

# NAVY - MISC

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DEPARTMENT OF THE NAVY  
NAVY DISEASE VECTOR ECOLOGY AND CONTROL CENTER  
NAVAL AIR STATION  
JACKSONVILLE, FLORIDA 32212-0043

6440  
0411/930603  
2 Nov 89

From: Team Leader, Vector Control Team Three (VCT-THREE)  
To: Commanding Officer, Navy Environmental Health Center  
Via: Officer in Charge, Navy Disease Vector Ecology and Control Center, Jacksonville

Subj: DISASTER RELIEF FOR VECTOR CONTROL TO CHARLESTON NAVAL WEAPONS STATION FOLLOWING HURRICANE HUGO

Encl: (1) Copy of LT Cope NAVDISVECTECOLCONCEN JAX memo of 28 Sep 89 to OIC NAVDISVECTECOLCONCEN JAX  
(2) Copy of Asst. Ops. Officer NAVDISVECTECOLCONCEN JAX memo of 10 Oct 89 to OIC NAVDISVECTECOLCONCEN JAX  
(3) Copy of CO NAVHOSP Chas SC ltr 8250 310.3/47 of 4 Oct 89 to OIC NAVDISVECTECOLCONCEN JAX

## 1. Background

a. Hurricane Hugo struck Charleston, South Carolina, on 21 September causing widespread damage to buildings and other structures. Power, communication, and transportation were disrupted by flooding and fallen trees over a wide area. Many areas were without power four weeks after the storm. Several low-lying areas remained flooded weeks after the hurricane, and fallen trees prevented access for normal mosquito larviciding activities. Concurrent with the destruction of Hurricane Hugo, an epidemic of Eastern Equine Encephalitis was also noted in horse populations along the eastern coast of the United States. At least one human case was also noted. These situations caused great concern for the health of military and civilian personnel in the Charleston area.

b. Due to the complete destruction of the communication systems in the Charleston area, a preliminary visit was made to the Charleston area by LT S. E. Cope, MSC, USNR, of the Navy Disease Vector Ecology and Control Center (DVECC) Jacksonville. His objective was to establish contact with Preventive Medicine at the Naval Station Charleston and with the Mosquito Abatement District in Charleston County. His findings are reported in enclosure (1).

c. A subsequent fact-finding trip was undertaken by LT Cope and LT D. M. Claborn, MSC, USNR, 3-5 October 1989 to assess the effect of Hurricane Hugo on vector populations (enclosure (2)). This trip revealed high levels of mosquito infestations on the Naval Weapons Station, Charleston. Species which were collected included Aedes sollicitans, Ae. vexans, Ae. taeniorhynchus, Psorophora columbiae, and Ps. ferox. Landing rates in some areas were in excess of 75 mosquitoes/minute, mostly Ae. sollicitans. Larval counts in some swamps were between 6 and 10 mosquitoes/dip. Even shipboard personnel at the Naval Weapons Station piers were being bitten while on the mess decks.

d. In response to a request for assistance from the Commanding Officer, Naval Hospital, Charleston (enclosure (1)), a vector control team consisting of one entomologist and one preventive medicine technician was deployed, along with a Buffalo Turbine, to the Charleston Naval Weapons Station. The intended objectives of this team were to

(1) effect mosquito control by application of residual pesticide to fallen brush and vegetation which were providing protection for large vector populations;

(2) effect larval control in low-lying flooded areas;

(3) monitor the effectiveness of vector control efforts by station pest control, DVECC personnel, and the Air Force C-130 spray team;

(4) train local pest controllers in the maintenance and safe use of the Buffalo Turbine so that brush treatment could be continued after DVECC personnel returned to Jacksonville.

## 2. Personnel Contacted

RADM S. Bump	Commanding Officer NAVSTACHRS
CAPT R. White	Chief of Staff, NAVSTACHRS
CAPT R. Kmetz	CO, Naval Weapons Station, Charleston
CDR R. Johnson	PWO, Naval Weapons Station, Charleston
LCDR R. Williams	Head, Preventive Medicine, NAVMEDCLNCHRS
Maj D. Deckman	Spray Mission Commander, USAF
Maj L. O'Dell	Navigator, USAF
Maj T. Biery	Entomologist, USAF
Capt G. Lucas	Pilot, USAF
Capt D. Wiles	Navigator, USAF
LT C. McNew	Public Affairs Officer, WPNSTA, Chas.
LT L. Lindsey	Assistant PWO, WPNSTA Chas.
ENS J. Bobich	EHO, NAVMEDCLNCHRS
HMC C. McDowell	PM, Chief, NAVMEDCLNCHRS
MSGT W. Rooks	Loadmaster, Spray System Operator, USAF
TSgt R. Jamison	Loadmaster, Spray System Operator, USAF
TSgt G. Cary	Flight Engineer, USAF
HMI R. Larsen	PMT, NAVMEDCLNCHRS
Mr. C. Bennett	Entomologist, NAVFACENCOM
Mr. C. Ducker	Pest Control Leader, NAVSTACHRS
Mr. C. Gruver	Work Director, Pest Control, WPNSTA Chas.
Mr. R. Braddock	PCO, NWSCHRS
Mr. R. Graham	PCO, NWSCHRS
Mr. L. Seymour	PCO, NWSCHRS
Mr. M. Hyatt	Director, Charleston County Mosquito Abatement

## 3. Initial Actions

a. On 8 October 1989, the vector control team consisting of LT D. M. Claborn and HMI D. M. Spafford, USN, arrived at the Naval Weapons Station, Charleston, with the Buffalo Turbine and

10 gallons of Dursban 4E. Billeting was obtained at the Naval Base in North Charleston and the nearby Naval Hospital.

b. A meeting was held on 8 October at 1530 between activity personnel (including the CO), the Air Force C-130 Spray Team, and DVECC personnel. Plans were formulated for aerial treatment of the base by the Air Force using Dibrom at 0.5 ounces/acre dispersed at an elevation of approximately 150 feet.

c. Notices were sent out in the Plan of the Day notifying base personnel and residents to stay away from brush piles where mosquitoes were harbored and where a residual pesticide would be sprayed by DVECC personnel.

d. Initial landing rates were taken at the spoils site and the ball park. All landing rates were taken on two different personnel and are reported as a mean in Table 1. Monitoring was continued after mosquito control efforts by Public Works, DVECC personnel, and the Air Force. The landing rates were taken at approximately the same time each day for each site, though temperatures varied significantly.

