



DEPARTMENT OF THE NAVY

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511-6287

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IN REPLY REFER TO:

11320  
09RF  
26 MAR 1987

From: Commander, Atlantic Division, Naval Facilities Engineering Command  
To: Commandant of the Marine Corps  
Via: Commanding General, Marine Corps Base, Camp Lejeune

Subj: COMMAND INSPECTION OF FIRE SUPPRESSION AND PREVENTION SERVICES AT  
MARINE CORPS BASE, CAMP LEJEUNE

Ref: (a) MCO P11000.1A  
(b) NAVMATINST 11320.12A of 6 Jan 1981, Subj: Fire Marshal Program

Encl: (1) Command Inspection of Fire Suppression and Prevention Services  
at Marine Corps Base, Camp Lejeune

1. Pursuant to the requirements of references (a) and (b), the Atlantic Division, Naval Facilities Engineering Command Area Fire Marshal staff conducted subject inspection with the following results contained in enclosure (1):

Evaluations:

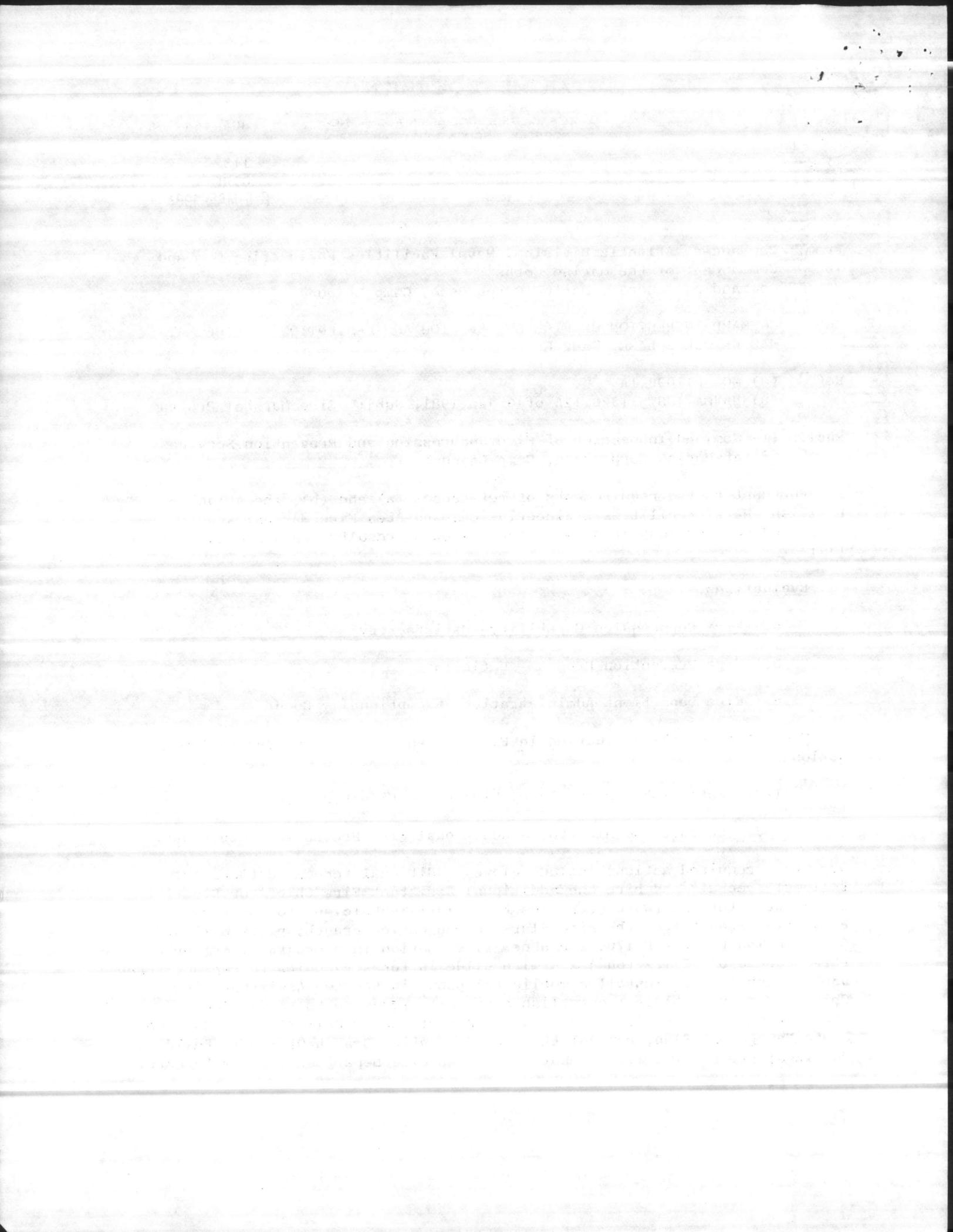
- a. Fire Suppression Capability- Satisfactory
- b. Fire Prevention Program- Deficient
- c. Fire Department Administration- Exceptionally Good

2. Correction of the evaluation in Fire Prevention requires the following actions:

1-87 Establish a supervisory Fire Prevention Position.

2-87 Recruit and hire three additional Fire Prevention Inspectors.

3. Other required actions include eleven additional recommendations as follows: recruit and hire one additional Assistant Fire Chief for District No. 2; transfer the two electronics Fire Alarm Technicians to the Fire Prevention Branch from the Fire Alarm Communication Branch; place Military Construction Project P-170, for a new fire station in a program year; procure three Code 0905, 1 1/2 ton 4 x 4 with slide in forestry units to replace three 530B, Brush Trucks; install a mobile telephone in the two Assistant Fire Chief's Command vehicles; establish a priority sequence to remove PCB transformers from the Activity; publish a contingency Spill/Oil and Hazardous Waste Management Plan; remodel the Fire Prevention Branch Office in Building No. 1203; procure two microcomputers for the Fire Department; place forestry

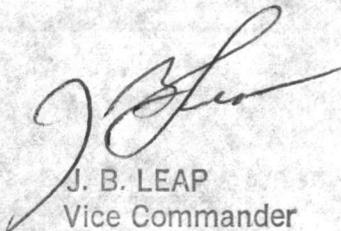


Subj: COMMAND INSPECTION OF FIRE SUPPRESSION AND PREVENTION SERVICES AT  
MARINE CORPS BASE, CAMP LEJEUNE

fire plows under the direct control of the Forestry Officer or Fire Chief instead of Base Maintenance; and rewrite and reclassify the Fire Chief Position and all GS-4 Fire Fighter Positions.

