

**STRATEGY
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**WATER PURIFICATION AT LAKE KIVU:
THE NEED FOR COOPERATION**

BY

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WATER PURIFICATION AT LAKE KIVU: THE NEED FOR COOPERATION

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ABSTRACT

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Throughout the world there is a rising need for humanitarian relief operations. Increasing fiscal constraints impact donor nations ability to provide multiple resources. Multilateral cooperation must be the norm. This paper examines one of the many missions executed by the US military during Operation Support Hope 1994. The paper analyzes the cooperative efforts of the US military and the international relief community and makes recommendations for future US participation in humanitarian relief operations.

INTRODUCTION

With the conclusion of the Cold War, a paradigm shift has occurred in global humanitarian relief efforts. During the Cold War era, efforts to address humanitarian emergencies were limited by the superpower competition. Today donors are less constrained in responding to a proliferation of complex emergencies which seem to be occurring simultaneously, all over the globe.¹ Currently more than 40 million people in over 30 countries have either ongoing humanitarian crises that are expected to persist or face strong prospects of such emergencies in 1996.² This proliferation of humanitarian emergencies will bring a call for a more proactive role for the United States and its military forces.

Although our national values commit us to alleviate pain and suffering, our financial straits compel us to seek multilateral cooperation in such efforts. The need to reduce our national debt, coupled with continued personnel reductions in the United States forces, curtails the resources available for foreign disaster relief. Because current demand exceeds these resources, future success in humanitarian relief missions will necessitate multilateral efforts among relief teams in the international community.

Donor governments and international relief agencies bring unique capabilities to the humanitarian effort. The US military infrastructure provides communication, logistics, and security.³ Its airlift, sealift, heavy equipment and transportation capabilities are suited to rapid delivery of supplies and services in a crisis. The international relief community brings a level of expertise and knowledge of the area, along with a sustained commitment. All of these resources are vital to determining the best and most rapid method of providing services. To succeed, a

humanitarian relief operation needs the support of a cooperative marriage of these forces. The pending requirements for future humanitarian relief missions will fail without such cooperation.

An analysis of Operation Support Hope in Rwanda serves to illustrate the importance of interagency cooperation and coordination. Operation Support Hope succeeded: It accomplished all major objectives quickly. Even so, it experienced many problems with coordination, resulting in delays and inappropriate use of resources. One such example was the water purification mission at Lake Kivu in Goma, Zaire.

This research paper analyzes the problems of interagency coordination during execution of the operations at Lake Kivu and recommends actions to improve the efficiency of future humanitarian missions. Section I gives the background for the operation. Section II discusses what actually transpired at Lake Kivu. Section III analyzes problems that led to inefficiencies either perceived or actual. The paper concludes with recommendations for future humanitarian missions.

The Crisis in Goma, Zaire: Stop the Dying

Rwanda and its surrounding neighbors have fought intermittently for over thirty years. Bitter conflict between two rival tribes, the Tutsi and Hutu has fueled this conflict. In 1990 the Tutsi military arm, the Rwanda Patriotic Front (RPF), invaded Rwanda from Uganda. Bitter fighting ensued for three years between the Hutu dominated government and RPF forces. In late 1993 a cease fire was reached, followed by an agreement to share power between the two factions.⁴ However, on April 6, 1994, Rwandan President Habyarimana and Burundi's President Ntaryamira were killed when their aircraft crashed in Kigali, Rwanda, under suspicious circumstances.⁵ Then the ceasefire agreement collapsed and further conflict engulfed the region.

Within hours of the plane crash government forces and armed militias launched a campaign of genocide against the Tutsi minority, moderate Hutus, and others who opposed the government. A fierce civil war ensued for control of the country between the government and RPF forces. Foreign diplomats, United Nation and US Government personnel, and NGO's were evacuated as the fighting escalated. More than 500.000 Rwandans were savagely slaughtered between April and July. The killings were so widespread that Lake Victoria became polluted with thousands of corpses.⁶

This violence culminated in a humanitarian crisis of epic proportions. Massive population movements began throughout Rwanda and the neighboring countries of Zaire, Tanzania, Uganda, and Burundi. More than 4.5 million displaced people needed emergency food, water, medical care, and shelter.⁷

