership after the field test.

Please answer the following questions by circling the appropriate number. Each question has space for narrative comments, if needed. Some questions are directed only to the original 11 test installations. These questions assess whether the system improvements made since the first test are valid.

The following 6 questions evaluate the classification of infrastructure by the ISR.

1. a. The areas included on the ISR (Mission facilities, Strategic Mobility Facilities, Housing, Community facilities, Utility Systems, Army Reserve facilities, National Guard facilities) adequately cover major types of infrastructure on installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following areas should be added:

2) The following areas should be eliminated:

2. a. The categories under *Mission Facilities* (Training ranges & Areas, Maintenance and Production facilities, Classrooms, Research and Development, Supply & Storage facilities, Conventional Ammunition facilities, Administrative facilities, Information Management) are sufficient to describe the infrastructure in this area at this installation.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

3. a. The categories under *Strategic Mobility Facilities* (Road & Trail network, Railroad, Airfield, Ports) are sufficient to describe the infrastructure in this area at this installation.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

4. a. The categories under *Housing* (Family Housing, Unaccompanied Personnel Housing, Dining facilities) are sufficient to describe the infrastructure in this area at this installation.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

5. a. The categories under *Community Facilities* ( Post Exchange, Commissary, Hospital & Medical facilities, Child Development Centers, Community Support) are sufficient to describe the infrastructure in this area at this installation.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

6. a. The categories under *Utility Systems* ( Heat/AC, Electric/Gas, Water, Sewer) are sufficient to describe the infrastructure in this area at this installation.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

The following questions assess the facility standards in each of the categories. A major concern from the first test was that the facility standards did not evaluate the functional aspects of the facilities. The standards have been refined to address facility "functionality". For each of the categories below, apply the following statement to the standards for that category:

**"The standards provide a valid, yet simple assessment of overall facility conditions."**

#### 7. Training Ranges and Areas

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

a. Explanation of 1. or 2 answers:

#### 8. Maintenance and Production Facilities

1	2	3	4	5	6
---	---	---	---	---	---

Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2 answers:

#### 9. Classrooms

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2 answers:

#### 10. Research and Development

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2 answers:

#### 11. Supply & Storage Facilities

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 12. Conventional Ammunition Facilities

1	2	3	4	5	6
---	---	---	---	---	---



Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

### 13. Administrative Facilities

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

### 14. Information Management

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

### 15. Road and Trail Network

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

### 16. Railroad

1	2	3	4	5	6
---	---	---	---	---	---

 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable
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a. Explanation of 1. or 2:

#### 17. Airfield

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 18. Ports

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 19. Family Housing

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 20. Unaccompanied Personnel Housing

1	2	3	4	5	6
---	---	---	---	---	---

Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 21. Dining Facilities

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 22. Post Exchange

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 23. Commissary

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 24. Hospital and Medical Facilities

1	2	3	4	5	6
---	---	---	---	---	---

Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

## 25. Child Development Centers

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

## 26. Community Support

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

## 27. Heat/AC

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

## 28. Electric/Gas

1	2	3	4	5	6
---	---	---	---	---	---

Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 29. Water

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

#### 30. Sewer

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2:

31. In general, standards booklets were effective tools for describing conditions.

1	2	3	4	5
Strongly	disagree	no	agree	strongly
disagree		opinion		agree

32. List the categories in which the standards **do not** adequately address the functional aspects of a facility. Functional aspects means assessing how well the facility meets the needs for which it is being used. For any of the

categories you list, please provide marked up copies of that standards booklet and inspection worksheet with specific suggestions for improvement.

**The remaining questions evaluate other aspects of the ISR system.**

33. a. Assuming satisfactory facility standards and algorithms (for combining quantity and quality) for each Area, a C-rating system of C1 through C5 is sufficient to describe (in simple terms) infrastructure conditions at installations.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. to this question, please provide a description of an expanded, or shortened, scale to describe infrastructure conditions.

34. a. The algorithms for combining quantity, quality and other factors into C-ratings are appropriate.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. in a. above, describe any ideas you have for obtaining a better overall assessment of problem areas.

35. (To be answered only by the original 11 test installations)

The new C-rating algorithms provide a more accurate picture of infrastructure conditions on the installation.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

36. The quality descriptions of green, amber, red are appropriate.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

37. Worksheets for recording facility quality ratings of green, amber, red were helpful and relatively easy to use:

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

38. The ISR software package was easy to install and use throughout reporting channels:

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

39. The ISR software is user-friendly.

1	2	3	4	5	6
 Strongly	 disagree	 no	 agree	 strongly	 not

disagree		opinion		agree	applicable
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40. The facility requirements and assets data edit process is needed for the ISR to accurately portray infrastructure conditions on installations.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

41. The ISR cost reports software is user friendly.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

42. The ISR cost reports provide a reasonable estimate of the resources required to improve infrastructure conditions on the installation.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

43. The ISR cost reports provide a good means for the Commander to represent the installation's priority infrastructure areas for resources.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

44. The installation would feel confident if the ISR cost reports were used in higher echelon resource decision processes.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

45. Provide comments below for improving the current ISR software package:



46. Provide comments below for improving the current ISR cost reports (for example, in terms of what is reported, level of detail, complexity, time frame, etc.):

47. a. Use of the ISR at installation, MACOM, and HQDA level could eliminate the need for other current reporting systems (installation level and higher)

1	2	3	4	5	6

Strongly  
disagree

disagree

no  
opinion

agree

strongly  
agree

not  
applicable

b. If you answered 4. or 5. in a. above, please indicate what current reports provide the information being captured on the ISR:

48. Please provide some comments on how you will use ISR data in installation management.

49. Please estimate the number of man-hours required to prepare the ISR. Include training time, planning time, supervision and quality control of inspection process, data entry, report preparation and staffing.

## Appendix N

### MACOM Chief of Staff Feedback Survey

The goal of these surveys is to gather feedback on the utility of the ISR from users in the field. The surveys are designed to evaluate how robust the current ISR is in meeting its design objectives discussed in paragraph 1-1 of the test instructions. Your assessment and comments are important in refining the ISR to be an effective, useful decision support system for infrastructure management at all levels of the Army. Results from these surveys will be consolidated and briefed to the senior Army leadership after the field test.

Please answer the following questions by circling the appropriate number. Each question has space for narrative comments, if needed.

1.a. The ISR can be a useful tool for assessing and reporting the current status of installation conditions to MACOMs and HQDA.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, give your ideas for making the ISR a more effective report of the current status of installation conditions.

2.a. The areas included on the ISR (Mission facilities, Strategic Mobility Facilities, Housing, Community facilities, Utility Systems, Army Reserve facilities, National Guard facilities) are sufficient to describe the infrastructure at installations Army-wide.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following areas should be added:

2) The following areas should be eliminated:

3. Over time the ISR can be an effective means for representing Army-wide trends of installation conditions.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

4. a. The Installation Commander's cover memorandum to the ISR is an appropriate means for Commanders to convey to MACOMs the infrastructure priorities for their installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered 1. or 2. to the last question, provide comments on improving the means to represent installation Commanders infrastructure priorities to higher headquarters.

5. a. Overall the ISR is an effective means for describing the needed infrastructure improvements for the MACOM's installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered 1. or 2. to the last question, give any ideas for changes which could make the ISR more effective in describing installation needs:

6. a. The ISR effectively estimates resource requirements to correct infrastructure shortcomings.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. The IRS's capability to estimate resource requirements at installation level could be improved by doing the following:

7. a. The ISR can assist in prioritizing infrastructure projects and/or programs across the MACOM:

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

b. If you answered 1. or 2. to this question, please describe how the ISR could effectively assist in prioritizing projects.

8. a. The ISR can assist in allocating limited resources for infrastructure improvements across the MACOM's installations:

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. The use of the ISR to assist in allocating resources could be improved by:

9. a. Assuming satisfactory facility standards and algorithms (for combining quantity and quality) for each Area, a C-rating system of C1 through C5 is sufficient to describe (in simple terms) infrastructure conditions at installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered 1. or 2. to this question, please provide a description of an expanded, or shortened, scale to describe infrastructure conditions.

10. The ISR provides useful information at MACOM and HQDA levels to assist in determining needed changes to policy or in identifying needs for new policies.

1	2	3	4	5
---	---	---	---	---

Strongly	disagree	no	agree	strongly
disagree		opinion		agree

11. a. Use of the ISR at installation, MACOM, and HQDA level could eliminate the need for other current reporting systems (installation level and higher)

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

b. If you answered 4. or 5. to this question, please indicate what current reports you use provide the information being captured on the ISR:

12. a. The planned assessment/reporting periods (Apr-June, Oct-Dec) for the ISR will provide timely, useful input to the budget planning process at MACOM and HQDA level.