4. The Commanding General, Marine Corps Base, Camp Lejeune is requested to comment on each inspection recommendation indicating action taken or proposed, and to state reasons for any nonconcurrence. It is requested that copies of all endorsements be furnished the originator, endorsees and information addressees.

5. Expeditious handling of the report is requested so that decisions and corrective action may be effected with the least possible delay.



J. B. LEAP  
Vice Commander

Copy to:  
NAVSAFECEN (Code 44)  
NAVFACENCOM (Code 10F)

STAFF OFFICERS REPORT ON FIRE SUPPRESSION AND PREVENTION SERVICES AT  
MARINE CORPS BASE, PEARL AND HERMES REEF

The above report is a direct result of the request of the Chief  
of Base Administration, and to the end of providing the Chief  
with information on all fire fighting positions.

The Commanding General, Marine Corps Base, Camp Lejeune is requested to  
comment on each inspection recommendation indicating action taken or proposed  
and to include reasons for any non-compliance. If it is requested that copies of  
all documents be furnished the original, address and information  
additional.

Additional handling of the report is requested so that details and  
corrective action may be effected with the least possible delay.

WAWACINCOG (Code 102)  
WAWACINCOG (Code 102)

COMMAND INSPECTION OF FIRE SUPPRESSION  
AND PREVENTION SERVICES

MARINE CORPS BASE  
CAMP LEJEUNE, NORTH CAROLINA

5 - 16 JANUARY 1987

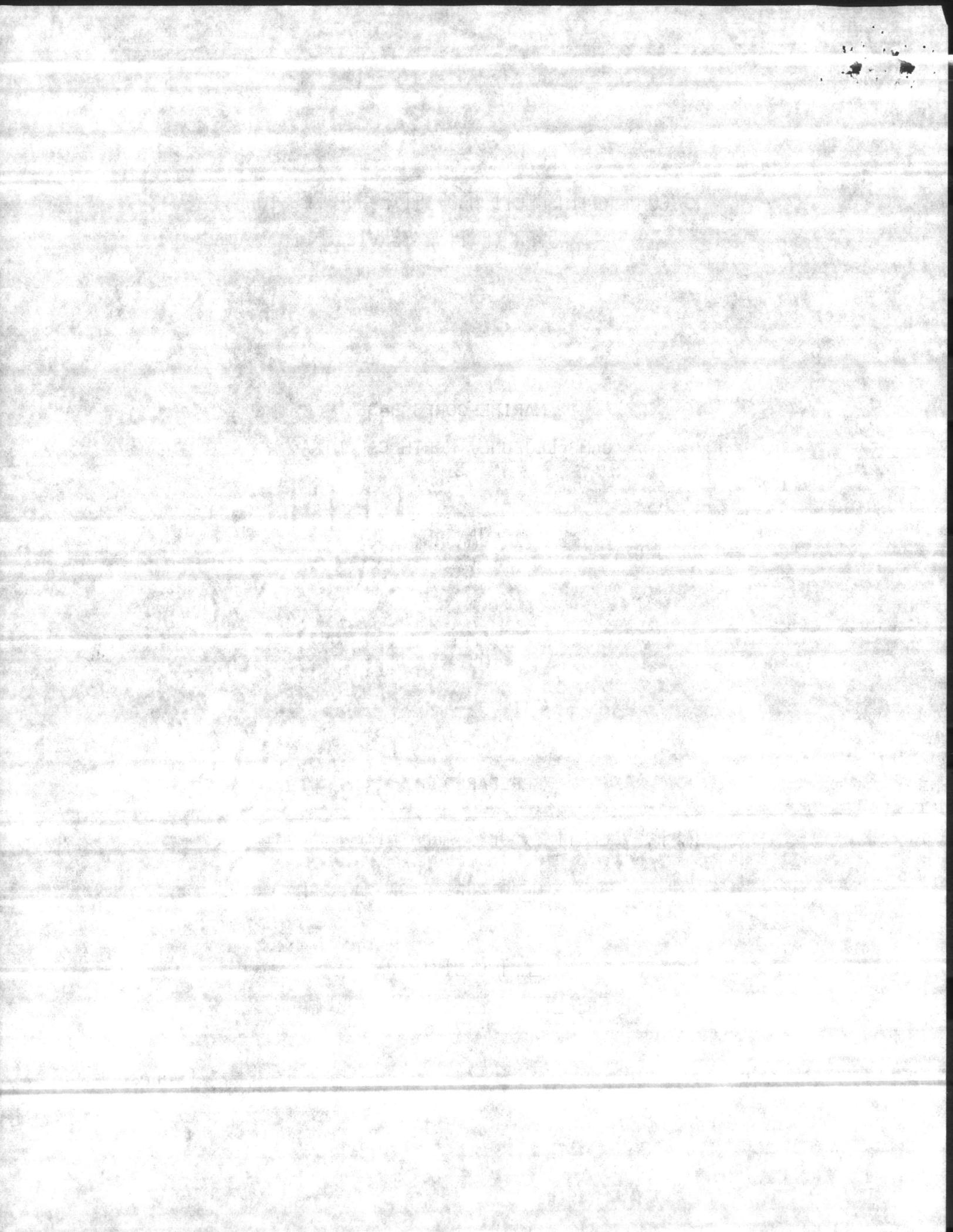
PREPARED BY:

R. F. VALENTINE, JR., AREA FIRE MARSHAL

C. A. ROUT, HEAD AREA FIRE MARSHAL

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND

ENCLOSURE (1)



COMMAND INSPECTION OF FIRE SUPPRESSION  
AND PREVENTION SERVICES

- I. FIRE DEPARTMENT: Marine Corps Base, Camp Lejeune, North Carolina
- II. SHORE INSTALLATIONS SERVED BY FIRE DEPARTMENT: Marine Corps Base, Camp Lejeune, North Carolina, Marine Corps Air Station, New River
- III. INSPECTION DATES: Current: 5 - 16 January 1987  
Previous: 28 November - 9 December 1983
- IV. FACILITY CONDITIONS:

The Marine Corps Base, Camp Lejeune is located on both sides of New River, between the Atlantic Ocean and the City of Jacksonville, North Carolina. The Activity is bounded by U.S. Highway 17 on the west, U.S. Highway 24 on the north/northeast and the Atlantic Ocean on the south/southeast. Camp Lejeune has a perimeter of 68 miles, with 14 miles of Oceanfront parallel to the Intercoastal Waterway. The Military Reservation covers 109,047 acres, of which 26,000 acres are water.