In April the international community began to respond in earnest to the refugee crisis. US Ambassador David P. Rawson officially declared a disaster. The Bureau of Humanitarian Relief (BHR) and the Office of Foreign Disaster Relief (OFDA) released funds to the International Committee of the Red cross (ICRC) for purchase and distribution of food and non-food supplies, for food and medical assistance to displaced persons, for water and sanitation projects, and for airlift capacity for emergency commodities.⁸ In recognition of imminent refugee movement to Zaire, the United Nation High Commissioner for Refugees (UNHCR) identified a large refugee camp in Katala, 55 km north of Goma.⁹ OXFAM provided water pumping, distribution and storage sites at the Katala Camp. MSF Holland provided medical services and equipment and ICRC provided principally food stocks.¹⁰

The U.S. responded to heavy refugee movement into Tanzania in late April and early May, when President Clinton ordered an additional \$15 million dollars in aid and assistance in airlifting of relief supplies.¹¹ On May 6, BHR/OFDA dispatched a two-person team to assess the needs of the refugees and identify possible US aid. Based on the recommendations of the assessment team, a Disaster Assistance Response Team (DART) was sent to the region to coordinate and facilitate the US response to the crisis. Headquartered in Nairobi, Kenya, Kate Farnsworth, DART leader, assessed relief requirements, coordinated with the international relief community on humanitarian strategies, provided situation reports for Washington, and provided funding to UN agencies, Inter-governmental agencies (IO's) and NGO's for relief efforts to refugees.¹²

The RPF's victory over Government forces in July and the establishment of a new national government in Rwanda spawned one of the most massive population movements in history. From 14 July to 19 July, an estimated 1-2 million ethnic Hutus fled Rwanda and sought refuge in the North Kivu region of Zaire. The majority settled in refugee camps located in Magunga, Munigi, Kibumba, and Katale, in the Goma, Zaire region.¹³

The massive influx of refugees quickly overwhelmed the capacity of the international relief effort. The lack of sufficient amounts of food, water, and shelter posed the most immediate threat to the masses. Conditions deteriorated rapidly and the mortality rate climbed. Because potable water was not available throughout the refugee camps in the barren lava-filled terrain, thousands were dying daily from cholera, dysentery, and dehydration. It was estimated that one refugee died per minute during the height of the crisis; approximately 50,000 died in the first month of the exodus.¹⁴ The mass migration of refugees and subsequent cholera epidemic

received extraordinary media attention. Goma was deluged with over 500 journalists from all over the world; they transmitted live coverage of dying women and children to living rooms world-wide. The substantial coverage and the visual impact of such devastation and suffering contributed to a massive response by governments and public agencies around the world.¹⁵ Countries previously with no interests in Africa developed national interests to justify deployment of military forces.¹⁶

Responding to the mass exodus into Goma, President Clinton sent Brian Atwood, the Administrator of the United States Office of International Disaster (USAID) and Nan Borton, the Director of OFDA, to assess the situation. Following their assessment, a DART team was dispatched to Goma to prepare for US relief efforts.¹⁷ In response to Mr. Atwood's verification of the dire circumstances in Goma and an urgent plea from the UNHCR, President Clinton further ordered the Department of Defense (DOD) to deploy military forces in support of the relief efforts to "stop the dying". Operations were to focus on establishing a safe water supply, and expanding airlift operations to move food, medicine, and other supplies to the refugee camps as quickly as possible.

Given the presidential commitment, the National Security Council, through the Secretary of Defense, ordered EUCOM to conduct an assessment of the area in preparation for a US deployment to the RCA. A four man advanced assessment team led by COL Al Davis, USMC, conducted the initial assessment of the Goma area, established a communication link with the EUCOM staff, and prepared for the reception of the follow-on assessment team (FOAT). After linking with the FOAT, the team broke into functional cells to assess the requirements for the entire theater. Each functional area coordinated with the United Nations representatives from the

UNHCR, NGO's, and Department of State (DOS) representatives. Teams conducted rapid assessments of the Goma airport operations and drew up requirements for medical supply, potable water, procurement sources in Entebbe and infrastructure for JTF headquarters in Kigali.¹⁸

Based on the information supplied by the assessment team, EUCOM finalized the task organization and executed the mission for JTF Support Hope. The six-point mission required the JTF to provide assistance to relief agencies within the theater to alleviate suffering, to establish water production and distribution points, to establish an airhead and cargo capability, to manage logistics operations for relief agencies, to provide 24-hour airfield services, and to protect the force.¹⁹ To assist the JTF Commander in effectively coordinating with the myriad of relief agencies in theater, three Civil Military Operations Centers (CMOC) were established. The CMOC in Entebbe served as the theater transportation center. Kigali was the focal point for humanitarian support within Rwanda. Goma operations focused on water production and distribution.