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

b. If you answered 1. or 2. to this question, provide a suggested ISR submission schedule:

13. Please provide comments on how you intend to use the data from the ISR in installation management at the MACOM level.



## Appendix O

### MACOM ISR POC's Feedback Survey

The goal of these surveys is to gather feedback on the utility of the ISR from users in the field. The surveys are designed to evaluate how robust the current ISR is in meeting its design objectives discussed in paragraph 1-1 of the test instructions. This survey asks for more detailed feedback on specific aspects of some of the ISR system components. Your assessment and comments are important in refining the ISR to be an effective, useful decision support system for infrastructure management at all levels of the Army. Results from these surveys will be consolidated and briefed to the senior Army leadership after the field test.

Please answer the following questions by circling the appropriate number. Each question has space for narrative comments, if needed.

The following 6 questions evaluate the classification of infrastructure by the ISR.

1. a. The areas included on the ISR (Mission facilities, Strategic Mobility Facilities, Housing, Community facilities, Utility Systems, Army Reserve facilities, National Guard facilities) adequately cover major types of infrastructure on installations.

1	2	3	4	5
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following areas should be added:

2) The following areas should be eliminated:

2. a. The categories under *Mission Facilities* (Training ranges & Areas, Maintenance and Production facilities, Classrooms, Research and Development, Supply & Storage facilities, Conventional Ammunition facilities, Administrative facilities, Information Management) are sufficient to describe the infrastructure in this area at installations.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

3. a. The categories under *Strategic Mobility Facilities* (Road & Trail network, Railroad, Airfield, Ports) are sufficient to describe the infrastructure in this area at installations.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

4. a. The categories under *Housing* (Family Housing, Unaccompanied Personnel Housing, Dining facilities) are sufficient to describe the infrastructure in this area at installations.

1	2	3	4	5
1	1	1	1	1
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

5. a. The categories under *Community Facilities* ( Post Exchange, Commissary, Hospital & Medical facilities, Child Development Centers, Community Support) are sufficient to describe the infrastructure in this area at installations.

1	2	3	4	5
1	1	1	1	1
Strongly disagree	disagree	no opinion	agree	strongly agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

6. a. The categories under *Utility Systems* ( Heat/AC, Electric/Gas, Water, Sewer) are sufficient to describe the infrastructure in this area at installations.

1	2	3	4	5
---	---	---	---	---

Strongly	disagree	no	agree	strongly
disagree		opinion		agree

b. If you answered with 1. or 2. above, complete the following: (otherwise, skip this question)

1) The following categories should be added:

2) The following categories should be eliminated:

The following questions assess the facility standards in each of the categories. A major concern from the first test was that the facility standards did not evaluate the functional aspects of the facilities. The standards have been refined to address facility "functionality". For each of the categories below, apply the following statement to the standards for that category:

**"The standards provide a valid, yet simple assessment of overall facility conditions."**

#### 7. Training Ranges and Areas

1	2	3	4	5	6
Strongly	disagree	no	agree	strongly	not
disagree		opinion		agree	applicable

a. Explanation of 1. or 2 answers:

#### 8. Maintenance and Production Facilities

1	2	3	4	5	6

Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
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a. Explanation of 1. or 2 answers:

#### 9. Classrooms

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2 answers:

#### 10. Research and Development

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2 answers:

#### 11. Supply & Storage Facilities

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 12. Conventional Ammunition Facilities

1	2	3	4	5	6

Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
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a. Explanation of 1. or 2:

### 13. Administrative Facilities

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

### 14. Information Management

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

### 15. Road and Trail Network

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

### 16. Railroad

1	2	3	4	5	6

Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
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a. Explanation of 1. or 2:

#### 17. Airfield

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 18. Ports

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 19. Family Housing

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 20. Unaccompanied Personnel Housing

1	2	3	4	5	6

Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
----------------------	----------	---------------	-------	-------------------	-------------------

a. Explanation of 1. or 2:

#### 21. Dining Facilities

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 22. Post Exchange

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 23. Commissary

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 24. Hospital and Medical Facilities

1	2	3	4	5	6



Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
-------------------	----------	------------	-------	----------------	----------------

a. Explanation of 1. or 2:

#### 25. Child Development Centers

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

a. Explanation of 1. or 2:

#### 26. Community Support

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

a. Explanation of 1. or 2:

#### 27. Heat/AC

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

a. Explanation of 1. or 2:

#### 28. Electric/Gas

1	2	3	4	5	6

Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable
----------------------	----------	---------------	-------	-------------------	-------------------

a. Explanation of 1. or 2:

#### 29. Water

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 30. Sewer

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

a. Explanation of 1. or 2:

#### 31. In general, standards booklets were effective tools for describing conditions.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

32. List the categories in which the standards **do not** adequately address the functional aspects of a facility. Functional aspects means assessing how well the facility meets the needs for which it is being used. For any of the categories you list, please provide marked up copies of that standards booklet and inspection worksheet with specific suggestions for improvement.

**The remaining questions evaluate other aspects of the ISR system.**

33. a. Assuming satisfactory facility standards and algorithms (for combining quantity and quality) for each Area, a C-rating system of C1 through C5 is sufficient to describe (in simple terms) infrastructure conditions at installations.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. to this question, please provide a description of an expanded, or shortened, scale to describe infrastructure conditions.

34. a. The algorithms for combining quantity, quality and other factors into C-ratings are appropriate.

1	2	3	4	5
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree

b. If you answered 1. or 2. in a. above, describe any ideas you have for obtaining a better overall assessment of problem areas.

35. The ISR software package used for MACOM reports was easy to install and use:

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

36. The ISR costs reports provide a reasonable estimate of the resources required to improve infrastructure conditions on installations.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

37. The ISR cost reports provide a good means for installation's to represent their priority infrastructure areas for resources.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

38. The ISR cost report data is accurate enough to use in resource decision processes.

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

39. a. The MACOM level automated summary reports provide useful information for infrastructure related decision processes:

1	2	3	4	5	6
Strongly disagree	disagree	no opinion	agree	strongly agree	not applicable

b. Provide comments below for improving the format and/or usefulness of the MACOM automated summary reports:

40. a. Use of the ISR at installation, MACOM, and HQDA level could eliminate the need for other current reporting systems (installation level and higher)

1	2	3	4	5	6
 Strongly disagree	 disagree	 no opinion	 agree	 strongly agree	 not applicable

b. If you answered 4. or 5. in a. above, please indicate what current reports the MACOM uses that provides the information being captured on the ISR:

41. Please provide some comments on how the MACOM will use ISR data in managing its installations.



## **Glossary**

### **Section I**

#### **Abbreviations**

##### **AAFES**

Army Air Force Exchange Service

##### **ABN**

airborne

##### **AC**

air conditioning

##### **ACES**

Army Continuing Education Service

##### **AFH**

Army family housing

##### **AMC**

U.S. Army Materiel Command

##### **AMEDD**

Army Medical Department

##### **APC**

armored personnel carrier

##### **ARNG**

Army National Guard

##### **ASIP**

Army stationing and installation plan

##### **AT**

annual training

##### **AVIM**

aviation intermediate maintenance

##### **AVUM**

aviation unit maintenance

##### **BRAC**

base realignment and closure

##### **BY**

budget year

##### **CAR**

Chief, Army Reserves

##### **CNGB**

Chief, National Guard Bureau

##### **CONUS**

continental United States

##### **CY**

cubic yard

##### **DA**

Department of the Army

##### **DeCA**

Defense Commissary Activity

##### **DEH**

Directorate of Engineering and Housing

##### **DENTAC**

Dental Activity

##### **DOIM**

Directorate of Information Management

##### **DOL**

Directorate of Logistics

##### **DPCA**

Directorate of Personnel and Community Activities

##### **DPTM**

Directorate of Planning, Training and Mobilization

##### **DRM**

Directorate of Resource Management

##### **DR REAL**

desktop reference for real property management

##### **DS**

direct support

##### **EHSP**

environmental, health, safety, and preservation (historical)