#### 4. Mosquito Control Efforts

a. Control efforts by DVECC personnel were initiated on Monday 9 October using the Buffalo Turbine. A 0.5% solution of Dursban 4E was applied to felled brush, standing vegetation, and larval breeding sites. Treated areas had previously been identified as "hot spots" by landing rates. These areas included the spoils area and surrounding swamps, the ball park/helicopter pad, the areas around parking lots near the piers, vegetation along Perimeter road, and the ordinance areas. A total of 500 gallons of Dursban mixture was sprayed in these areas. The spoils area and parking lots were each treated twice.

b. A residual treatment of Sevin S was applied to brush surrounding warehouses in the ordinance areas. Personnel in the warehouses had submitted several complaints about mosquitoes so over 100 gallons of mixed Sevin were applied in these areas. This compound was not used for larviciding.

c. The Hunley Park residential area was surveyed to determine if mosquito control with the Buffalo Turbine would be effective. However, due to the site of this area (directly above a large marsh) and to the fact that most of the broken limbs had already been removed, it was determined that this type of control would be minimally effective. Aerial treatment by the Charleston County Mosquito Abatement District was recommended and was accomplished later the same day. Periodic treatment by ground ULV was also continued by the activity's pest control personnel.

d. The South Annex of the Naval Weapons Station was surveyed also. Numerous complaints about mosquitoes had been received from civilian personnel working in warehouses. Heavy brush and felled trees were providing shelter for relatively heavy

populations of *Ae. taeniorhynchus*. Recommendations were made to the pest control personnel to put a barrier treatment around each of the warehouses using Sevin S applied directly to the vegetation. With this purpose in mind, the Buffalo Turbine was loaned to the Naval Weapons Station. Current ground ULV efforts were also continued.

## 5. Results

a. Mosquito populations were reduced through efforts of the Air Force, activity pest controllers, and DVECC personnel (See Table 1). Landing rate determinations were continued after DVECC personnel left Charleston by ENS Bobich of Preventive Medicine, NAVMEDCLCHRS and his results are reported in Table 2. A CO<sub>2</sub> trap was used for only one night due to the nonavailability of dry ice locally. The trap was baited on the afternoon of the 9th, immediately after the Air Force spray mission. A total of 998 mosquitoes was trapped, mostly *Culex* spp., but including significant numbers of *Ae. sollicitans*. In general, landing rates indicated a significant decrease in mosquito activity in all treated areas. Area residents who were queried responded that they were not being bothered as much. Adult mosquito activity and larval populations were drastically reduced in the spoils area where dipping had previously yielded 6 to 10 larvae per dip. After treatment, less than one larva/dip was collected. High levels of adult mosquito activity were still noted near the ball park and in the ordinance areas; activity pest control personnel, however, were properly equipped to handle the problem.

b. Table 1. Mosquito landing rates/minute at Naval Weapons Station, Charleston, following Hurricane Hugo as determined by DVECC personnel.

Date	Spoils 1	Spoils 2	Ballpark
04 Oct	75	-	-
08 Oct <sup>1,2</sup>	14	-	80
09 Oct <sup>2</sup>	25	71	71
10 Oct <sup>2</sup>	02	06	22
11 Oct <sup>2</sup>	03	05	25

<sup>1</sup> Date of Air Force Spray Mission

<sup>2</sup> Dates of mosquito control efforts by DVECC personnel

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c. Table 2. Mosquito landing rates/minute at Naval Weapons Station, Charleston, during control efforts following Hurricane Hugo as determined by Preventive Medicine, Charleston.  
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<u>Date</u>	<u>Ball Park</u>	<u>A&amp;E Club</u>	<u>Exchange</u>	<u>Main Gate</u>
12 Oct	23	17	05	04
13 Oct	18	21	06	07
14 Oct	19	15	08	03

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6. Outbriefing

a. An out-briefing was held with LCDR Williams, LT Lindsey, and Mr. Bennett on 15 October. LCDR Williams agreed to continue mosquito surveillance by landing rate after DVECC personnel returned to Jacksonville. The possibility of a second treatment by the Air Force was discussed. LCDR Williams assumed responsibility for determining the need for the second treatment.

b. Pest control at the Weapons Station was advised to include larviciding as part of their mosquito abatement strategy, especially in the ordinance areas where Altosid<sup>®</sup> briquettes or pyrethrum Toss-its<sup>®</sup> would be appropriate. Mr. Bennett concurred on all of these recommendations.

7. Findings and Recommendations

a. Future deployments in security sensitive areas such as a weapons station can be expedited by obtaining passes to as many areas as possible upon arrival. The local Public Works Officer can contact security to insure the procurement of passes, thereby minimizing the time spent waiting for clearance to areas which need treatment.

b. Any vector control team should be comprised of enough people and vehicles to adequately accomplish pest control and the accompanying management and planning. In this case, extra personnel and vehicles were not available due to the deployment of two MMART teams to St. Croix and Puerto Rico from DVECC, Jacksonville. The lack of manpower and transportation unavoidably resulted in inefficient use of personnel and less than optimal planning. A designated manager could have identified "hot spots," planned spray routes, monitored effectiveness of control efforts, and acted as liaison with base security and management. A good general guideline would be to always deploy the number of personnel and vehicles necessary to operate the desired number of sprayers, misters, etc., plus one person and one vehicle designated to handle planning and administration.

c. The Buffalo Turbine, though old, was an extremely useful piece of equipment and was probably the most effective means

available for applying residual pesticides to the large brush piles present after the hurricane. The high pressure (175 mph at the nozzle) and large carrying capacity allowed the vector control team to thoroughly treat thick vegetation which would be relatively inaccessible to ground or aerial ULV technology. In addition, the Buffalo was used to apply larvicides, both granular and liquid, over large areas. The only problems with the use of the Buffalo Turbine were due to its large size and weight. Some areas of the station were inaccessible for treatment because suitable roads were not available. Nevertheless, the Buffalo Turbine is more powerful and more versatile than most pieces of pest control equipment currently in the Navy inventory. It can also be modified with a reel of hose and a pistol-grip spray gun for application in small, inaccessible areas such as building interiors. This would have been helpful in Charleston. The results of the Charleston mission clearly indicate that the Buffalo Turbine enhances DVECC's ability to respond to a variety of situations; therefore, it should be retained in the inventory and constantly maintained for emergency use.