With the cholera epidemic ravaging the refugee population, the water production efforts in Goma drew international attention.

Water Purification Mission

Prior to the start of the refugee emergency, only one agency had a substantial stock of water equipment in Goma. As part of the contingency planning in establishing the Katale Camp, OXFAM had prepositioned enough water supply equipment to meet the demand of a maximum of 50,000 refugees.²⁰ A small amount of water supply equipment was supplied by MSF

(Netherlands), by French forces in the area, and by UNICEF. But as the flood of refugees crested, these resources proved inadequate to meet the demand.²¹

Several critical factors exacerbated the refugee crisis and increased the demand for rapid international intervention. First was the sheer size of the refugee caseload and the extremely high population density in the refugee camps.²² Over 800,000 refugees were crowded into Northern Zaire in three camps and thousands were spread along the roads north and south of Goma. Second, approximately 40% of the refugee caseload were at least 25 km. away from the nearest water source.²³ Third, operations started in the course of a full blown cholera epidemic, compounding already disastrous conditions.²⁴ Fourth, the camps were located on inhospitable terrain, which made access and digging almost impossible.²⁵ Finally, the difficult geographical area with its limited infrastructure and institutional deficiencies made logistics support and procurement of supplies extremely difficult.²⁶

From 14 to 19 July UNHCR emergency staff arrived from Bukava, Zaire and Geneva, Switzerland to coordinate the massive relief efforts. To stem the tide of the cholera epidemic, the UNHCR established an immediate target water allocation of 5 to 7 liters per day per refugee, with an ultimate goal of 15 to 20 liters per day to meet sanitation and food requirements.²⁷ To meet this need the UNHCR issued an urgent request to donor governments to commit themselves to providing water production and distribution equipment and personnel. With its rapid lift and quick response capability, the US provided initial relief.

While conducting simultaneous assessments of the situation in Goma, UNHCR and US military assessment teams met and selected Lake Kivu, north of Goma, for the start of water production efforts. Lake Kivu provided a large source of surface water free of industrial

contaminants, relatively easy to purify, and within the a reasonable distance to the refugees.²⁸

US equipment was shipped from two sources within 48 hours of the request.

The U.S. military activated Task Force 51 (TF51), consisting of a supply and service company, and deployed it to operate water purification points at Lake Kivu. Due to the urgency of the mission TF51 was deployed under verbal orders with an initial mission to operate the Reverse Osmosis Water Purification Units (ROWPU) at the lake and transport water to eight retail points. Upon arrival at the site, the mission was changed to transport purified water to only one retail point.²⁹

A total of eight ROWPU units (two 600 gallons per hour [GPH] and six 3,000 GPH) were deployed to Lake Kivu.³⁰ These highly sophisticated self-contained units purified water according to US standards. All contaminants, impurities from infiltration, waste, silt, bacteria, algae, and other disease organisms were removed through the units' semipermeable membrane mechanism prior to distribution and consumption by the refugees.³¹ Each 3,000 GPH ROWPU had organic 50,000 gallon storage capability and a limited number of 2500 gallon storage bladders.³²

BHR/OFA funded a private water purification and pumping system from the US civilian sector to supplement the US military efforts.³³ Two 500,000 GPD Potable Water Supply Systems (PWSS) units from the San Francisco Firefighters were deployed to Lake Kivu. These large capacity units, with their six-inch lines, had the capability to pump 1500 gallons per minute.³⁴ The process was simple and rapid. The water was pumped from the lake and chlorination was carried out inside the full water tankers.