##### **FCG**

##### **Facility Category Group**

##### **FORSCOM**

U.S. Army Forces Command

##### **FY**

fiscal year

##### **HQ**

headquarters

##### **HQDA**

Headquarters, Department of the Army

##### **HQIFS**

headquarters integrated facilities system

##### **HQRPLANS**

headquarters real property planning and analysis systems

##### **IFS-M**

integrated facilities system-mini/macro

##### **ISR**

Installation Status Report

##### **JANAP**

Joint Army-Navy-Air Force Publication

##### **MACOM**

major Army command

##### **MEDDAC**

Medical Activity

##### **MILCON**

military construction

##### **MOB**

mobilization

##### **MOUT**

Military Operations on Urbanized Terrain

##### **MUSARC**

**Major United States Army Reserve Command**

**NGB**

National Guard Bureau

**OCONUS**

outside continental United States

**OTSG**

Office of The Surgeon General

**POC**

Point of Contact

**POL**

petroleum, oils, and lubricants

**POM**

program objective memorandum

**RC**

Reserve Component

**RDT&E**

research, development, testing, and evaluation

**RPLANS**

real property planning and analysis system

**RPMA**

real property maintenance activities

**TADS**

total Army basing study

**TRADOC**

U.S. Army Training and Doctrine Command

**UIC**

unit identification code

**UPH**

unaccompanied personnel housing

**USAR**

U.S. Army Reserve



## **Section II**

### **Terms**

#### **Appropriation**

An authorization by an act of Congress to incur obligations for specified purposes and to make subsequent payments therefore out of the treasury of the United States. Appropriations are classified as being annual, multi-year, or continuing, depending on the period of time that is available for obligation purposes.

#### **Area**

The highest aggregation of facilities in the ISR. There are five primary infrastructure areas evaluated in the ISR - mission facilities, strategic mobility facilities, housing, community facilities and utility systems. Reserve and National Guard facilities also are treated as separate infrastructure areas. Area C-ratings result from the aggregation of FCG, sub-category and category C-ratings that comprise the Area.

#### **Budget Year**

Precedes the program year in which funds are made available for construction and follows the design year. The year in which the Army defends the Military Construction Program before OSD, OMB and the Congress, and the year final design is to be substantially completed. For example, in FY90, the budget year is FY91.

#### **Category**

This is the second highest level of facility aggregation. Several categories comprise a single infrastructure area. A Category C-rating is derived from the C-ratings of its subordinated sub-categories and FCGs.

#### **Construction**

The erection, installation, or assembly of a new facility. The addition, expansion, extension, alteration, conversion, or replacement of an existing facility. Installed equipment made part of a facility, related site preparation, excavation, filling, landscaping, or other land improvements.

#### **Conversion**

A change to the interior or exterior facility arrangements so that the facility may be used for a new purpose. This includes installed equipment made part of a the existing facility. Results in a change of the facility category code (CATCODE).

#### **Critical Item**

This designation means that these inspection items are most critical to performing the mission for which the facility is used. The condition of these items drives the overall facility quality color rating.

**Note that most building exteriors** are critical inspection items because they include the structural integrity and weather tightness of the building.

#### **Facility Allowances**

These are determined using the information and algorithms contained in IFS-M and RPLANS.

#### **Facility Category Group (FCG)**

This is the lowest level of infrastructure aggregation in the ISR. Several facilities comprise a single FCG. Both quality and quantity C-ratings are determined for each FCG.

#### **Facility Requirements**

These are the facility allowance values which have been adjusted to reflect local conditions / missions.

#### **Improvement**

Alteration, conversion, modernization, renewal, addition, expansion, or extension which is for the purpose of enhancing rather than repairing a facility or system associated with established facilities.

#### **Installation**

A fixed location together with its land, buildings, structures, utilities and improvements that is controlled and/or used by DOD elements.

#### **New Construction Costs**

The software calculates three of these costs based on one cost factor - cost to raise a quantity derived C-rating from its current level to C3, C2 or C1. The basic formula is:

$$\text{Cost per FCG unit of measure X Quantity required to raise the C-rating to the desired level X a geographical area adjustment factor}$$

#### **On hand facilities**

These are the facilities that are existing and being used on an installation.

#### **Parent Installation**

A parent installation is considered a self-sufficient organization that may have responsibility for managing and supporting several sub-installations. For example, Fort Sam Houston is the parent installation for Camp Bullis, a sub-installation. The parent installation is responsible for ISR reporting of all its sub-installations. Sub-installations to be evaluated for the purposes of this field test will be identified in the ISR software database provided to the parent installation.

#### **Part I - Infrastructure**

This part of the ISR provides an evaluation of the facilities and utility systems on an installation. This part assesses both the quality and quantity of infrastructure components and provides estimated costs to improve the installation's current infrastructure.

#### **Part II - Environment**

This part focuses on evaluating the current environmental conditions and management of environmental programs on an installation.

#### **Part III - Services**

This part of the ISR will focus on evaluating the quality, efficiency and availability of services provided on an installation. This portion of the ISR is still in the concept development phase.

#### **Planning, Programming, Budgeting and Execution System (PPBES)**

An integrated system that establishes, maintains, and revises the Five Year Defense Program and the DOD budget.

#### **Program Objective Memorandum (POM)**

A formal document submitted to OSD containing the Army proposals for resource allocation in consonance with program guidance. The POM describes all aspects of Army programs to increase the operational readiness of the Army. It highlights forces, manpower, and material acquisition and also addresses the equipment distribution and logistics support required to meet the strategy and objectives specified by the Secretary of Defense.

#### **Real Property Inventory (RPI)**

The reporting of real property assets that is required by Section 410 of Title IV, National Security Act of 1947, as amended (10 U.S.C. 2701). All services are required to develop qualitative and monetary records for annual reports to the President and to the Congress, for maintenance of facilities inventories for each service, for MILCON validation, and for response to stationing and master planning proposals.

#### **Real Property Planning and Analysis Systems (RPLANS)**

RPLANS is an automated, master planning tool that enables planners and programmers to calculate peacetime facility space allowances readily and efficiently, and compare space allowances to available real property assets for a wide range of facilities. The systems draw on a number of data bases and are designed to work with either IFS, IFS-M, or the desktop reference for real property management (DR REAL) as a source of real property data.

### Renovation

The restoration of a real property facility to such a condition that it may be effectively used for its designated purpose. Renovation may be overhaul, reprocessing, or replacement of deteriorated components parts or materials.

### Renovation Costs

There are three Renovation costs imbedded in the ISR software. These three costs are derived from two cost factors; the cost to raise a facility's condition rating from AMBER to GREEN and the cost to raise a facility's condition rating from RED to GREEN. Appendix E presents the algorithm which determines how the percentage of facilities rated either GREEN, AMBER or RED leads to a quality C-rating at the FCG level. The basic formula for these two cost factors are:

$$\frac{\text{New Construction cost per unit of FCG measure}}{1.1} \times \text{Quantity required to raise the minimum rating} \times \text{a geographical area adjustment factor}$$

(this backs out the infrastructure costs, such as demolition of old facility, added to the new const. cost factor)

### Sub-Category

This is the third highest level of facility aggregation. Several sub-categories comprise a single infrastructure category classification. A sub-category C-rating results from the quality and quantity C-ratings of its subordinate FCGs.

### Sub-Installation

A sub-installation is a fixed location, separate from its parent installation, that normally relies on the parent for management and support. A sub-installation is identified by its own installation number (INSNO). For example, Camp Bullis is a sub-installation to Fort Sam Houston. Sub-installations will be evaluated with the parent installation for ISR purposes. During this field test, sub-installations to be evaluated will be identified for each parent installation in the ISR software database provided to the parent installations.

### Sustainment Costs

The ISR software tracks two costs associated with sustainment; cost to sustain permanent facilities (construction type P in the real property database) and cost to sustain non-permanent facilities (construction types S and T in the real property database). The formula is:

$$\text{Quantity of permanent (or non-permanent) facilities for an FCG} \times \text{Cost factor (permanent or non-permanent) to sustain a unit of measure of that FCG}$$

### Unit identification code

A 6-character code assigned to a specific unit that can be used to identify that unit.

# INSTALLATION STATUS REPORT

## PART ONE - INFRASTRUCTURE

Installation:

As Of Date:

### Mission Facilities

Training Ranges & Areas

Maintenance & Production Facilities

Classrooms

Research & Development

Supply & Storage Facilities

Conventional Ammunition Facilities

Administrative Facilities

Information Management

### Strategic Mobility Facilities

Road & Trail Network

Railroad

Airfield

Ports

### Housing

Family Housing

Unaccompanied Personnel Housing

Dining Facilities

### Community Facilities

Post Exchange

Commissary

Hospital & Medical Facilities

Child Development Centers

Community Support

### Utility Systems

Heat/AC

Electric/Gas

Water

Sewer

### Army Reserve Facilities

### National Guard Facilities

Installation Commander's Signature:

## INSTALLATION STATUS REPORT

**PART ONE – INFRASTRUCTURE**

Installation:

As Of Date:

QUALITY ROLL-UP SHEET									
1	2	3	4	5	6	7	8	9	10

[illegible]

[illegible][illegible][illegible][illegible][illegible][illegible][illegible]

## **Appendix E - Decision Briefing to CSA**

This appendix contains a copy of the decision briefing given to the CSA on 8 July 94 after the expanded field test.