*D. M. Claborn*

D. M. CLABORN

28 Sep 89

MEMORANDUM

From: LT Cope  
To: OIC

Subj: POST-HUGO TRIP TO CHARLESTON

1. On 26-27 September 1989, LT Stanton E. Cope, MSC, USNR, went to Charleston, S.C. to contact vector control personnel and coordinate post-hurricane vector control preparedness among Charleston Mosquito Control, Preventive Medicine, Public Works and the Commanding Officer's office.

2. The following personnel were contacted:

RADM Stanley Bump	Commanding Officer, NAVSTA
CAPT R. White	Chief of Staff
LCDR R. W. Williams	Head, Preventive Medicine
LT K. Ahlin	Flight LT for RADM Bump
Chief McDowell	FM Chief
HML R. Larsen	PMT
Mr. Martin Hyatt	Director, Charleston County Mosquito Control

3. Findings

a. Aerial and ground control equipment of Charleston County Mosquito Control (CCMC) is intact. Mr. Hyatt has one aircraft of his own and has made arrangements to secure aircraft from Savannah and Beaufort, SC. He has also made contact regarding the Air Force spray capabilities.

b. CCMC has approximately 8000 gallons of malathion which DVECC may use if necessary.

c. Mr. Hyatt reported that Hugo dumped only 5 inches of rain. Aerial surveillance shows that several of the salt marsh mosquito breeding areas are filled with mud which will suffocate larvae and eggs. If a mosquito problem develops, it may come from floodwater mosquitoes and Culex pipiens quinquefasciatus.

d. Mr. Hyatt is also concerned with filth flies which have been a problem after hurricanes in the past.

e. Preventive Medicine is operating with two people per day who spend all their time checking water supplies. Vector surveillance will resume as soon as possible. Preventive

Medicine and CCMC will work closely in monitoring potential vector levels.

f. On 27 Sep 89 LT Cope, LCDR Williams and Mr. Hyatt met to discuss surveillance and emergency control plans should the need arise. A brief was presented on how to acquire the services of DVECC if required. Following this meeting, we briefed RADM Bump and CAPT White on anticipated problems and told them that CCMC and DVECC were prepared to initiate emergency vector control at Naval Station, Charleston if so desired.

S. E. Cope

10 Oct 89

MEMORANDUM

From: Assistant Operations Officer  
To: OIC, DVECC

Subj: POST-HUGO FACT FINDING TRIP TO SOUTH CAROLINA

1. On 3-5 October 1989, LT Stanton E. Cope, MSC, USNR and LT D. M. Claborn, MSC, USNR traveled to Charleston and Beaufort, S.C. to contact Preventive Medicine and vector control personnel regarding post-hurricane vector control preparedness.

2. The following personnel were contacted:

• CAPT R. White	Chief of Staff, NAVSTACHRS
• LCDR R. W. Williams	Head, Preventive Medicine, NAVMECLNCHRS
• LT L. F. Lindsey	Assistant PWO, Naval Weapons Station, Charleston (NWSCHRS)
• LT C. McNew	Public Affairs Officer, NWSCHRS
• LT C. D. Kimsey	Head, OCCHLTH/PREVMED, NAVHOSP, Beaufort
• ENS J. Bobich	EHO, NAVSTACHRS
• ENS S. Richardson	Head, Operating Management Department, NAVHOSP, Beaufort
• HMC B. Winner	PMT, BRMEDCLN, MCAS
• HMC C. E. McDowell	PM Chief, NAVMECLNCHRS
• HM1 R. K. Larsen	PMT, NAVMECLNCHRS
• HM2 C. Steele	LPO, OCCHLTH, MCAS
• Mr. M. Hyatt	Director, Charleston County Mosquito Abatement
• Mr. C. W. Bennett	Entomologist, NAVFACENGCOM
• Ms. S. E. Bartku	Entomologist, NAVFACENGCOM
• Mr. C. A. Ducker	Pest Control Leader, NAVSTACHRS
• Mr. R. Braddock	PCO, NWSCHRS
• Mr. R. Graham	PCO, NWSCHRS
• Mr. L. Seymour	PCO, NWSCHRS
• Mr. C. Gruver	PCO, NWSCHRS
• Mr. D. Arnold	Director, Beaufort County Mosquito Control (BCMC)
• Ms. E. Hager	Biologist, BCMC
• Mr. J. Roberts	Pilot, BCMC
• Mr. C. Fish	Pilot, BCMC
• Mr. C. Barnhart	Flight Engineer, BCMC
• Mr. M. Thibault	Flight Engineer, BCMC

### 3. Findings

a. The Naval Weapons Station has a serious problem with mosquitoes. Landing counts were in excess of 75 per minute, mainly Aedes sollicitans. Shipboard personnel reported being bitten on mess decks. Pest control was operating only one of their LECO HD's from 4 AM until conditions became unfavorable for ULV. Recommendations included operating both sprayers during evening hours as much as manpower will allow.

b. Hurricane debris is being piled up around the base in anticipation of removal. These piles were full of resting mosquitoes which would commence biting when disturbed. The Buffalo Turbine of NWS was inoperable. LCDR Williams wrote a letter requesting that DVECC provide a Buffalo Turbine and personnel to spray a residual pesticide on debris and vegetation. LT Claborn and HML Spafford from DVECC, JAX were dispatched with said equipment on 8 October 1989.

c. Pest control personnel at the Naval Station spent the first week post-Hugo cutting up debris and were just now beginning mosquito control efforts. Mosquito populations at the Activity were intolerable in some areas.

d. As predicted, mosquito complaints are coming in from all over Charleston County. Pest species are primarily pool and woodland breeders such as Psorophora columbiae, Ps. ferox and Ae. vexans. Martin Hyatt expects things to get worse before they get better.

e. At the suggestion of DVECC personnel, Mr. Bill Bennett was contacted and inquiry was made as to whether the Air Force could spray the Weapons Station. Mr. Bennett arranged for the base to be sprayed at 1600 on 9 Oct 89. Follow up sprays will be done if deemed necessary by mosquito surveillance.

f. L. A. Williams, director of South Carolina Vector Control, is trying to convince the Federal Emergency Management Association (FEMA) to spray all of Charleston County.

g. Bruce Francey and Don Eliason from CDC, Fort Collins are in Charleston conducting mosquito studies, including arbovirus isolation attempts.

h. Hugo's impact on the Beaufort area was minimal. Residents report that mosquito populations are quite high due to recent heavy rains. Culicoides is still the number one pest.

i. David Arnold stated that he is willing to help the Navy in aerial spray efforts should the need arise. He has a Super DC-3 equipped with 10 nozzles. DVECC personnel accompanied the flight team on a spray mission. Arrangements had been made for the plane to assist in control efforts in Charleston.

j. Mr. Arnold provided DVECC with several maps of the area,

numerous technical reports on mosquito control and information pamphlets concerning pesticides and mosquitoes. He is also willing to loan us material for Aedes albopictus surveillance.