Although the production of high quality water had begun, the UNHCR voiced concerns regarding production capability and the purification standards of various governments. The technology of the ROWPU's far exceeded the requirements of the refugees. Their bulkiness, maintenance requirements, and precise process delayed water production and distribution to the refugees.³⁵

The UNHCR expected donor governments to provide minimally treated water, not the highest standards of purification. According to the UNHCR's Water Manual for Refugee Situations, to preserve public health, a large amount of reasonably safe water is preferable to a smaller amount of pure water. Potable water is the best way to control water-borne diseases in an emergency refugee camp. In any refugee situation, complex water treatment should be minimized. If large numbers of refugees are concentrated in refugee camps, simple disinfection of water should be the norm. Only under very special circumstances should the improvement of the chemical quality of water be considered. Also, water treatment technology should be as simple as possible.³⁶

The UNHCR felt the water in Lake Kivu was essentially potable except for the presence of coliform bacteria, which made it necessary to mildly chlorinate the water to ensure its potability. OXFAM and the MSF understood this fact, having produced water similarly in the past. But the UNHCR met resistance from the US military when they requested the military unplug their ROWPU plants and simply chlorinate in tankers in order to increase volumes of treated water to meet the demand of the dehydrating and dying population.³⁷ After consulting with preventive medicine experts, the US agreed to use the ROWPU's only for military personnel.³⁸

The operation then shifted to direct pumping operations from the lake. Production capability dramatically increased. The problem then shifted from production to storage and transportation. Again, UNHCR responsibilities and US military capabilities did not coincide. The UNHCR expected the US to provide water production and transportation assets as part of the "water package", thereby ensuring water distribution to the refugee camps.³⁹ On receipt of its verbal orders, TF 51 prepared itself only for water production and minimal transport. Local trucks and a small number of organic truck assets to the supply and service company at Lake Kivu provided minimal service. MSF Belgium attempted to use the twenty 5,000 gallon oil tankers parked at the lake to take up the slack.⁴⁰ The US vigorously objected, claiming the tankers could not be adequately cleaned for safe use. The US refused to load any water on the tankers, with the exception of three that had been cleaned and used prior to the US arrival.⁴¹ Thus the tanker capacity for transport had reached only one-eighth of the required capacity.⁴²

UNHCR then issued a world-wide plea for tankers. The US provided two 5,000 gallon tankers and four flatbeds with 2500 gallon mounted tanks. Finland provided nine 5,000 gallon tankers. The British rounded out the fleet with six 2500 gallon tanks flown in from Bosnia.⁴³

Further efforts were instituted to increase the storage capacity at the camp sites. The US used its airlift capability to transport water equipment and supplies from the United Kingdom for OXFAM use. Using this equipment, OXFAM built large water holding tanks at the Kimbumba Camp.⁴⁴

With the transport problem finally resolved, maintenance became an issue. Non-standardized fleet equipment presented maintenance problems and other logistical difficulties. The water sector meetings at the Humanitarian Operations cell in Goma, revealed all too clearly

that the myriad of relief organizations had little ability to solve the problems. The issue was not resolved until MSF Holland assumed centralized management of fleet operations. The basic lesson of unity of command had to be learned once again- the hard way. Although a positive step, this use of physicians in an administrative role was roundly criticized. The services of MSF were desperately needed to provide refugee medical care. Yet this shift in priorities severely diminished medical support in the Goma area.

Although problems surfaced throughout the operation, creative resolutions and on-going corrective actions enabled refugees access to adequate water supplies. The combined efforts of OXFAM, MSF, the German THW, and the US military provided 10-12 liters per day. Within ten days of starting the water operation at Lake Kivu, the refugee death rate had dropped from 6500 per day to less than 500 per day.

Future operations of such magnitude can greatly benefit from a critical analysis of the underlying causes of the problems that occurred at Lake Kivu.

Divergent Views: One Cause

The water production efforts at Lake Kivu raised questions of performance at the strategic, operational, and tactical levels throughout Operation Support Hope. However, interagency cooperation was the central theme. Tom Frye, DART, comments that many NGO's felt the US failed to keep promises of services and equipment.⁴⁵ UNHCR representatives accused US forces of poor communication and priority-setting, which delayed services.⁴⁶ Other agencies argued that US forces operated under a different set of rules, guaranteeing their own safety first.⁴⁷ Conversely, US military sources claimed the relief agencies failed to clearly communicate their needs.⁴⁸ Furthermore, the UNHR expectation of military assistance was contrary to the initial

strategic plan. Clearly, the root problem was poor communication from the start, which led to inadequate planning and hectic improvised execution.