# Installation Status Report

A Decision Support System

Chief of Staff, Army  
Decision Briefing

8 July 1994



# **Purpose**

- To Brief the Expanded Field Test Results
- To Obtain Approval to Implement the Installation Status Report (ISR):
  - Part I Infrastructure
  - Part II Environment

# **Overview**

## **Background Needs Analysis Filling the Needs Part I Infrastructure**

**-Field Test Results**

**-Conclusions**

**-Recommendations**

## **Part II Environment**

**-Field Test Results**

**-Conclusions**

**-Recommendations**

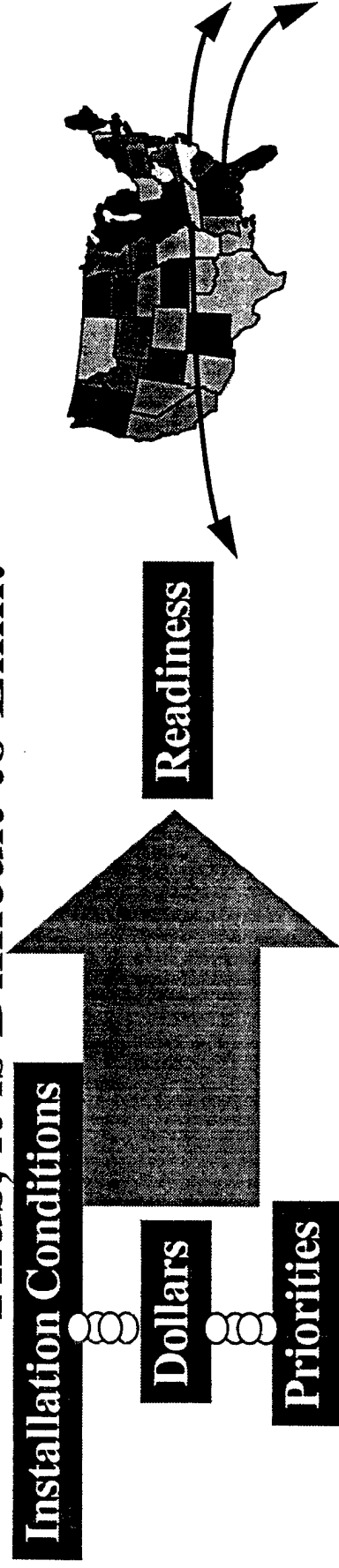
# **Background**

- **Develop in 3 Parts:**
  - **Infrastructure**
  - **Environment**
  - **Services**
- **Total Quality Team Effort:**
  - **Continuous Improvement**
  - **User Input**
  - **Field Tested and Refined Twice**
- **4 Nov 93 CSA Brief:**
  - **Approved Second Expanded Field Test**
  - **Guidance:**
    - **Brief OSD**
    - **Verify Value Added**
    - **Involve Installation Commanders at Decision Brief**

# Needs Analysis

- Current Situation:
  - Constrained Budgets
  - Installation Revitalization Needs
  - Downsizing, Restoration, BRAC
  - Stovepipe Management
  - No Consistent Method to Assess Installation Conditions and Estimate Resources

• Thus, it is Difficult to Link:



• *The Need:*

- Describe Conditions
- Estimate Dollars

# **Filling the Needs**

## **The ISR:**

- **Assesses Installation Conditions and Needs**
- **Articulates Army Needs and Trends**
- **Monitors Progress**

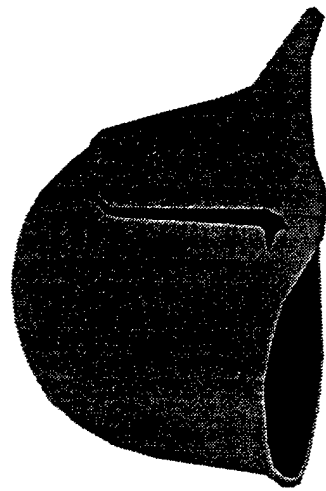
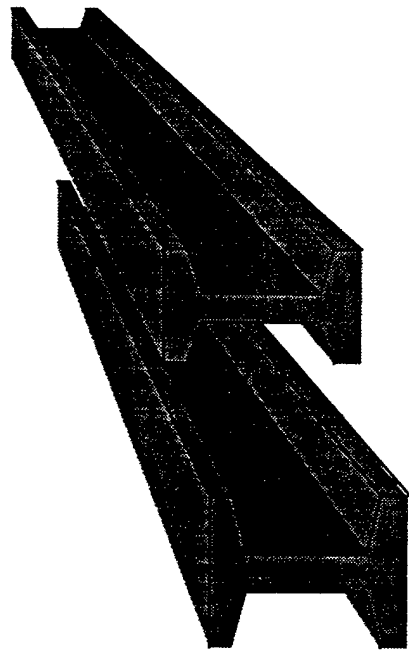
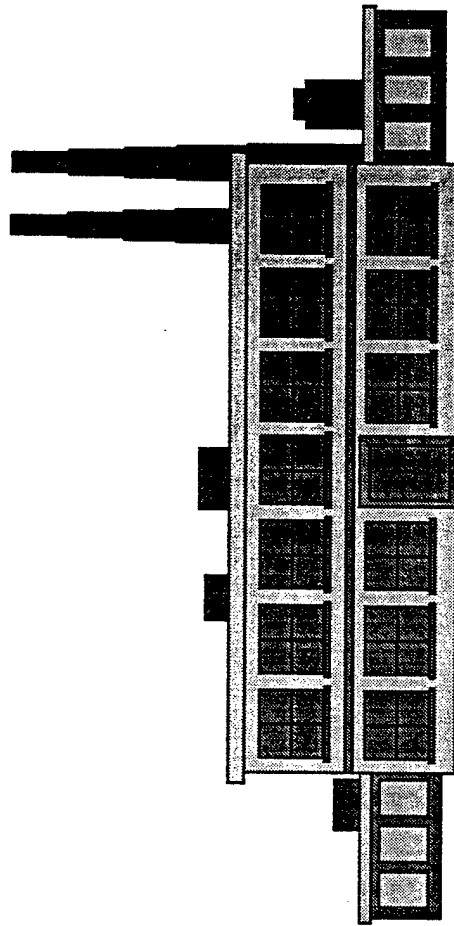
## **Also:**

**Justifies resources to OSD & Congress**

## **The ISR is Dynamic:**

- **An evolving, Total Army process**
- **A major change in installation management**

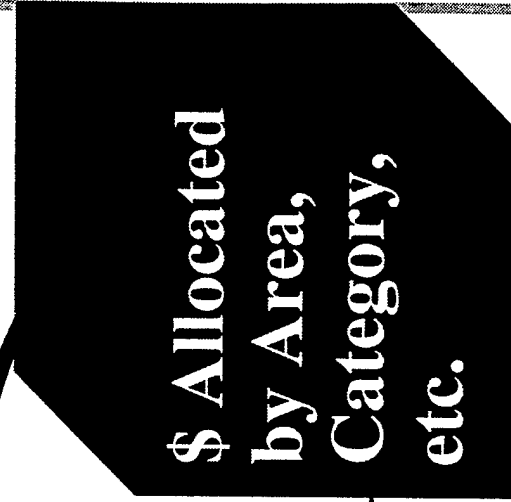
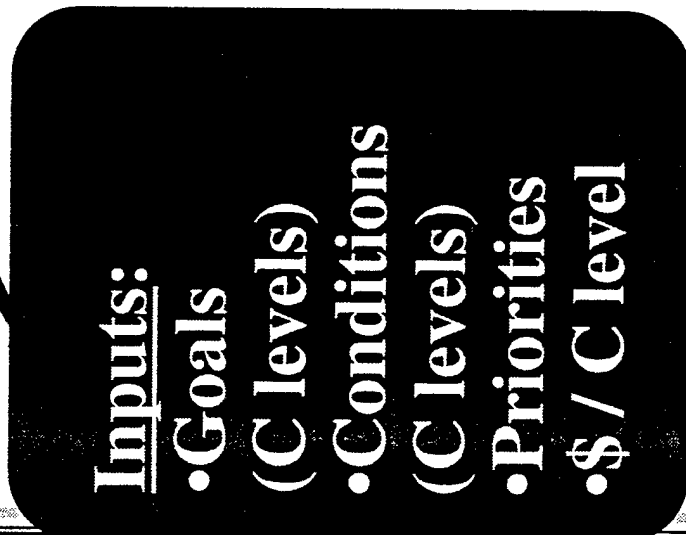
# ISR Part I - Infrastructure