S. E. Cope



DEPARTMENT OF THE NAVY  
NAVAL HOSPITAL  
CHARLESTON, SOUTH CAROLINA 29408-8900

IN REPLY REFER TO:

6250  
310.3/47  
04 OCT 89

From: Commanding Officer  
To: Officer in Charge, Disease Vector Ecology Control Center, Jacksonville  
FI 32212-0043

Subj: REQUEST FOR VECTOR CONTROL ASSISTANCE

Ref: (a) Assist Visit by LT Claborn and LT Cope, DVECC, of 3-4 OCT 89

1. During disaster relief efforts provided by personnel from your command after Hurricane Hugo, reference (a), mosquito landing counts at the Naval Weapons Station, Charleston showed increased vector activity which is effecting personnel morale and work performance. Aggressive pest control measures are underway, however, due to the extent of the problem, additional equipment is requested from your command, specifically the Buffalo Turbine and personnel for operation.

2. Your assistance is greatly appreciated. If you have any questions, please contact LCDR Williams, Head, Preventive Medicine Division at COMM: (803) 743-6246/5507 or AUTOVON: 563-6246/5507.

R.W. WILLIAMS  
By direction



LOGISTIC

SUPPORT



DEPARTMENT OF THE NAVY  
NAVY DISEASE VECTOR ECOLOGY AND CONTROL CENTER  
NAVAL AIR STATION  
JACKSONVILLE, FLORIDA 32212-0043

6440  
01/930705

3 NOV 1989

From: Officer in Charge, Navy Disease Vector Ecology and Control  
Center, Jacksonville  
To: Commanding Officer, Navy Environmental Health Center  
Subj: AFTER ACTION REPORT FOR LOGISTICS AND SUPPORT OF VECTOR  
CONTROL EFFORTS IN THE AFTERMATH OF HURRICANE HUGO  
Ref: (a) My 1st end 6440 00/930601 of 2 Nov 89 on Team Leader  
(VCT-ONE) ltr  
(b) My 1st end 6440 00/930702 of 3 Nov 89 on Asst. Team  
Leader (VCT-TWO) ltr  
(c) My 1st end 6440 00/930604 of 3 Nov 89 on Team Leader  
(VCT-THREE) ltr  
Encl: (1) NAVDISVECTECOLCONCENJAX Deployment Overview  
(2) MMART Logistic Support - Topics of Discussion  
1. After review of references (a), (b), and (c), enclosures (1)  
and (2) are submitted for your review and comment.

  
V. H. ZIMMERMAN

NAVDISVECTEOLCONCENJAX DEPLOYMENT OVERVIEW FOLLOWING VECTOR CONTROL EFFORTS IN THE AFTERMATH OF HURRICANE HUGO

In mid-September, 1989, Hurricane Hugo began to sweep across the Caribbean with sustained winds of up to 180 mph. On September 18, it struck the island of St. Croix in the U.S. Virgin Islands. The storm remained stationary over this island from 0330 until 0500, causing unprecedented destruction. Approximately three hours later, Hugo's eye passed 2 miles ENE of Roosevelt Roads, Puerto Rico. On the following Friday, Hugo's full force struck Charleston, SC. Extensive damage to infrastructure occurred at all three locations. Flooding and the accumulation of large areas of standing water promoted the development of large numbers of mosquitoes. The destruction of buildings and the disruption of regular waste management efforts promoted the development of large numbers of filth flies and a potential rodent problem.

These threats to human health precipitated two separate requests to the Navy Environmental Health Center, Norfolk, VA (NEHC) for assistance. The first came from COMNAVACTSCARIB to provide vector control assistance to NAVSTA Roosevelt Roads and several nearby installations. A second request was received shortly thereafter from the U.S. Public Health Service to provide assistance to the island of St. Croix, U.S. Virgin Islands. As a Mobile Medical Augmentation Readiness Team (MMART) operation, NEHC mobilized two Vector Control Teams (VCT-1 & VCT-2), utilizing personnel from the Navy Disease Vector Ecology and Control Center, Jacksonville, FL (DVECC JAX), and the Navy Environmental and Preventive Medicine Unit No. 2, Norfolk, VA (EPMU-2). A further request for vector control assistance came to DVECC JAX from the Naval Hospital, Charleston, SC, and a third vector control team (VCT-3) was dispatched in response. The mission of each team was to provide technical and operational vector control assistance to the requesting authorities until vector population levels had declined to pre-disaster levels and local public health efforts could be resumed.

Within 20 hours of notification to deploy, VCT-1 and VCT-2 and their accompanying gear were staged on the flight line awaiting air transport to Puerto Rico and St. Croix, respectively. Compiling, packing, and certifying equipment and pesticides for air shipment was a team effort on the part of all military and civilian personnel at both DVECC JAX and EPMU-2. Any deployment is a cooperative effort, and special thanks must be made to NSC Preservation and Packaging and Air Operations at both NAS JAX and NAS Oceana. Further acknowledgment must go to CINCLANTFLT Transportation and the Maryland Air National Guard whose cooperation and willingness to help vastly increased the ease of mobilization and deployment.