The urgent request to “stop the dying” prompted a rapid ad hoc response by the US government (USG). Pressure by the President to respond immediately left no time for deliberate planning. Furthermore, there was no contingency planning for humanitarian missions to fall back on, or to offer start-up guidance.⁴⁹ This operation was a true crisis response characterized by simultaneous planning and execution and constant change.⁵⁰ JTF planners cited insufficient planning time, inappropriate planning, lack of mission specifics, simultaneous and uncoordinated assessment, and lack of coordination with relief agencies as contributing factors to perceptions of US military inefficiencies.

The mission of the JTF was to coordinate and provide support to the relief agencies in place. However, initial planning at the JTF occurred without coordination with the UNHCR or NGO's. The JTF failed to gather the basic information, such as activities of various relief agencies, locations, or support plans.⁵¹ Due to this lack of joint planning, mission statements were written independently of the organizations they were designed to assist. As a consequence, the UNHCR and NGO's did not understand the US support role. Divergent missions caused the US to move in one direction and the relief community in another. DOS representatives claimed the guidance given to EUCOM and the JTF commander from the Chairman, Joint Chiefs of Staff was broad and left much to the discretion of the commander to execute the mission.⁵² JTF planners confirmed that no written warning order was ever received other than the message, “do something to stop the dying”.⁵³ The EUCOM Commander used the information contained in follow-on speeches by the President, Secretary of State, and CJCS to formulate his mission and

to task the JTF commander.⁵⁴ Based upon the guidance from EUCOM, the JTF commander interpreted the primary mission to be assisting ongoing efforts for the operations of water distribution and purification as rapidly as possible. He further assumed that the US presence in these efforts was to be a stop gap measure until agencies with more expertise became operational.⁵⁵ Therefore, the US responded by delivering the most effective water resources in its inventory and airlifting the necessary international water resources to meet the refugee needs.⁵⁶ However, the UNHCR had higher expectations of the US forces, to include water production, total transport of the water to the camps, and rapid disinfection of water - not purification.⁵⁷

The UNHCR expectations were based on prior discussions regarding the UNHCR request for service "packages" from donor governments. In July 1994 the UNHCR met with various relief agencies and government representatives to solicit contributions for eight support "packages". These included such provisions as "Water", "Airport Services", "Sanitation" and "Management of Airheads".⁵⁸ After in-depth discussions among the NSC Adviser and representatives from DOS, and USAID/OFDA, the US committed to deliver certain of these packages, including water.⁵⁹ But the contents of the support "packages" were stated in broad terms. Furthermore, the JTF commander was not apprised of the support "packages" he was to provide until late August 1994.⁶⁰ This lack of appropriate guidance left the interpretation of the contents to the JTF commander responsible for providing the service. Consequently, the US military planned independently for those services it deemed appropriate to meet the water production mission. The UNHCR based its expectation on services the US military provided in Somalia, failing to recognize that the US mission in this operation was very different from past operations.⁶¹ Also, the UNHCR was reluctant to use its scarce resources when services could be

provided by another source.⁶² Had the requests been more specific and the technical guidance on water purification versus water disinfection been made known to US military planners, the US military would have established mutually acceptable ground rules for water preparation and transport.

The lack of a coordinated joint assessment among the UNHCR, OFDA, and NGO's contributed to confusion and inefficiencies. OFDA, which has responsibility for acting as a buffer between the US and relief agencies and assists the US in support planning, was not a member of the assessment team.⁶³ Their DART assessment was conducted independently; the results forwarded to Washington, thereby delaying transmission of key assessment information to the JTF Commander. The UNHCR had not adequately assessed the situation on the ground in Goma prior to the arrival of the US assessment team. The US assessment team and the UNHCR emergency response team met in Goma serendipitously on 22 July and quickly jointly determined mission needs.⁶⁴ At the same time, Washington announced the mission objectives, size of operation, and execution of deployment.⁶⁵ The assessment team had insufficient time to examine what relief services were already on the ground, what types of services they were providing, and what support services the US could provide. Before the US assessment team in Goma could assess the types of equipment for water preparation being used by the relief organizations and receive technical guidance on water preparation methods, ROWPUs were en route to Goma. To expedite the arrival of ROWPUs, a shipment en route to the Middle East was diverted to Africa.⁶⁶ Interaction (a consortium representing 160 NGOs) concluded that the the US use of the inefficient ROWPUs demonstrated that the US military was not properly integrated into the overall assistance structure.