# Optimize Constrained Resources

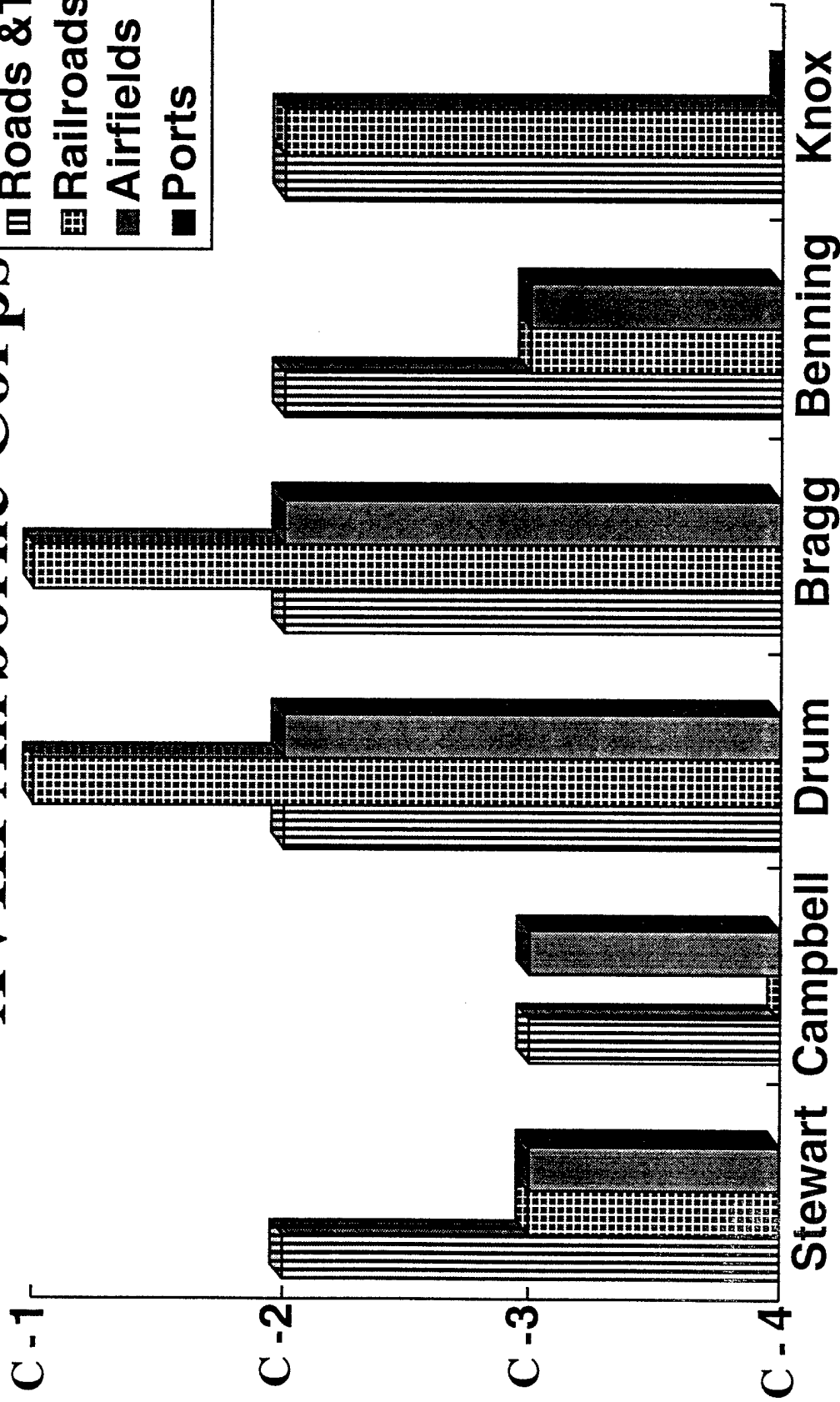
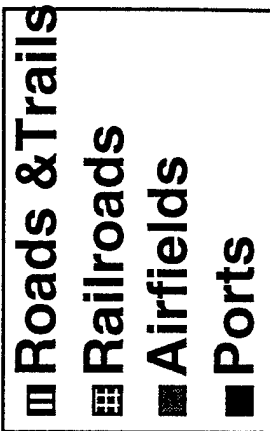
Translate