Encl (1)

#### Vector Control Efforts on Puerto Rico

Vector Control Team-1 was composed of LCDR T.W. Gale, MSC, USN, Medical Entomologist and Team Leader; LTJG S.E. Rankin, MSC, USNR, Medical Entomologist; HM1 W.E. Krothe, USN, Preventive Medicine Technician and HM2 A. L. Gourley, USN, Preventive Medicine Technician, all from DVECC JAX. VCT-1 arrived at NAVSTA Roosevelt Roads via C-130 on the night of September 28, 1989. They reported to COMNAVACTSCARIB and quickly established liaison with the local Preventive Medicine Service and Pest Control Shop. A quick assessment of the situation revealed that, in addition to the higher-than-normal mosquito counts, the destruction of windows and screens in housing areas magnified the problem. Hordes of *Aedes taeniorhynchus*, a salt marsh mosquito, were breeding in the large expanse of surrounding mangrove swamps, and base personnel reported that they were being "eaten alive." Because environmental considerations precluded poisoning the aquatic immature stages (larvae) in the ecologically sensitive mangrove swamps, the mosquito control strategy focused on adulticide sprays. VCT-1 carried the latest in a series of light-weight, emergency ultra-low volume (ULV) insecticide sprayers. The Contingency ULV Spray System (CUSS-1), designed and developed by DVECC JAX's Testing and Evaluation Department, is an 8-lb. electric spray system that attaches to any motor vehicle and runs off the vehicle's battery. Larger, commercial ULV sprayers were also used. Because of the very minute droplet size produced, ULV spray operations must be done under atmospheric conditions that usually exist only at dawn and dusk. An intensive ULV spray schedule was begun, with treatments from 0500 to 0700 and from 1600 to 1900 each day. Between the morning and evening spray cycles, team members conducted vector surveillance and control on NAVSTA Roosevelt Roads, NSGA Sabana Seca, and the town of Luquillo on the island of Puerto Rico, and also at NAF and Camp Garcia on the island of Vieques. After 10 days of intensive effort, mosquito populations were reduced to an acceptable level. Vector surveillance and control responsibility reverted to PMS and PWC, and VCT-1 returned to Jacksonville on October 12.

#### Vector Control Efforts on St. Croix

Vector Control Team-2 was composed of LCDR H.R. Stevenson, MSC, USN, Medical Entomologist and Team Leader; HM1 A.M. Cardwell, USN, Preventive Medicine Technician; and HM1 E.M. Pressley, USN, Preventive Medicine Technician, from EPMU-2; in addition to LT J.M. Conlon, MSC, USN, Medical Entomologist and HMCS K.L. Roden, USN, Preventive Medicine Technician, from DVECC JAX. The elements from EPMU-2 arrived on St. Croix on September 31, followed by the personnel from DVECC JAX on October 1. VCT-2 quickly meshed with elements of the Alabama National Guard and established liaison with the Federal Emergency Management Agency (FEMA), USPHS and representatives of COMNAVACTSCARIB. Almost immediately, they began vector surveillance in and around the Alexander Hamilton International Airport and the National Guard's compound. Because of the extensive destruction of buildings and

complete disruption of waste management services, the filth fly problem was significantly greater here than in Puerto Rico. Effective filth fly control was achieved with residual pesticides dispersed by backpack sprayers and Flytek poison bait, which was dispersed by hand. Extensive mosquito surveillance revealed that *Aedes aegypti*, the primary vector of dengue, was breeding throughout, especially in the town of Christiansted. Many breeding sites were cisterns used for drinking water, so larvicides again could not be used. VCT-2 initiated a successful public relations effort and received permission from island authorities to conduct ULV operations on October 3, 1989. They were equipped with three truck-mounted, electric ULV sprayers and a thermal fogger, which uses heat to produce a fine, very visible pesticide mist.

In addition to vector control and surveillance, VCT-2 repaired local pest control equipment and trained local Public Health representatives in the proper use of ULV spray equipment. Following 16-hour days and life under very primitive conditions, VCT-2's success was demonstrated by the significant reduction of vector population levels. They returned to their respective units on October 12.

#### Vector Control Efforts in Charleston, SC

Vector Control Team-3 was composed of LT D.M. Claborn, MSC, USNR, Medical Entomologist and Team Leader and HM1 D.M. Spafford, USN, Preventive Medicine Technician, both from DVECC JAX. They drove to Charleston on October 8, where they coordinated their efforts with NAVSTA Preventive Medicine Services and the NWS Pest Control Shop. They also established liaison with the Charleston County Mosquito Abatement District and the Air Force Aerial Spray Team. A major problem on these bases was the accumulation of large piles of brush from the many fallen trees. These dense deadfalls provided secure resting places for various man-biting mosquitoes. Surveillance revealed landing counts in excess of 75 mosquitoes per man per minute. The brush piles were often 10 ft. high and thick enough to be impenetrable to conventional ULV space spraying. In this unique situation, VCT-3 used residual pesticides applied with a trailer-mounted turbine sprayer. This machine, generally used for controlling pests on turfgrass and landscape plants, has a high pressure blower with nozzle velocities up to 175 mph. This power, combined with the heavier droplet produced by this machine, easily penetrated the dense masses of fallen vegetation that Hugo had produced. The residual action of the pesticide promised to kill the majority of mosquitoes that used the brush for shelter over a period of several weeks.

VCT-3 also acted as the ground team to monitor the aerial applications provided by the Air Force Aerial Spray Team. VCT-3 continued operation while instructing local PWC pest controllers how best to utilize the turbine sprayer. After a significant reduction in mosquito population levels, the turbine sprayer was loaned to NAVSTA Charleston and VCT-3 returned home on October 13.

MMART: A Concept That Works

The MMART concept was developed to provide for the rapid mobilization of medical assets to augment operational forces in the event of natural disaster or armed conflict. These recent deployments amply demonstrate that NEHC and its Echelon 4 commands are second to none with respect to readiness and proficiency whenever and wherever they are needed. Each of the above areas presented a unique situation and unique problems that were readily addressed and remedied on site by each Vector Control Team. The many long hours of training and practice for MMART deployment have, without a doubt, proven their value, allowing an unprecedented simultaneous deployment of three highly successful Vector Control Teams into three separate geographic areas.

## MMART LOGISTIC SUPPORT - TOPICS OF DISCUSSION

It is inherent to the development of the MMART process to identify or correct existing problems or bring to the attention of the cognizant authority items that need to be considered prior to the next real emergency. The following lists of topics are presented with the hope that the resultant exchange of ideas will enhance the overall readiness of NEHC's very successful MMART program.