Construction of Camp Lejeune started in 1941. The Activity is composed of the main camp at Hadnot Point, a rifle range, Camp Geiger, Camp Johnson and, located within the boundaries of the Camp, the Marine Corps Air Station, New River. There are 4,565 housing units located in various areas of the Reservation. In addition to providing all maintenance, fire protection, water purification, police protection and other services normal to a city of over 100,000, the Base also administers its own school system under the Department of Health, Education and Welfare. Annual enrollment is approximately 3,200 pupils.

The Activity has a two-phase mission. The first phase is to provide housing, training facilities and logistical support for the Fleet Marine Force and other units assigned. The second phase is to conduct specialized training as directed. This includes over 50 courses ranging from entry level skill training, for newly graduated recruits, to professional and technical career enhancement courses for NCO's, SNCO's and officers.

Combustible interior finish is prevalent in virtually all buildings (with exception of those buildings recently constructed). A large number of buildings contain deficient exit facilities. Nearly all of the multi-story buildings lack a second means of egress from the upper floors, as required by current DOD and Marine Corps criteria. Projects have been developed to correct these deficiencies, as addressed in the Fire Protection Engineering Survey Reports of 30 August 1985, 31 May 1985 and 30 March 1985.

Automatic sprinkler protection is provided in a portion of the industrial warehouses and is being included, where required, in new construction. A sizeable number of buildings (primarily warehouses), however, lack necessary

COMMAND INSPECTION ON FIRE SUPPRESSION  
AND PREVENTION SERVICES

- IV. FIRE DEPARTMENT: Marine Corps Base, Camp Lejeune, North Carolina
- 11. SHORE INSTALLATIONS SERVED BY FIRE DEPARTMENT: Marine Corps Base, Camp Lejeune, North Carolina, Marine Corps Air Station, New River
- III. INSPECTION DATES: Current: 10 January 1987  
Previous: 28 November - 9 December 1985

IV. FACILITY CONDITIONS:

The Marine Corps Base, Camp Lejeune is located on both sides of New River, between the Atlantic Ocean and the City of Jacksonville, North Carolina. The facility is bounded by U.S. Highway 17 on the west, U.S. Highway 24 on the north, and the Atlantic Ocean on the south. The facility has a perimeter of 18 miles with 11 miles of perimeter parallel to the Intracoastal Waterway. The Military Reservation covers 119,044 acres of which 26,000 acres are water.

Inspection of Camp Lejeune started in 1981. The activity is composed of the following: Camp Lejeune, Camp Geiger, Camp Johnson and Camp Pendleton. Located within the boundaries of the Camp, the Marine Corps Air Station, New River, there are 400 housing units located in various areas of the Reservation. In addition to providing all maintenance, fire protection, water supply and other protection and other services normal to a military base, 100,000 the Base also administers its own school system under the Department of Health, Education and Welfare. Annual enrollment is approximately 3,200 pupils.

The activity has a two-phase mission. The first phase is to provide housing, training, medical and logistical support for the Fleet Marine Force and other units assigned. The second phase is to conduct specialized training as directed. This includes over 50 courses ranging from entry level skills training for newly graduated recruits to professional and technical courses for officers and other personnel.

Responsible for the fire protection is provided in virtually all buildings with exception of those buildings recently constructed. A large number of buildings lack a second means of egress and the fire alarm system is not working. Buildings lack a second means of egress and the fire alarm system is not working. Buildings lack a second means of egress and the fire alarm system is not working. Buildings lack a second means of egress and the fire alarm system is not working.

Automatic fire protection is provided in the majority of the buildings. A fire alarm system is being installed in the buildings. However, lack of necessary number of fire alarm control units is a problem.

sprinkler protection. The high monetary value of the storage within the nonsprinklered buildings creates a large loss potential. These deficiencies are addressed in the Fire Protection Engineers report of 31 May 1985.

A vast expansion of the French Creek area was started in FY-83 and is expected to continue up through FY-89. The required travel distances/response time for structural fire companies to this area can not be met from Fire Station No. 5 located in the Industrial Area. MCON Project P-170, replacement fire station to be located near the west entrance of French Creek at Main Service Road and Gonzalez Boulevard, is presently in an unprogrammed year. Every effort should be made to get Project P-170 in a program year to allow the present Fire Station No. 5 to be closed. From this new location, travel distance/response times for structural fire companies can be met for the Industrial Area as well as the current proposed new construction of the French Creek area. This is a repeat deficiency addressed in the previous inspection report.

The Activity has 19 tactical landing zones (TLZ) as well as brush fire fighting requirements. These requirements are accomplished by cross-manning brush trucks from the structural pumpers. Tactical landing zone helicopter operations take place in heavy wooded areas. The locations of these TLZ's require unique fire fighting tactics. The three 530B gpm brush trucks are located at Fire Station Nos. 5, 6 and 7. Two 3/4-ton, 4 x 4 special forestry units are housed at Fire Station Nos. 5 and 1 and cross-manned by personnel from Engine Companies Nos. 5 and 1.

To improve efficiency and reduce cost, the three 530B gpm brush trucks should be replaced with three Code 0905 1 1/2-ton 4 x 4's with a slide in forestry unit. These type vehicles and the slide in package can be replaced separately and are cheaper to replace than a standard brush/structural fire truck.

The dedicated forestry fire plows are managed by Base maintenance personnel. Unfortunately, this arrangement allows these plows to be used for other functions and delays are experienced in getting the plows to the fire scene. Additionally, the plows are not always in the best of condition. We believe the Forestry Officer or Fire Chief, should manage these plows to ensure that when needed they are ready and available, with qualified operators.

The prescribed Forestry burning program that has been implemented in the last 18 months has significantly reduced the number of forest fires.

As the primary source for water rescue on Base (approximately 26,000 acres of water), the Fire Department maintains a 17-foot rescue boat with a 110-horsepower outboard motor as well as other necessary water rescue equipment. The rescue boat is manned, when required, by two personnel from Engine Company No. 1.

All of the PCB transformers on the station have been identified and a listing has been provided to the Fire Department and the mutual aid companies. A priority sequence needs to be established for removal of these transformers.