*Goals into Strategies*



## Part I Total Data

# Status of Strategic Mobility XVIII Airborne Corps

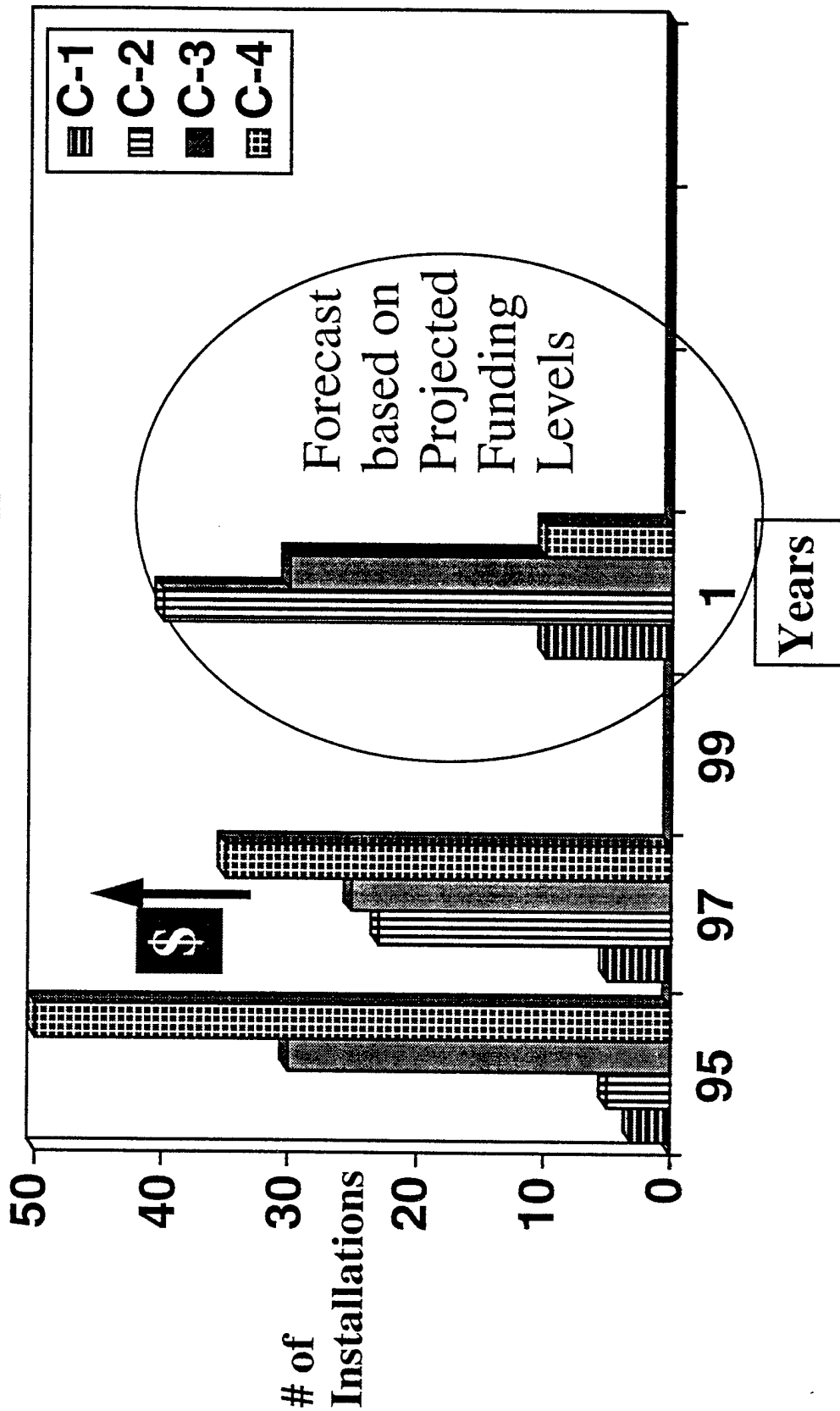


*Conditions Impact Readiness*



# Part I Historical Trends & Forecast (notional)

## Barracks



# Part I - Infrastructure ISR

## INSTALLATION STATUS REPORT

### PART ONE - INFRASTRUCTURE

Installation: Fort Harmon As Of Date: 1 April 93

<b>Mission Facilities</b>		C-2
Training Ranges & Areas	C-3	
Maintenance & Production Facilities	C-2	
Classrooms	C-1	
Research & Development	C-2	
Supply & Storage Facilities	C-2	
Conventional Ammunition Facilities	C-2	
Administrative Facilities	C-1	
Information Management	C-2	
<b>Strategic Mobility Facilities</b>		C-2
Road & Trail Network	C-2	
Railroad	C-3	
Airfield	C-1	
Ports	C-3	
<b>Housing</b>		C-2
Family Housing	C-3	
Unaccompanied Personnel Housing	C-1	
Dining Facilities	C-1	
<b>Community Facilities</b>		C-1
Post Exchange	C-1	
Commissary	C-1	
Hospital & Medical Facilities	C-1	
Child Development Centers	C-1	
Community Support	C-2	
<b>Utility Systems</b>		C-1
Heat/AC	C-1	
Electric/Gas	C-1	
Water	C-2	
Sewer	C-1	
<b>Army Reserve Facilities</b>		N/A
<b>National Guard Facilities</b>		N/A

Installation Commander's Signature: John Henry, MG, USA

# ISR Test Data Analysis

## Part I Ratings Reported

ISR AREA:	Mission Facilities	Strategic Mobility	Housing	Community Facilities	Utility Systems
<u>AMC</u>					
Anniston	C-2	C-2 ↓	C-1	C-3	C-2
Redstone	C-2	C-3* ↓	C-3	C-2	C-3
Rock Island	C-3	C-3	C-4	C-3	C-2
Aberdeen	C-3	C-4	C-4* ↓	C-3	C-3
Natick	C-2	C-1	C-3	C-2	C-2
<u>TRADOC</u>					
Ft Benning	C-3	C-3	C-3	C-3	C-3* ↓
Ft Gordon	C-3	C-2	C-2* ↑	C-3	C-2
Ft Knox	C-3	C-3	C-3	C-2	C-2
Ft Sill	C-3	C-3	C-3	C-2* ↑	C-2
Carlisle Bks	C-2	C-2	C-3	C-2	C-1
Ft Eustis	C-4	C-4* ↓	C-4	C-3	C-3
<u>MTMC</u> - Bayonne	C-2	C-2	C-3	C-3	C-2
<u>HSC</u> - Ft Detrick	C-2* ↑	C-2	C-2	C-2* ↑	C-1

\* Indicates C-Rating Overwrite

**FOR TEST PURPOSES ONLY**

# ISR Test Data Analysis

## Part I Ratings Reported

ISR AREA: Mission Strategic Mobility Housing Facilities Community Utility Systems

### MDW

Ft Ritchie  
Ft Belvoir

C-3 C-3\* C-3 C-3  
C-3 C-2 C-3 C-3

### FORSCOM

Ft Carson  
Ft Stewart  
Ft Riley  
Ft Campbell  
Ft Drum  
Ft Bragg  
Ft Hood  
Ft Lewis

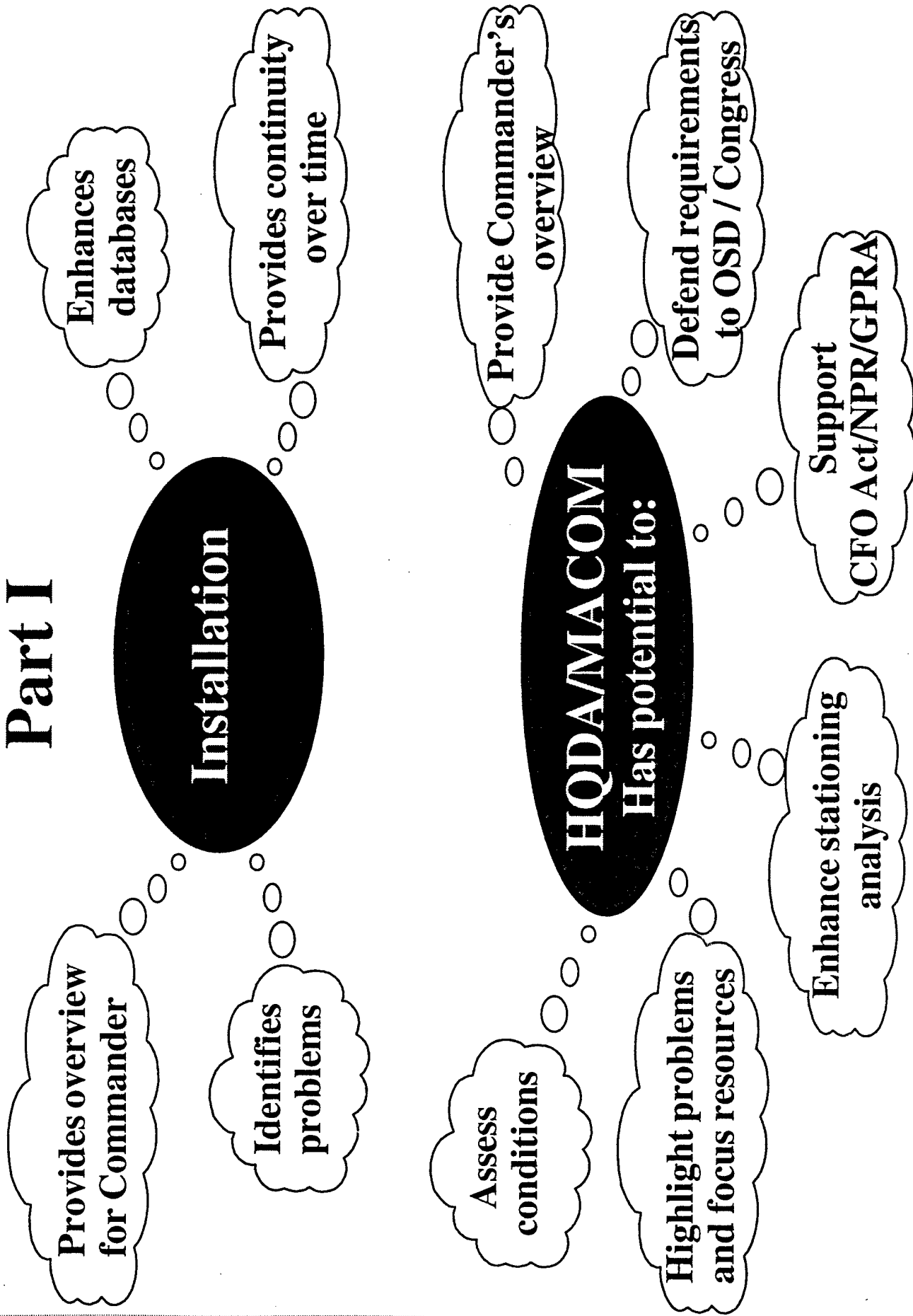
C-2 C-2 C-3\* C-3\*  
C-3 C-3 C-3 C-3  
C-2 C-2 C-3 C-2  
C-3 C-3 C-2 C-2  
C-2 C-2 C-2 C-1  
C-3 C-3 C-3 C-2  
C-3 C-3 C-3 C-2