Coordination problems persisted on the ground after the relief operations were underway. The UNHCR was responsible for overall coordination. However, they failed to attend coordination meetings with the CMOC regularly or to encourage the NGO's on the ground to do the same. US representatives at the water sectoral meetings stated the UNHCR took at least a week to "jell" and to adequately monitor distribution of work among the agencies.⁶⁷

In response to the transportation crisis, there was little forward planning by the UNHCR. When recognition of the need for transport emerged, US representatives at the CMOC meetings stated this information was never immediately conveyed to the military.⁶⁸ MSF stated that a great deal of message traffic occurred between Geneva and OFDA to resolve the problem but US sources in the field were initially left out of the loop.⁶⁹ When transport assets were located and became available, no efforts were made to determine responsibility for maintenance or other logistical requirements.⁷⁰

The relief community complained the US mission lacked transparency in the rules of engagement. From the perspective of the NGO community, the US military were playing under a different set of rules. Our requirement to travel in convoys and only during daylight slowed the water distribution efforts. Other agencies perceived that we placed our own safety ahead of the needs of the refugees. The rules of engagement were not communicated to the relief agencies at all levels, so US actions were not clearly understood.⁷¹

Obviously, hasty preparation and miscommunication from the strategic to the tactical level by the UNHCR, NGO's, and US Government contributed to the inefficiencies and ineffectiveness of the water operations. Although the operation ultimately achieved its goal through the innovation and tenacity of military leaders on the ground, major planning and coordination

problems persisted. Two distinct cultures, neither understanding the other, attempted to respond to a monumental crisis. The sheer volume of current and future humanitarian relief operations, coupled with a dwindling resource base, demands a balanced and integrated effort.

RECOMMENDATIONS

In order for future humanitarian operations to work, all parties must establish mutually supporting roles. Both communities are serving in the spirit of humanitarian service. Yet the manner in which each agency approaches this common goal is largely a product of the values and core principles of the organization they represent.⁷² By definition the civilian relief agencies are autonomous organizations, and act according to their charters. Conversely, the military acts according to national policy.⁷³ Both must develop a relationship based on an understanding and acceptance of cultural differences. They must use their capabilities in a complementary way. US forces must understand the culture and organization of the international relief players; they must plan how to best integrate them in the mission to maximize resources and efficiency of operations. The international relief organizations must understand the planning process of the military and learn how the military responds to the uniqueness of each crisis. The water operation mission in Operation Support Hope illustrates the need for joint planning, training, and assessment to smartly execute our future roles in support of humanitarian relief operations.

Joint planning is essential. Commander-in-Chief's (CINCs) of each unified command must develop contingency plans for humanitarian relief operations likely to occur within their respective areas of operation (AOR) now. CINC's of each unified command should be aware of potential and existing humanitarian relief issues within their respective area of operation (AOR). Routine communications with country teams of these nations and civilian relief agencies should be used as tools in preparing to meet impending crises. Deliberate planning should begin immediately. These deliberate plans then can be modified as a crisis situation arises. Planning

considerations should be given to the types of military and civilian services available in the AOR and from additional requirements from outside sources. Military and civilian players should devise a plan of integration to include mobilizing resources, orchestrating field activities, and negotiating a framework for action with the host government. Since many humanitarian relief operations face similar challenges, such as security, infrastructure development, public health/medical requirements, and agriculture/economic requirements, specific roles and responsibilities should be delineated. A command and control structure should be identified. Parties must understand how decisions are made. They must have real-time access to the proper flow of information to meet mission requirements. Through such joint planning efforts a framework can be established for like operations.