The Fire Department is being tasked to respond to hazardous substance spills without a clear tasking of their role or the authorization to adequately fund and train for these emergencies. A pollution control, oil and hazardous substance contingency plan that clearly spells out various roles and responsibilities will enable standardization and development of a fire department plan of action for necessary procedures, funding and training.



A serious deficiency exists in the Fire Prevention Program. This is a repeat deficiency and is readdressed in this report as follows:

During a reorganization in 1981, the supervisory fire prevention inspector was reduced in grade and changed to a work leader. The lack of a fire prevention supervisor has had a degrading effect on the over all fire prevention program. There are six fire inspectors, one public education specialist, and one sprinkler mechanic assigned to this branch. The volume of inspections, the public education effort, and the testing and repair of the installed sprinkler systems, require constant coordination and review to insure delivery of an effective fire prevention program. Due to his other many duties the Deputy Fire Chief, who currently is the first line supervisor for this branch, cannot effectively manage the day to day fire prevention program. The re-establishment of the supervisory fire prevention inspector's position is required. Presently, the work leader must have the Deputy Fire Chief approve simple things like leave, etc. This is further compounded by locating the Fire Inspectors and Deputy Fire Chief in separate buildings approximately 3 miles apart.

New construction since the previous inspection has increased the inspectable space by 1,297,578 sq ft. Thus, requiring nine Fire Prevention Inspectors and one dedicated Public Education Specialist to establish an effective fire prevention and public education program.

The distance between fire stations will not permit a single district concept. A serious supervisory problem exists in District No. 2 where there is only one Assistant Fire Chief assigned. This leaves one platoon without a senior fire officer assigned. The Assistant Fire Chief is required to respond to all alarms and is expected to meet the time and distance of the second 50 percent of standard travel distances/response times for structural fire companies. Under the present system, this response time cannot be met and has a direct impact on fire suppression operations. Diverting the Fire Chief, Deputy Fire Chief or the Training Officer to Assistant Fire Chief duties degrades the fire administration and training program beyond a reasonable acceptance of risk. When more than one fire company is involved without an Assistant Fire Chief, the Engine Company and truck Fire Captains cannot effectively supervise and direct fireground operations. All assigned fire companies are at minimum staffing requirements, and when personnel are required to perform the Assistant Fire Chief's duties this reduces engine and truck companies staffing to an unacceptable level.

The following are time and distances from the fire stations under normal driving conditions (after evening rush-hour traffic):

From Fire Station No. 2 to Fire Station No. 7 - 22 minutes, 13.1 miles. From Fire Station No. 10 to Fire Station No. 8 - 30 minutes, 19.1 miles. From Fire Station No. 1 to Fire Station No. 3 - 32 minutes, 15.5 miles. From Fire Station No. 5 to Fire Station No. 10 - 28 minutes, 20.2 miles. From Fire Station No. 6 to Fire Station No. 4 - 20 minutes, 11.5 miles.

(It is not uncommon to have multiple alarms at this large Activity.)

In CY-86 the Fire Department responded to 2,672 alarms.

A serious deficiency exists in the Fire Prevention Program. This is a report  
deficiency and is addressed in this report as follows:

In the reorganization in 1981, the supervisory fire prevention inspector was  
removed in grade and changed to a work leader. The lack of fire prevention  
supervisor has had a degrading effect on the overall fire prevention  
program. There are six fire inspectors, one public education specialist, and  
one specialist mechanic assigned to this branch. The volume of inspections,  
the public education effort, and the testing and repair of the installed  
sprinkler systems, require constant coordination and review to insure delivery  
of an effective fire prevention program. Due to his other many duties the  
Deputy Fire Chief, who currently is the fire prevention supervisor for this branch,  
cannot effectively manage the day to day fire prevention program. The  
re-establishment of the supervisory fire prevention inspector position is  
required. Presently, the work leader must have the Deputy Fire Chief approve  
simple things like leave, etc. This is further compounded by locating the  
fire inspectors and Deputy Fire Chief in separate buildings approximately  
miles apart.

New construction since the previous inspection has increased the residential  
rate by 1,200,000 sq. ft. This requires more fire prevention inspectors and  
one dedicated public education specialist to establish an effective fire  
prevention for the public education program.

The distance between fire stations will not permit a single district response.  
A serious supervisory problem exists in District No. 2 where there is only one  
Assistant Fire Chief assigned. This leaves one station without a station fire  
officer assigned. The Assistant Fire Chief is required to respond to all  
alarms and is expected to meet the time and distance of the second 90 percent  
of stations as well as necessary response times for structural fire companies.  
Under the present system, this response time cannot be met and has a direct  
impact on the suppression operations. Diverting the Fire Chief, Deputy  
Fire Chief or the Training Officer, Assistant Fire Chief, or other duties from  
fire suppression and training poses a serious risk to the public.  
risk when more than one fire company is involved with an Assistant Fire  
Chief, the engine company and truck fire company, would effectively answer  
and direct the ground operations. Assigning fire companies to a minimum  
staffing requirements and when personnel are reported to the fire scene  
Assistant Fire Chief's duties this reduces engine and truck company staffing  
to an unacceptable level.

The following are time and distance from the fire scene under normal  
driving conditions (after evening rush hour traffic):  
From Fire Station No. 2 to Fire Station No. 1 - 22 minutes, 13.1 miles.  
From Fire Station No. 1 to Fire Station No. 3 - 18 minutes, 11.2 miles.  
From Fire Station No. 3 to Fire Station No. 4 - 20 minutes, 11.1 miles.  
From Fire Station No. 4 to Fire Station No. 5 - 20 minutes, 11.1 miles.

(It is not uncommon to have multiple alarms at this large facility.)  
In City of ... the plant was reported to ...

Since the previous inspection, the fire alarm system at the Air Station has been replaced by a radio fire alarm system. A dedicated Fire Department Training Officer has been hired. Five new 1000 gpm triple combination pumpers and a new 110 foot aerial ladder truck have been placed in service.

The A-1 structural Fire Protection Classification for Marine Corps Base Camp Lejeune is the highest that can be assigned.

ATTACHMENT A, Pages 1-7, display Fire Station locations, organization, staffing requirements and fire fighting vehicles. ATTACHMENT B displays structural classification, water flow requirements, mutual aid, fire loss data, and financial summary.