### A. Mission Funding

#### 1. Out-side DON Funding

NEHC and the Echelon 4 commands need to explore the utilization of out-side DON disaster relief funding of MMART deployments. This funding probably could not have been used on the deployment of VCT-1 to Roosevelt Roads, as the request came from a DON activity. However, the deployment of VCT-2 to St. Croix at the request of the USPHS might possibly have been fully funded by the requesting agency. Director of Military Support (DOMS) indicated that our deployment to St. Croix was assigned a mission funding number as early as the 28 September. Our FEMA mission assignment number 841DR-VI-DOX-1N for St. Croix might have been used to reimburse our command for any and all expenses. This source of funding might have been exploited to arrange for dedicated aircraft, or to facilitate resupply and retrograde activities.

Even though it is generally thought that reimbursement will be at the DON level, which would preclude the funds reverting to NEHC, our fiscal experts need to fully explore any mechanism by which we can utilize FEMA funds. In the same venue, it would also be advisable to contact USAID/State and establish a similar funds transfer SOP mechanism for funding disaster assistance to foreign governments. In these hard times of fiscal limitations every avenue must be explored to continue to make MMART as viable a concept as possible. If our services are really warranted by an outside agency then we should be honored that they are willing to pay - and let them.

#### 2. Transportation Accounting Codes (TAC No.)

Neither VCT-1 or VCT-2 was given a TAC code to assist in their retrograde following mission completion. While opportune lift is often available and is often "no cost," most transportation coordinators require the inclusion of a viable TAC before processing a transportation request. Team members, however, need to be aware of the high cost of transportation and that a request for a dedicated C-130 from St. Croix to Norfolk could cost as much as 20K. CINCLANTFLT Transportation provided the TAC used to retrograde VCT-1's cargo to DVECC JAX.

Encl (2)

### 3. Equipment Transfer to Local Authorities.

Following a natural disaster where large quantities of local equipment and supplies are lost, it would not be unreasonable for local officials to request assistance of not only manpower but equipment. It is not also unreasonable to expect that a request for assistance might really be a "veiled" request for material support in the form of "permanent equipment loans." The appearance of the lack of generosity or lack of cooperation, especially following press accounts of the pitiful condition of disaster victims, could lead to a negative image of MMART and the Navy. This problem needs to be given serious consideration and advice given prior to any future deployment.

### B. Communications & Resupply

#### 1. Message Traffic

Recent events including both the deployment following Hugo and exercise Proud Eagle '89 have illustrated the limitations of message traffic. If message traffic is the sole communication link all parties must be aware that they are probably dealing with information that is 24-48 hours old and might in no way reflect the current situation. Watchstanders should be encouraged to be particularly persistent and patient when dealing with the local Communication Centers. During any disaster assistance deployment, alternative ways of communication should be encouraged and explored.

#### 2. Minimize Violation

A communication minimize was in effect for both Roosevelt Roads and St. Croix during the deployment of VCT-1 and VCT-2. All messages to those areas should have included the following statement:

Minimize considered by: (Rank) (Name) (AUTOVON No.)

#### 3. Resupply

Resupply efforts were hindered by the fact that all military flights contacted would not divert to NAS JAX for the small amount of cargo under consideration. This Center initiated two tests of the 24-hour delivery service of the U.S. Mail. The first package was a standard 10" x 15" in. envelope and arrived within 48 hours. The second was a package 8" x 12" x 12" that reached the team after seven days just prior to VCT-1's departure. Resupply by civilian passenger and cargo airlines was also investigated with negative results. ADAPCO Inc. of Orlando, Florida, stated that they could provide pesticides and equipment by sea within three days to the island of St. Croix. The capability of commercial pesticide and equipment distributors along with commercial air and surface cargo carrier to support future MMART operation needs to be assessed.

## C. Airlift Transportation

### 1. Air National Guard

In general, National Air Guard C-130's maintain an optimum of flexibility as to what they would ship and deviation from scheduled flight plans. The National Guard aircraft were not adverse to picking up "cargo and passengers of opportunity." During the deployment of VCT-1 they deviated from their scheduled flight path to drop the team at Roosevelt Roads rather than San Juan. The Maryland Air Guard flight to deploy VCT-1 was arranged and coordinated through National Guard Air Operation at Andrews AFB.

### 2. Dedicated Air Force Aircraft

All Air Force MAC, QUICKTRANS, and LOGAIR aircraft followed the rules and regulations in excruciating detail. The Air Force aircraft often have onboard load masters and insisted on the utilization of 463-L pallets and strict adherence to hazardous cargo regulations. The Air Force C-5 from the 105 MAG out of Stewart, N.Y. was arranged by CINCLANTFLT Transportation Office.

### 3. NALO Airlift Requests

Requests were put in for NALO flights for both the Roosevelt Roads and St. Croix deployments. Flight requests must be made by message to NAVAIRLOGOFF New Orleans, LA, and take at least 72 hours. NALO flights often utilize C-12 aircraft which are adequate for passengers, but have little cargo capacity. A large number of requests with higher priority prohibited the utilization of NALO during the Hugo disaster relief effort.

## D. MMART Pesticides

### 1. Bulk MMART Pesticides

The shipping of three 55 gallon drums of malathion from DLA Memphis, TN, by truck took approximately 48 hours. Shipping could only be done to CONUS military bases where the customer would bear the responsibility of making arrangements for packing, certification, and air shipment to its final destination. Efforts need to be pursued to stage MMART bulk pesticides nearer the Echelon 4 commands (i.e., DSRG Richmond, VA) with a 12-24 hour delivery time to the point of departure. Onsite funding of local pesticides and equipment by the deployed VCT also needs to be explored.

## 2. NA1993 Class Pesticides (Cargo Aircraft Only)

All MMART pesticides with this classification need to be reviewed for possible deletion as MMART items. A situation could develop where a deployed team would be separated from its gear because a load master refused an NA1993 item. An example of this problem is that Dursban 4E, SSN 6840-00-402-5411, comes from two manufacturers, one formulation includes a "trace of xylene" and is DOT regulated for "Cargo Aircraft Only," the other formulation is not restricted and can be transported with passengers. In the deployment to St. Croix the three 55-gal. drums of malathion were shipped with the VCTs, however, a 5-gal. pail of Dursban 4E manufactured by SMC could not. (See Attachment A)

## 3. Shipping of Hazardous Material DD Form 1387-2

In addition to pesticides - aerosols, wet cell batteries, motor oil, lantern fuel, fuel tanks, pesticide tanks, etc. are all consider hazardous items for air shipment and must be packed and certified prior to loading. Each of these items MUST have A DD Form 1387-2 SPECIAL HANDLING DATA/CERTIFICATION document prior to air shipment. These certificates can come only from qualified packers at installation NSC.