\* Indicates C-Rating Overwrite

FOR TEST PURPOSES ONLY

# Potential Value Added

## Part I



# **Part I Issues**

## **Issue**

**•Workload**

## **Solution**

**Eliminate reports:**

- URR            - ICARPUS**
- BMAR        - DMAR**
- Triennial Inspection**

**DAS Tasker**

**Workload will diminish**

**•C-ratings**

**Weighting  
Quantity/Quality**

**•Standards/Data Bases**

**Training Ranges**

**Utility Systems**

**•Cost Estimates**

**Ongoing**

**Educate Users**

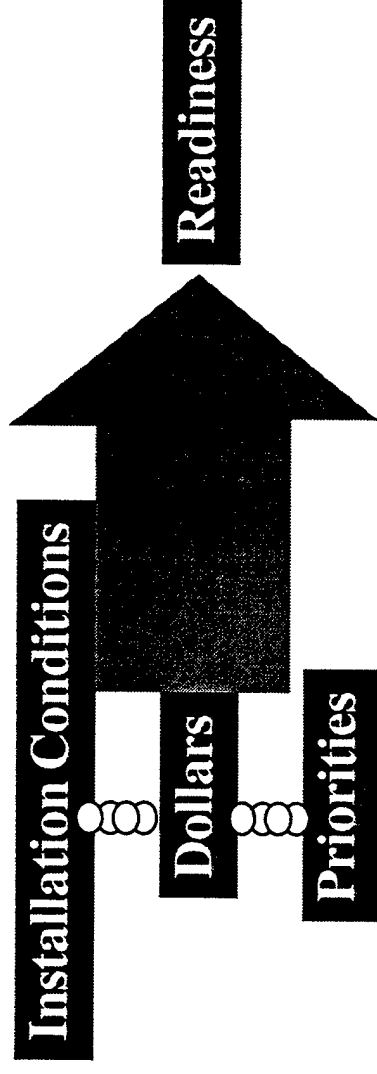
**Refine**

# Part I Conclusions

## *Installations, MACOMs, HQDA support the ISR*

### The Benefits of the ISR:

- Fills valid Army need to link:



- Adds value

- Dynamic Process

### The costs of the ISR:

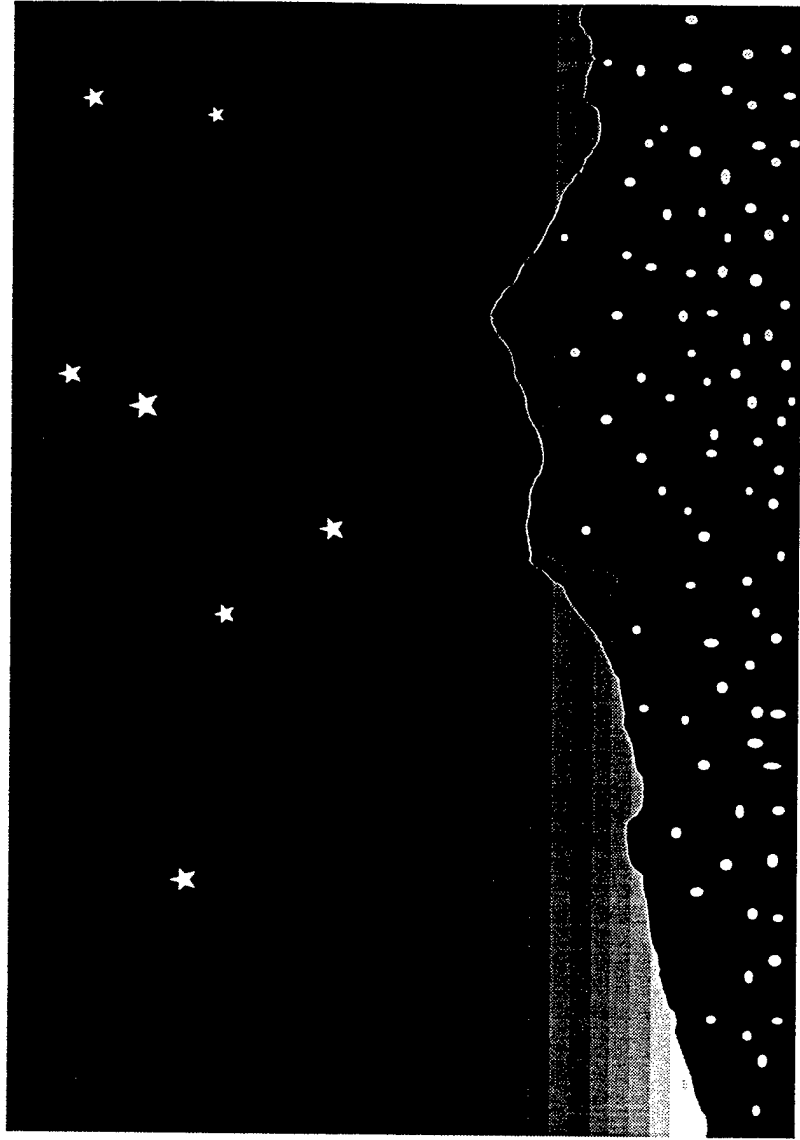
- Mitigated by the elimination of reports
- Minimal when compared to benefits

# **Part I Recommendations**

- **Approve CONUS implementation of the Installation Status Report, Part I**
- **Transfer implementation to the ACSIM**
- **After implementation, conduct formal periodic evaluations of usefulness**



# ISR Part II - Environment



# Part II - Environment

## INSTALLATION STATUS REPORT

### PART TWO ENVIRONMENT

Installation:

As Of Date:

Color Rating

C - Rating

#### Compliance

National Environmental Policy Act	Green
Air Quality Management	Green
Asbestos Management	Amber
Environmental Noise Abatement	Green
Drinking Water Management	Green
Waste Water Management	Green
Storm Water Management	Green
Solid Waste Management	Green
Hazardous Waste Management	Green
Polychlorinated bi-phenyls (PCB) Management	Amber
Lead Based Paint Management	Amber
Radon Reduction Program Management	Green
Underground Storage Tank Management	Green
Above Ground Tank Management	Green
Environmental Contingency Planning	Green

C - 1

#### Conservation

Wetlands Stewardship	Red
Threatened and Endangered Species Management	Red
Land Management	Green
Integrated Natural Resources Management Plan	Green
Cultural Resources Management	Red
Integrated Pest Management	Red

C - 4

#### Pollution Prevention

Solid Waste Reduction and Recycling	Green
Hazardous Material Management	Amber
Toxic Release and Hazardous Waste Reduction	Green
Energy Conservation	Green

C - 2

#### Restoration

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C - 3

# Part II Environment

## INSTALLATION STATUS REPORT

### PART II - ENVIRONMENT CONTINUATION SHEET

Installation: \_\_\_\_\_ As of Date: \_\_\_\_\_

Color Rating C - Rating

Environmental Program Management C-3

Program Resources	Red
Environmental Quality Control Committee	Amber
Environmental Compliance Assessments	Green
Regulatory Climate	Green
Compliance Funding	Amber
Conservation Funding	Green
Pollution Prevention Funding	Amber
Restoration Funding	Green

Installation Commander's Signature\*: \_\_\_\_\_

\* Commander's Comments are provided in an attached cover memorandum.