Because many times a rapidly developing crisis precludes an adequate assessment, prior planning of the nature described allows a transition to the crisis in a more disciplined manner and thus shortens the assessment process.. Both parties would already be aware of the capabilities of the other. Representatives from the military, international relief agencies, and USAID/OFDA could then meet jointly in the field to determine the location of actual resources and to decide what additional resources are needed and who will provide them. Because of its supporting role, the US military relinquishes control to the relief agencies after stabilization of the crisis. Thus mission end-states must be jointly agreed upon. Through combined planning sessions, the principal actors- military, governmental agencies, UN, and NGO's- should examine each of the major milestones involved in relief operations and develop measurable criteria for achievement.⁷⁴ These criteria should be incorporated into contingency plans and the operating doctrine of civilian agencies. At the time of the crisis, these criteria can guide the determination of the end-

state for the current operation. Parties can thus avoid hasty decisions and improper transition of control.

Very diverse organizations belong to the international relief community. These organizations have their own operating procedures, cultures, and agendas, much different from those of the US military. To develop the necessary cooperation and coordination in a crisis situation each party must understand the organization and abilities of the other. This can best be accomplished through proactive education.

At each level of military education core curriculums should be developed for peace operations.⁷⁵ At the basic level, emphasis on humanitarian relief operations should include a thorough review of the types of relief organizations, their mission, and introduction to operational methods. Lessons learned at the tactical level of past missions should be reviewed and analyzed. At the Command and General Staff College, a review of types and missions of relief agencies should be followed by an exhaustive analysis of the coordination needed at the regional level to solve the inherent problems associated with command and control. At the senior service level, students must focus on national policy related to participation in humanitarian relief operations and the integrated efforts of the world leaders of the IO's, NGO's, UN, and donor governments to meet the mission.

Cross-training in agency schools should be considered. Relief agencies should be invited to attend US logistic, transport, and medical training facilities. The UN should offer technical training in refugee care, such as water, sanitation, food, and shelter. This training should be available to military forces. Faculty at various schools should be cross attached for specified periods to learn one another's expertise.

Foreign militaries should make a wide range of experience available to the US military. The Australian Defense Force established a Peacekeeping Center in 1993 to develop and manage peacekeeping doctrine and training.⁷⁶ The Canadians, participants in every UN peacekeeping mission to date, have established the Pearson Peacekeeping Center as a focal point for peace operations training.⁷⁷ The French are actively involved in developing a JTF concept with civil affairs cells to coordinate field efforts as a result of lessons learned in the Balkans, Cambodia, Somalia, and Rwanda.⁷⁸ Participation in training with these agencies can assist US forces in mastering operational control with the international agencies.

Participation in functional courses, seminars, and conferences developed by peacekeeping and disaster relief training centers is imperative. Sharing of lessons learned and joint development of solutions to critical problems will improve future missions and serves as a vehicle for understanding peace operations.⁷⁹

Such efforts in planning and training will better prepare all agencies, both military and civilian, for the cooperation necessary for the success of humanitarian missions in the future.

CONCLUSION

Although cited by the US military as an overall success, the US military's participation in Operation Support Hope illustrated a wide array of problems associated with interagency cooperation/coordination. The water operations at Lake Kivu in Goma, Zaire, graphically illustrated specific problems with roles, responsibility, planning, and assessment. Insufficient information-gathering caused the US to respond with inefficient water purification resources and insufficient transport assets. Hurried planning and assessments by the military and civilian relief agencies necessitated frequent mission adjustments and fostered confusion regarding responsibilities of the US military and the civilian agencies. Both the US military and relief community were roundly criticized for these perceived miscues.

Since US forces are increasingly called upon to provide humanitarian relief, they must learn how to complement other agencies to protect dwindling resources. Civilian agencies, likewise, must learn how to develop cooperative relationships or be faced with critical resource shortfalls. If not, the mission fails and the plight of the suffering people continues unabated.

This interagency process can be greatly improved. As I conducted interviews on this topic, every civilian and military interviewee agreed the success of future missions depends on a shared understanding of what each agency brings to the crisis and on the measures needed to combine the capabilities to accomplish the mission. Donor governments and civilian relief agencies must make concerted efforts to plan and train before the next complex humanitarian mission to maximize the use of critical resources. Joint planning and education will serve as the true catalyst for change.

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