## 4. MMART Logistic and Support Training

Future MMART drills by this Center will include phone contact and visits by Center personnel to familiarize them with the location and personnel located at the following activities:

CINCLANTFLT Transportation	AV 564-6865/6852
National Guard Air Operations	AV 858-6001/2/3/4
DOMS	AV 227-2696
FEMA Region 1	(C) (202) 696-2993
NAS JAX Air OPS	x 2511
NAS JAX Passenger Terminal	x 3827
NAS JAX Air Cargo Terminal	x 2537
NSC JAX 24 hour number	x 2656/7/8
NSC JAX Customer Service	(C) (904) 779-3000
NSC JAX Trans. Bldg. #110	x 3559
NSC JAX Packing & Cert.	x 3105
NSC JAX Receiving	(C) (904) 772-5060
NSC JAX QUICKTRANS Term.	(C) (904) 772-2300

MILITARY AIRLIFT REGULATIONS FOR SPECIFIED PESTICIDES

NSN's NOT REGULATED FOR TRANSPORT ABOARD MILITARY AIRCRAFT

6840-00-242-4217  
6840-00-242-4219  
6840-00-400-2140  
6840-01-151-4884  
6840-01-183-7244

6840-00-402-5411

Trade Name: Dursban 4-E; Dursban (R) 4E Insecticide  
Manufacturer: Ford's Chemical & Service, Inc.; Dow Chemical Co.  
Issue: 5 gal. cn.  
Proper Shipping Name: CHLORPYRIFOS  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S Group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restriction: None  
Reportable Quantity: 1 pound

Trade Name: Dursban 4E; Dursban N  
Manufacturer: Southern Mill Creek Products, Inc.; Dow Chemical Company  
Issue: 5 gal. cn. (DOT 17C)  
Flash Point: 84 F; 85 F  
Proper Shipping Name: ORGANOPHOSPHORUS PESTICIDE LIQUID, N.O.S.  
Hazard Class: Flammable Liquid  
Label: Flammable Liquid  
ID No.: UN 2784  
L/S Group: 18 - Incompatible with L/S groups 1-7  
Packaging Paragraph: 6-6  
Aircraft Restrictions: Cargo Aircraft Only, DOT-E 7573

6840-00-655-9222

Trade Name: Excelcide Malathion Concentrate; Cythion  
Manufacturer: The Huge Co.; Hub States Corp.  
Issue: 1 gal. cn.  
Proper Shipping Name: MALATHION  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None

Enclosure (1)



6840-00-655-9222 (Cont'd)

Reportable Quantity: 10 pounds

Trade Name: Michlin Malathion EC-5  
Manufacturer: Michlin Diazo Products Corp.  
Issue: 1 gal. cn.  
Flash Point: 90 F  
Proper Shipping Name: INSECTICIDE, LIQUID, N.O. S.  
Hazard Class: Flammable Liquid  
Label: Flammable Liquid  
ID No.: NA 1993  
L/S Group: 18 - Incompatible with L/S Groups 1-7  
Packaging Paragraph: 6-6  
Aircraft Restrictions: None



6840-00-685-5438

Trade Name: Michlin Malathion EC-5  
Manufacturer: Michlin Diazo Products Corp.  
Issue: 5 gal. cn.  
Flash Point: 90 F  
Proper Shipping Name: INSECTICIDE, LIQUID, N.O.S.  
Hazard Class: Flammable Liquid  
Label: Flammable Liquid  
ID No.: NA 1993  
L/S Group: 18 - Incompatible with L/S Groups 1-7  
Packaging Paragraph: 6-6  
Aircraft Restrictions: None

Trade Name: O-I-565; Malathion 5 LB E.C.  
Manufacturer: Bought to Spec.; Baird and Mcguira, Inc.  
Issue: 5 gal. cn.  
Proper Shipping Name: MALATHION  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S Group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None  
Reportable Quantity: 10 pounds

6840-00-753-4961

Trade Name: DEET (Insect Repellent)  
Manufacturer: SANEX Chemicals, Inc.  
Issue: 2 oz bottle  
Flash Point: 73 F  
Proper Shipping Name: INSECTICIDE, LIQUID, N.O.S.  
Hazard Class: Flammable Liquid  
Label: Flammable Liquid  
ID No.: NA 1993

6840-00-753-4963 (Cont'd)

L/S Group: 18 - Incompatible with L/S Groups 1-7  
Packaging Paragraph: 6-6  
Aircraft Restrictions: None

Trade Name: Aerosol Insect Repellent  
Manufacturer: Aerosol Company, Inc.  
Not Regulated for Transport Aboard Military Aircraft

6840-00-753-5038

Trade Name: MIL-I-22772/Ships, Insecticide 2% Diazino  
Manufacturer: Bought to Spec.  
Issue: cn., 25 pounds  
Proper Shipping Name: DIAZINON  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S Group 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None  
Reportable Quantity: 1 pound

6840-00-926-1481

Trade Name: Cythion Insecticide  
Manufacturer: American Cyanamid Co.  
Issue: 55 gal. dr.  
Proper Shipping Name: MALATHION  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S Group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None  
Reportable Quantity: 10 pounds

6840-01-067-6674

Trade Name: Insecticide; Insecticide, D'Penothrin 2%  
Manufacturer: Aerosol Co.; Bulk Chemical Distributors  
Issue: 12 oz aerosol cn  
Proper Shipping Name: INSECTICIDE, LIQUIFIED GAS  
Hazard Class: Non-Flammable Gas  
Label: Non-Flammable Gas  
ID No.: NA 1968  
L/S Group: 21 - No compatibility restrictions  
Packaging Paragraph: 9-6, 9-8  
Aircraft Restrictions: None



6840-00-926-1481 (Cont'd)

Trade Name: Insecticide Aerosol D-Phenothrin 2½  
Manufacturer: ACCRA PAC, Inc.  
Issue: 12 oz aerosol cn  
Proper Shipping Name: COMPRESSED GAS, N.O.S.  
Hazard Class: Non-Flammable Gas  
Label: Non-Flammable Gas  
ID No.: UN 1956  
L/S Group: 21 - No compatibility restrictions  
Packaging Paragraph: 9-6, 9-8, 9-10  
Aircraft Restrictions: None