V. SUMMARY OF FIRE DEPARTMENT ORGANIZATION AND OPERATIONS:

A. Suppression operations: The Fire Department is a division of the Assistant Chief of Staff, Facilities. The Department operates nine manned 1000 gpm triple combination structural pumpers and one 110 foot manned aerial ladder (truck company), with four personnel each. An engine company is located at each of the following areas: the Air Station; Hadnot Point; Paradise Point; the Industrial Area; Camp Geiger; Courthouse Bay; Camp Johnson; Rifle Range; and Midway Park which also houses the aerial ladder. Although the nine stations only have one engine company each, normal response is two engine companies. The following is a breakdown of engine company responses to meet the first and second 50 percent of response. These actions enable meeting distance and time requirements, except in the French Creek area. (When required, mutual aid companies fill in for vacant fire stations.): (See ATTACHMENT A, Page 1 for Fire Station locations.)

TIME AND DISTANCES FOR STRUCTURAL ENGINE COMPANIES

	<u>1st 50 Percent</u>	<u>2nd 50 Percent</u>
Midway Park	Eng Co. No. 2	Eng Co. No. 4
Tarawa Terrace	Eng Co. No. 2	Eng Co. No. 8
Regimental Area Up to French Creek, the old Medical Center and	Eng Co. No. 3	Eng Co. No. 5
Paradise Point		
Paradise Point	Eng Co. No. 4	Eng Co. No. 3
Berkeley Manor and		Eng Co. No. 3
New Hospital		Eng Co. No. 2
Industrial Area and French Creek Area	Eng Co. No. 5	Eng Co. No. 3
Camp Geiger	Eng Co. No. 6	Eng Co. No. 1
Courthouse Bay and Onslow Beach	Eng Co. No. 7	Eng Co. No. 10
		Eng Co. No. 5

Since the previous inspection, the fire alarm system at the Air Station has been replaced by a radio fire alarm system. A dedicated fire department training officer has been placed, three new 1000 gpm engine combination pumps have been placed in service and four aerial ladders have been placed in service.

The A-1 structural fire protection classification for Marine Corps Base Camp Lejeune is the highest that can be assigned.

ATTACHMENT A, Pages I-V analyze fire station locations, organization, staffing requirements and fire fighting vehicles. ATTACHMENT B displays structural classification, water flow requirements, actual and flow data and financial summary.

SUMMARY OF FIRE DEPARTMENT ORGANIZATION AND OPERATIONS:

A suppression operation. The fire department is a division of the Assistant Chief on Staff. Facilities. The department operates nine manned 1000 gpm engine combination structural pumps and one 110 foot manned aerial ladder (engine company), with four personnel each. An engine company is located at each of the following areas: the Air Station, Hadnot Point, Marine Point, the Industrial Area, Camp Geiger, Courthouse Bay, Camp Lejeune, Rifle Range, and Highway 170. A tank with a 1000 gallon capacity is located at the Rifle Range. Although the fire stations only have one engine company each, normal response is two engine companies. The following is a breakdown of engine company response to the fire, and 50 percent of a response. These stations include meeting the minimum time requirements, except in the branch area area (when required) and companies fill in for vacant fire stations. (See Attachment A for fire station locations.)

ENGINE AND DISTRICTS FOR STRUCTURAL ENGINE COMPANIES

1st 50 Percent	2nd 50 Percent
Hadnot Point Eng Co. No. 2	Eng Co. No. 1
Marine Point Eng Co. No. 2	Eng Co. No. 8
Industrial Area Eng Co. No. 3	Eng Co. No. 7
Courthouse Bay Eng Co. No. 4	Eng Co. No. 3
Rifle Range Eng Co. No. 5	Eng Co. No. 2
Highway 170 Eng Co. No. 6	Eng Co. No. 3
Hadnot Point Eng Co. No. 7	Eng Co. No. 1
Marine Point Eng Co. No. 8	Eng Co. No. 2
Industrial Area Eng Co. No. 9	Eng Co. No. 3
Courthouse Bay Eng Co. No. 10	Eng Co. No. 1
Rifle Range Eng Co. No. 11	Eng Co. No. 2
Highway 170 Eng Co. No. 12	Eng Co. No. 3

<u>1st 50 Percent</u>		<u>2nd 50 Percent</u>
Camp Johnson and Camp Knox Trailer Park	Eng Co. No. 8	Eng Co. No. 2
Rifle Range	Eng Co. No. 10	Eng Co. No. 7
Air Station	Eng Co. No. 1	Eng Co. No. 6

The truck company responds to all fire alarms.

The Fire Chief and all GS-4 fire fighter position descriptions need to be revised. It appears that these positions are undergraded. For instance, aircraft fire fighting, emergency medical technician and hazardous material responsibilities and duties are just a few items that are not included in these position descriptions.

There is a requirement to install mobile telephones in the two Assistant Fire Chief's vehicles. The Fire Department is starting to outfit and procure equipment to be able to respond to hazardous material incidents. They must have the capability to talk directly with manufacturers, and other sources of information during emergencies such as hazardous material incidents.

The Fire Department requires at least two microcomputers, one for Fire Prevention and one for the Fire Chief's office. The use of microcomputers would greatly enhance Fire Department record keeping and improve administrative productivity.

**B. Fire Prevention Program:** The fire prevention section conducts technical inspections of all major buildings, hazardous areas, and fixed extinguishing systems located in the Marine Corps Base Complex and the Embarkation-Debarcation facility at Morehead City, North Carolina. Personnel from the engine companies and truck company inspect low hazard buildings, family quarters and residential smoke detectors. A fire prevention inspector conducts an inspection of these low hazard facilities annually.

The sprinkler mechanic works out of the Fire Prevention office and the fire alarm technicians work out of the Fire Alarm Communications office. They conduct regular inspections of fire alarm systems, fixed fire extinguishing systems, weigh fixed CO<sub>2</sub> system cylinders, and make repairs. The preventive maintenance program is in accordance with NAVFAC MO-117.

The two electronic Fire Alarm Technicians need to be under the Fire Prevention Branch. This would create one focal point for all maintenance and testing of all installed fire protection systems.

The public education program consists of fire hazard awareness lectures, fire extinguisher training, and fire evacuation drills. These training classes and lectures are given to various Marine Units, new civil service and exchange employees and various civic groups. Training classes include the use of training aids such as handout material, films, and slide presentations. The Base cable TV, Channel 12 is used for fire prevention programs. This is an excellent resource and should be expanded for better utilization.

and 50 Percent

and 50 Percent

Eng. Co. No. 2

Eng. Co. No. 8

Company Station

Eng. Co. No. 1

Eng. Co. No. 10

Public Station

Eng. Co. No. 3

Eng. Co. No. 1

Public Station

The truck company responds to all fire alarms.