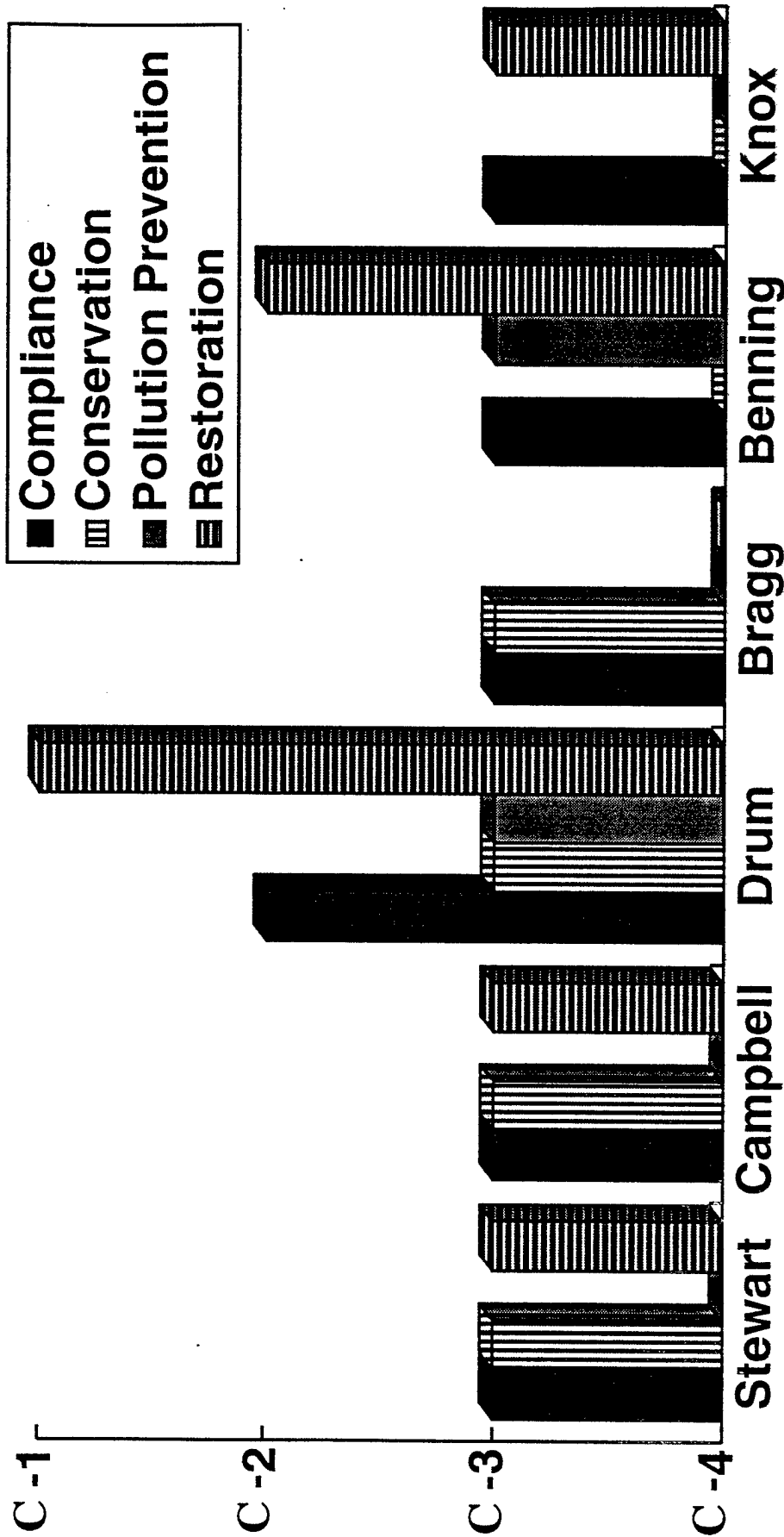
# Part II Environment

## Key Points:

- Puts the Army on a *Common Standard*
- Provides *Consistent Assessment* Aligned with Army Environmental Strategy Pillars:

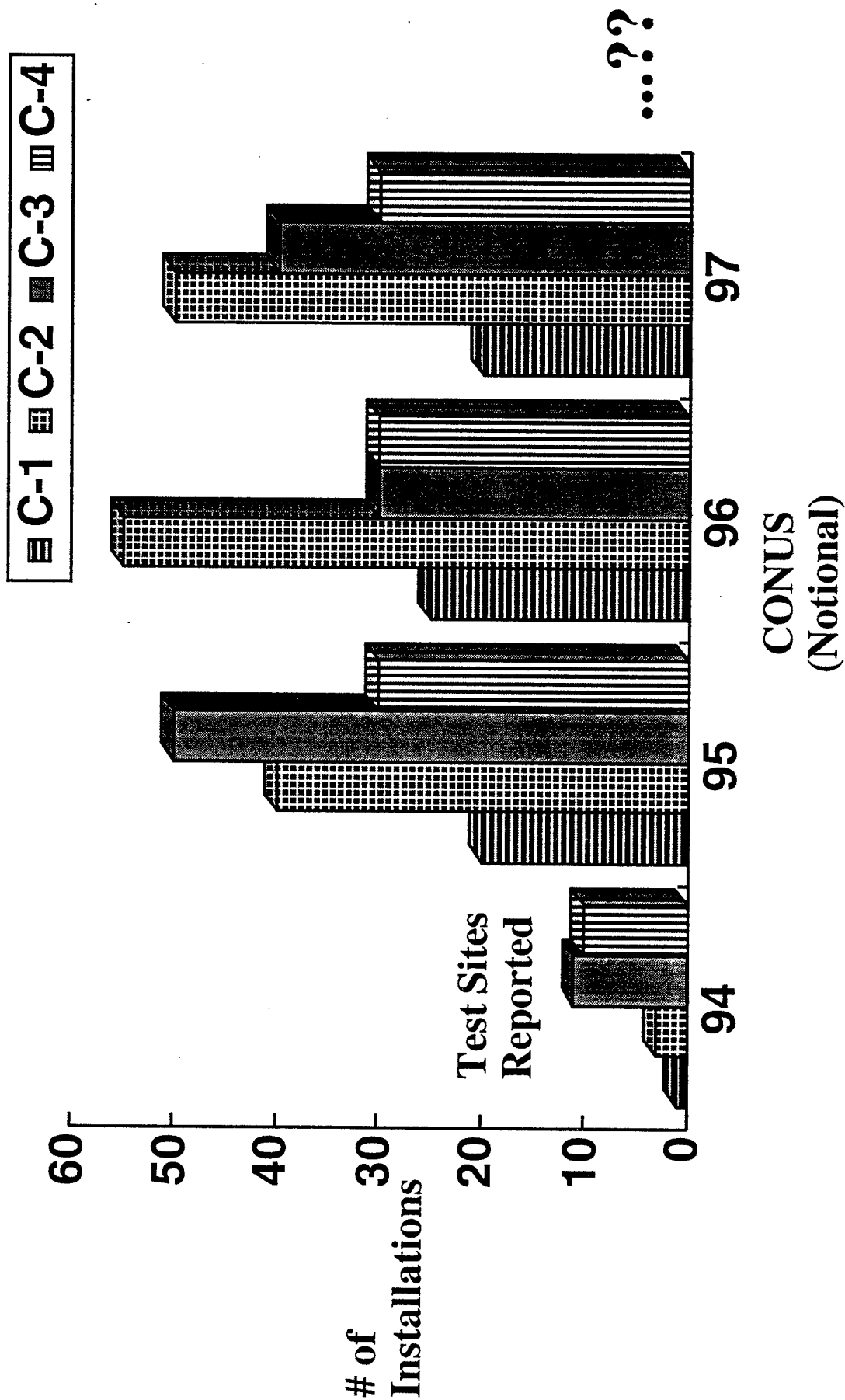
Compliance  
Pollution Prevention  
Restoration  
Conservation

# Environmental Status XVIII Airborne Corps Environmental Strategy Pillars



# Environmental Trends

## Pollution Prevention Pillar



# ISR Test Data Analysis

## Part II Ratings Reported

ISR Area:	<u>Compliance</u>	<u>Conservation</u>	<u>Pollution Prevention</u>	<u>Restoration</u>	<u>Program Management</u>
<u>AMC</u>					
Anniston	C-1	C-1	C-1	C-1	C-2
Redstone	C-3	C-3	C-3	C-1	C-3
Rock Island	C-2	C-3	C-3	C-1	C-3
Aberdeen	C-3	C-3	C-3	C-1	C-3
Natick	C-1	C-2	C-2	C-1	C-1
<u>TRADOC</u>					
Ft Benning	C-3	C-4	C-3	C-2	C-3
Ft Gordon	C-3	C-3	C-3	C-1	C-3
Ft Knox	C-3	C-4	C-4	C-3	C-3
Ft Sill	C-1	C-3	C-3	C-1	C-3
Carlisle Bks	C-3	C-1	C-4	C-1	C-1
Ft Eustis	C-3	C-3	C-3	C-1	C-3
<u>MTMC</u>					
Bayonne	C-1	C-1	C-2	C-1	C-3
<u>HSC</u>					
Ft Detrick	C-1	C-3	C-4	C-1	C-2

**FOR TEST PURPOSES ONLY**

# ISR Test Data Analysis

## Part II Ratings Reported

	Pollution			Program
	<u>ISR AREA</u>	<u>Compliance</u>	<u>Conservation</u>	<u>Restoration Management</u>
<u>MDW</u>				
Ft Ritchie	C-1	C-3	C-3	C-1
Ft Belvoir	C-2	C-3	C-4	C-3
<u>FORSCOM</u>				
Ft Carson	C-2	C-3	C-2	C-3
Ft Stewart	C-3	C-3	C-4	C-3
Ft Riley	C-3	C-4	C-4	C-3
Ft Campbell	C-3	C-3	C-4	C-4
Ft Drum	C-2	C-3	C-3	C-2
Ft Bragg	C-3	C-3	C-4	C-3
Ft Hood	C-3	C-3	C-3	C-3
Ft Lewis	C-3	C-3	C-3	C-3
<u>USARPAC</u>				
Ft Richardson	C-3	C-4	C-4	C-3
Schofield Bks.	C-4	C-4	C-4	C-3

**FOR TEST PURPOSES ONLY**



## **Part II Conclusions**

- **An integral part of Installation Management**
- **Provides consistent assessment based on *Army-wide Standards***
- **Adds Value -- Most useful at MACOMs & HQDA**
- **Mixed support at Installations**
- **Continue to refine and educate**

## **Part II Recommendations**

- **Approve CONUS implementation of the Installation Status Report, Part II**
- **Transfer implementation to the ACSIM**
- **After implementation, conduct formal periodic evaluations of usefulness**