6840-01-169-1842

Trade Name: Cythion Insecticide  
Manufacture: American Cyanamid Co.  
Issue: 5 gal. cn.  
Proper Shipping Name: MALATHION  
Hazard Class: ORM-A  
Label: None  
ID No.: NA 2783  
L/S Group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None  
Reportable Quantity: 10 pounds

6840-01-203-6161

Trade Name: Dursban 1-5 ULV Mosquitocide  
Manufacturer: Clarke Outdoor Spraying Co.  
Issue: 5 gal. cn.  
Proper Shipping Name: CHLORPYRIFOS  
Hazard Class: ORM-A  
Label: None  
L/S Group: 28 - No compatibility restrictions  
Packaging Paragraph: 11-2  
Aircraft Restrictions: None  
Reportable Quantity: 1 pound



U.S. Department  
of Transportation  
Research and  
Special Programs  
Administration

400 Seventh Street, S.W.  
Washington, D.C. 20590

DOT-E 7573  
(THIRD REVISION)

11 7 1968

1. The Department of Defense (DOD), Falls Church, VA. is hereby granted an exemption from certain provisions of this Department's Hazardous Materials Regulations to offer hazardous materials described herein for transportation in air commerce subject to the limitations and special requirements specified herein. This exemption provides no relief from any regulation other than as specifically stated.



2.  BASIS. This exemption is based on the DOD's application dated March 29, 1968, submitted in accordance with 49 CFR 107.105 and the public proceeding thereon.

3.  HAZARDOUS MATERIALS (Descriptor and class). Aircraft loaded with military explosives and ammunition - classed as explosives A, B, or C and other hazardous materials which are either not authorized to be shipped by cargo aircraft only, or are in quantities greater than those authorized in 49 CFR 172.101 for cargo aircraft only.

4.  PROPER SHIPPING NAME (49 CFR 172.101). The proper shipping name for each hazardous material as prescribed in Section 172.101.

5.  REGULATION AFFECTED. 49 CFR Subpart B of Part 107, Part 172 and 175.

6.  MODE OF TRANSPORTATION AUTHORIZED. Cargo aircraft only.

7.  SAFETY CONTROL MEASURES.

a.  Authorized Hazardous Materials. Hazardous materials authorized by this exemption are limited to materials authorized to be transported by common carrier by motor vehicles in conformance with 49 CFR Parts 107 and 171-179.

b.  Authorized Airports.

(1) Transport of materials authorized by this exemption is restricted to U.S. military bases and the herein named civil airports. The DOD must have advance permission from the owner or operator of each civil airport where the material is to be loaded or unloaded or where the aircraft is to land while the material is on board.

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(2) Civil airports presently authorized for scheduled LOGAIR/QUICKTRANS air routes:

Charleston International Airport (Charleston AFB),  
Charleston, South Carolina;

Cheyenne Municipal Airport (Francis Z. Warren AFB),  
Cheyenne, Wyoming;

Bangor International Airport, Bangor, Maine;

Duluth International Airport, Duluth, Minnesota;

Albuquerque International Airport (Kirtland AFB),  
Albuquerque, New Mexico;

Walt-Cook International Airport, Indianapolis, Indiana;

Potterson Field, Colorado Springs, Colorado.

(3) When the destination is changed after departure because of weather or other unforeseen circumstances, permission from the owner or operator of the alternate airport shall be obtained as soon as practicable.

c. Loading and Stowage of Materials.

- (1) Loading and stowage of military explosives (including ammunition) and other hazardous materials aboard air craft shall be in accordance with procedures specified in Air Force Regulation (AFR) 71-4. All loading and unloading operations under this exemption shall be monitored by a qualified DGD representative or a technician qualified in accordance with 14 CFR 121.433a or AFR 71-4 to ensure compliance with the prescribed procedures of AFR 71-4.
- (2) During loading and unloading, no person may smoke, carry a lighted cigarette, cigar or pipe, or operate any device capable of causing an open flame within 50 feet of the aircraft.
- (3) Unless emergency conditions prescribe otherwise, the loading and unloading of the aircraft shall be conducted at a safe distance from heavily populated areas, and from any place of human abode or assembly. However, at an airport where the airport owner, operator or authorized representative thereof has designated a specific location for loading or unloading, explosives may not be loaded or unloaded at any other location.

d. Operational Requirements.

- (1) Operation of the aircraft during take-off, enroute, and landing must be conducted at a safe distance from heavily populated areas.
  - (a) Before movement of the aircraft prior to take-off, the pilot of the aircraft shall notify the control tower of the class(es) of explosive(s) (including ammunition) on board.
  - (b) The pilot of the aircraft, prior to entering an airport traffic area, shall notify the control tower of the class(es) of explosive(s) (including ammunition) on board and request this information be relayed to the appropriate airport officials.
  - (c) When under radar control during the approach and landing phase, the pilot shall request appropriate vectors so as to avoid heavily populated areas.
- (2) No persons other than required flight crew members and mission essential personnel may be carried on the aircraft. Prior to take-off, all crew members will be instructed in proper procedures to be followed during an emergency involving hazardous materials.
- (3) No fueling operations of the aircraft may be conducted during the loading and unloading of explosives.
- (4) Fuel tanks of vehicles may not be filled to more than 75% of their capacity.

8. SPECIAL PROVISIONS.

- a. This exemption applies only to transportation in air commerce of explosives and other hazardous materials deemed essential to national defense via DOD contract airlift services and civil air operators under contract to the Military Airlift Command (MAC).
- b. Prior to its use, approval for use of this exemption must be obtained from either the Deputy Chief of Staff, Air Transportation MAC; the Director of Transportation, Air Force Logistics Command; the Naval Material Transportation Office; or their authorized representatives.



#### SUMMARY

The success of any deployment is, to a great extent, a direct reflection of the enthusiasm and capabilities of its supporting elements. A decisively pro-active stance by the staff of NAVDISVECTECONCEN Jacksonville was the key to the success of these three deployments. The staff took the initiative by establishing communications and maintaining daily contact with each team and NAVENVIRHLHCEN. These efforts involved late hours and weekends and supplied much critical information. A high level of resourcefulness, tact, and persistence was demonstrated by the support staff as it examined and explored the feasibility of numerous logistic and transportation alternatives. This superlative staff support significantly contributed to the success of all three teams by having the right information or right material at the right place and time.

# APPENDICES