The fire chief and all 62 fire fighters position descriptions are to be revised. It appears that these positions are understaffed. For instance, all fire fighters, emergency medical technicians and hazardous materials responders are not included in the list of positions that are not included in these position descriptions.

There is a requirement to install mobile telephones in the two Assistant Fire Chief's vehicles. The Fire Department is planning to outfit and procure equipment to respond to hazardous materials incidents. They must have the capability to talk directly with manufacturers and other sources of information regarding a hazardous material incident.

The fire department requires at least two microcomputers for the fire chief and for the fire chief's office. The use of microcomputers would greatly enhance the department's record keeping and improve administrative productivity.

8. Fire Prevention Program: The fire prevention section conducts technical inspections of all major buildings, hazardous areas, and fixed extinguishing systems located in the Marine Corps Base, Quantico and the Quantico Detachment Facility at Northampton City, North Carolina. Personnel from the engine companies and truck company inspect low hazard buildings, fire hydrants and residential smoke detectors. A fire prevention inspection could be conducted in these low hazard facilities quarterly.

The Quantico Fire Alarm Technician works out of the fire prevention office and the fire alarm technician works out of the fire alarm office. They conduct routine inspections of fire alarm systems, fixed fire extinguishing systems, weight fixed CO2 system cylinders, and make repairs. The preventive maintenance program is in accordance with NFPA 72, NO. 1A.

The Quantico Fire Alarm Technician need to be under the Fire Prevention Branch. This would create one local point for all maintenance and testing of all installed fire protection systems.

The public education program consists of fire awareness classes, fire extinguisher training, and fire evacuation drills. These training classes and lectures are given to various Marine units, new civil service and exchange employees and various civic groups. Training classes include the use of training aids such as burnout material, fires, and all the present training aids. The program is a need for a prevention program. There is an excellent amount of material to be expanded for better utilization.

In order to have a dynamic and effective education program, it is necessary to have a dedicated education specialist, to develop and maintain a good sound program.

The duty Assistant Fire Chief makes spot checks of places of public assembly during operating hours and at closing time to insure that management is complying with the Base Fire Prevention Regulations.

Fire Prevention personnel attend pre-construction conferences to provide guidance to contractors on Marine Corps Base Fire Prevention Regulations. Hot work areas are inspected and a permit system is in force to insure fire safe conditions regarding the use of open flame and other hot work processes.

Each organization assigns a military fire safety monitor to monitor the fire prevention practices in the assigned area of responsibility. These fire monitors conduct fire drills, fire safety checks in living quarters and work areas and coordinate local fire bills with the lead Fire Prevention Inspector. This program needs to be further developed and closely monitored by the Lead Fire Prevention Inspector. Fire Prevention Inspectors spend a great deal of time checking and signing portable fire extinguishers in all buildings. This function could be assigned to the fire safety monitor personnel in each building. This would allow the Fire Prevention Inspectors more time to conduct technical building inspections.

Fire Prevention Inspectors have attended National Fire Protection Association Fire Code Seminars off station, and are scheduled for additional training in Hazardous Materials Identification.

C. Training Program: The training program has improved dramatically since the previous inspection. A dedicated, full-time Training Officer's position was established and filled in September 1986. The Training Officer has developed a comprehensive and aggressive training program. The Training Officer's Office and Classroom are located in Fire Station No. 6 at Camp Geiger.

A monthly training schedule is prepared and posted in all fire stations. Each Fire Captain maintains a training log of all in-house training for his shift and training received is entered in the individual folder.

As required by Marine Corps Order (MCO), personnel are receiving training as Emergency Medical Technicians (EMT). This EMT program is about 80% complete.

Since the previous inspection, numerous training aids have been procured. The Fire Department has an excellent new training facility which includes a smoke, rescue and fire suppression building; a tower; a live burn pit; and a drafting pit.

## VI. EVALUATIONS:

A. Fire Suppression Capability: The fire suppression capability is SATISFACTORY, bordering on DEFICIENT. This evaluation is based on the need for one additional Assistant Fire Chief to provide required 24 hour supervision. Personnel are well trained and properly equipped with protective

In order to have a dynamic and effective education program, it is necessary to have a dedicated educational specialist to develop and maintain a good working relationship with the fire prevention program.

The only way to insure the effectiveness of public education is to have a dedicated educational specialist to develop and maintain a good working relationship with the fire prevention program.

The prevention personnel attend one or more fire prevention conferences to provide guidance to contractors on Marine Corps Base Fire Prevention Regulations. For work areas are inspected and a permit system is in force to insure fire safety conditions regarding the use of open flame and other hot work processes.

Each organization assigns a safety fire safety monitor to monitor the fire prevention practices in the assigned area of responsibility. These fire monitors conduct fire drills, fire safety checks in living quarters and work areas and coordinate local fire drills with the local fire department. This program needs to be further developed and closely monitored by the local fire prevention inspector. Fire prevention inspectors spend a great deal of time checking and signing permits for fire safety monitors. This function should be assigned to local fire safety monitors personnel in each building. This would allow the fire prevention inspectors to be more available to building occupants.

The fire prevention inspectors have attended National Fire Protection Association (NFPA) Code Seminars for fire prevention and are scheduled for additional training in hazardous materials identification.

The training program for the fire prevention program has improved significantly since the previous inspection. A detailed training program for fire prevention personnel was established and listed in September 1988. The Training Officer has developed a comprehensive and effective training program. The Training Officer's Office and Classroom are located in Fire Station No. 1, Camp Colorado.

A monthly training schedule is prepared and posted in all fire stations. Each fire station maintains a training log of all in-house training for fire safety and training records are entered in the individual records.

As required by Marine Corps Order (MCO), personnel are receiving training in Emergency Medical Technicians (EMT). This EMT program is about 80% complete.

Since the new fire suppression training and have been completed. The fire department has an excellent new training facility which includes a smoke room and fire suppression training; a forest fire simulator; and a training pit.

## VI EVALUATION

A Fire Suppression Capability: The fire suppression capability is satisfactory, however, a DIT (DISTRIBUTION) This evaluation is based on the need for one additional Assistant Fire Chief to provide required 24 hour supervision of the fire department and to provide support and property protection with the fire department.

clothing which meets or exceeds NFPA and NIOSH requirements. A comprehensive training program is being developed. Quality as well as quantity of training has improved and continues to add competence to the fire fighting personnel.

B. Fire Prevention Program: The Fire Prevention Program is DEFICIENT. A Fire Prevention Supervisor and three additional Fire Prevention Inspectors are required.

C. Fire Department Administration: The administration of the Fire Department is EXCEPTIONALLY GOOD. Fire Department SOP's and other records are up to date and well maintained. The Fire Chief assigns personnel on a rotational basis between the nine fire stations and details personnel to higher positions when other personnel are on leave to ensure proper supervision at all times.

VII. RECOMMENDATIONS:

A. Status of previous recommendations: All previous recommendations have been satisfied or revised and submitted as current recommendations.

1-83 Revised and submitted as current recommendation 3-87

3-83 Revised and submitted as current recommendation 1-87.

7-83 Revised and submitted as current recommendation 5-87.

B. Current recommendations:

1-87 Establish a Supervisory Fire Prevention Position.

2-87 Recruit and hire three additional Fire Prevention Inspectors.

3-87 Recruit and hire one additional Assistant Fire Chief for District No. 2.

4-87 Transfer the two Electronics Fire Alarm Technicians to the Fire Prevention Branch from the Fire Alarm Communication Branch.

5-87 Place Military Construction Project P-170, for a new fire station, in a program year.

6-87 Procure three Code 0905, 1 1/2 ton 4 x 4 with slide in forestry units to replace three 530B, Brush Trucks.

7-87 Install a mobile telephone in the two Assistant Fire Chief's Command vehicles.

8-87 Establish a priority sequence to remove PCB transformers from the Activity.

9-87 Publish a contingency Spill/Oil and Hazardous Waste Management Plan.

... A comprehensive training program is being developed. Quality as well as quantity of training has improved and continues to be improved to the extent of the fire department.

4. Fire Prevention Program: The Fire Prevention Program is being expanded. A fire prevention supervisor and three additional fire prevention inspectors are required.

5. Fire Department Administration: The administration of the fire department is exceptional. The fire department SOP's and other records are up to date and well maintained. The fire chief assigns personnel on a rotational basis between the fire stations and details personnel to special positions when other personnel are on leave to ensure proper supervision at all times.

VII. RECOMMENDATIONS:

A. Status of previous recommendations: All previous recommendations have been satisfied or revised and submitted as current recommendations.

1-83 Revised and submitted as current recommendation 3-84

2-83 Revised and submitted as current recommendation 1-84

1-83 Revised and submitted as current recommendation 2-84

B. CURRENT RECOMMENDATIONS:

1-87 Establish a supervisory fire prevention position.

2-87 Recruit and hire three additional fire prevention inspectors.

3-87 Recruit and hire one additional Assistant Fire Chief for the fire department.

4-87 Transfer the two fire chiefs and other fire department personnel to the fire prevention branch from the fire department on Black.

5-87 Place Billie (phonetic) on P-110, for a new fire station, in a program year.

6-87 Purchase three code 0005, 1 1/2 ton trucks with slide in towers, with a replace fire hose, pump trucks.

7-87 Install a mobile telephone on the two Assistant Fire Chief's Command vehicles.

8-87 Establish a priority response to the fire department from the fire department.

9-87 Submit a copy of the fire department and fire department to the fire department.

10-87 Remodel the Fire Prevention Branch Office in Building No. 1203.

11-87 Procure two microcomputers for the Fire Department.

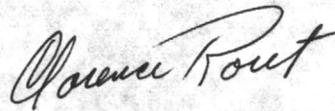
12-87 Place forestry fire plows under management of the Forestry Officer or Fire Chief.

13-87 Rewrite and reclassify the Fire Chief Position and the GS-4 Fire Fighter Positions.

VIII. POST INSPECTION CONFERENCE: A post inspection conference was held with Deputy Assistant Chief of Staff of Facilities, Mr. B. W. Elston; and Fire Chief R. M. Piner, Jr. All recommendations were presented and discussed.



R. F. VALENTINE, JR.  
Area Fire Marshal  
LANTNAVFACENGCOM



C. A. ROUT  
Head, Area Fire Marshal  
LANTNAVFACENGCOM

ATTACHMENTS:

- A. Location of Fire Stations; Organization, Staffing and Fire Fighting Vehicles
- B. Structural Classification and Water Flow Determination

11-87 Prepare two photographs for the fire department.

12-87 Place forestry fire plow under management of the Forestry

Officer of Fire Chief.

13-87 Review and reclassify the fire Chief position and the 0-4

fire fighter positions.

VIII. POST INSPECTION CONFERENCE: A post inspection conference was held with Deputy Assistant Chief of Staff of Facilities, Mr. F. W. Watson, and Fire Chief W. J. Piner, Jr. All recommendations were presented and discussed.

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C. A. BOYD

F. VAHNTINE, JR.

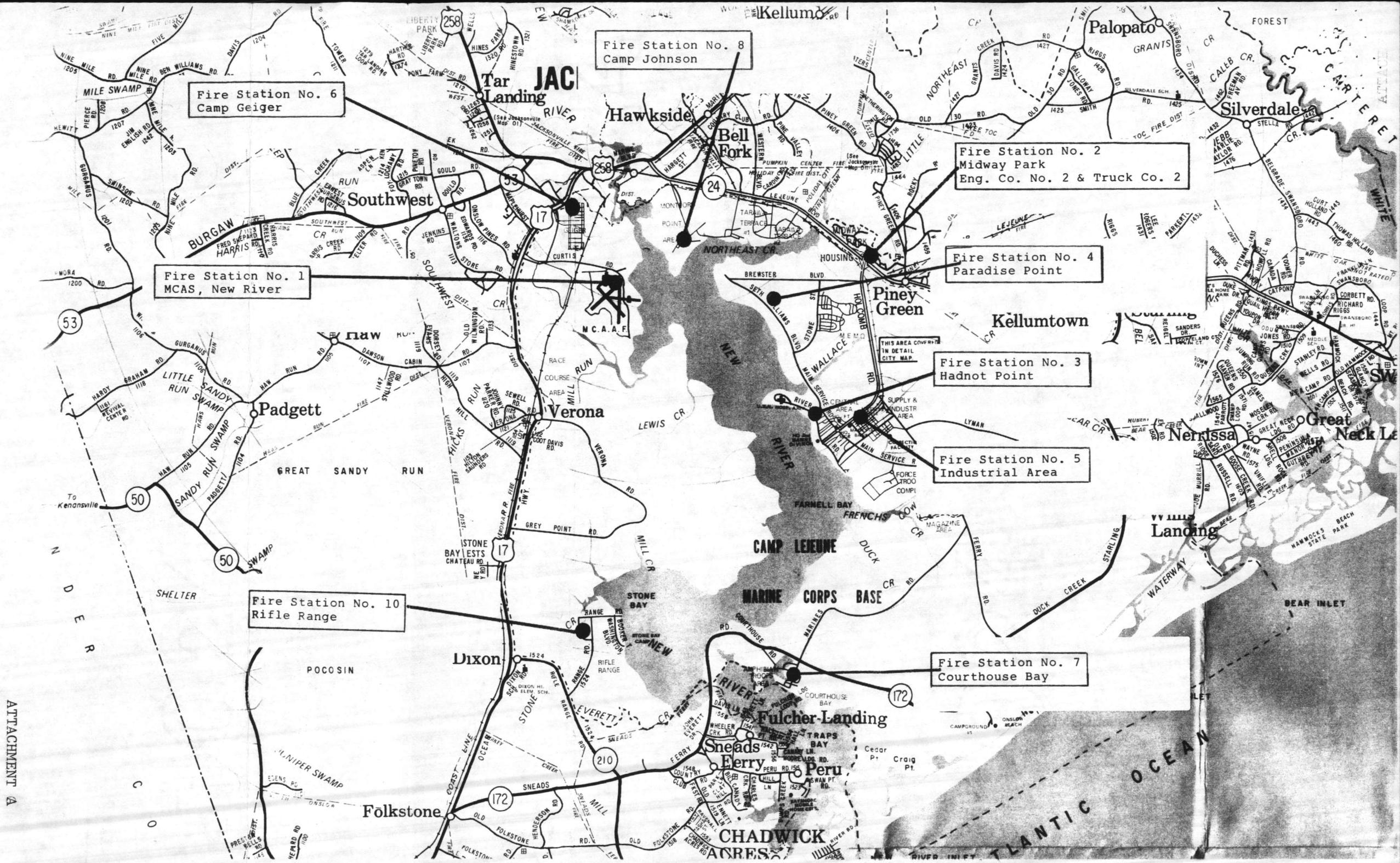
Area, Area, Fire Station  
LAWTAVAC NGOM

Area, Fire Station  
LAWTAVAC NGOM

ATTACHMENTS:

A. Location of fire stations; organization, staffing and fire fighting vehicle.

B. Structural classification and water supply determination.



Fire Station No. 6  
Camp Geiger

Fire Station No. 8  
Camp Johnson

Fire Station No. 2  
Midway Park  
Eng. Co. No. 2 & Truck Co. 2

Fire Station No. 1  
MCAS, New River

Fire Station No. 4  
Paradise Point

Fire Station No. 3  
Hadnot Point

Fire Station No. 5  
Industrial Area

Fire Station No. 10  
Rifle Range

Fire Station No. 7  
Courthouse Bay

ATTACHMENT A

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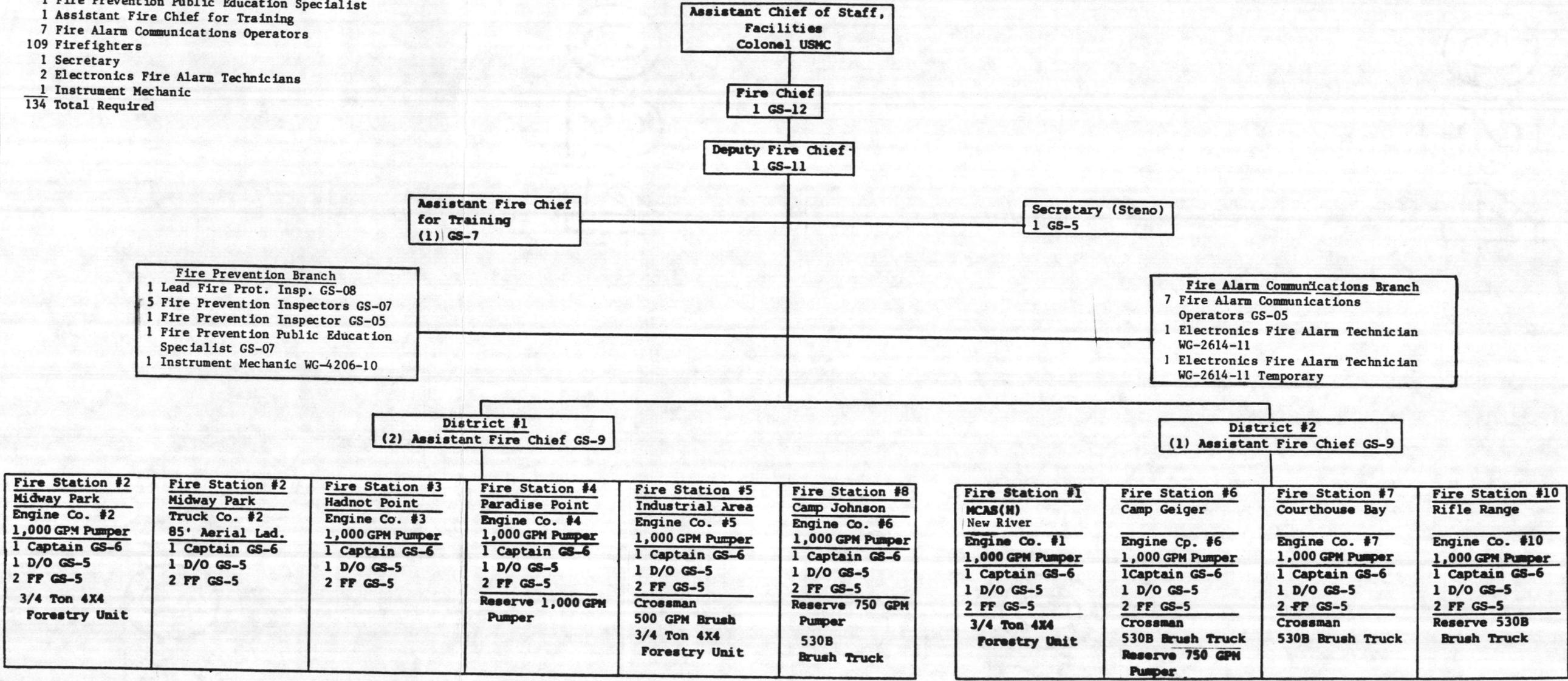
ATTACHMENT A

1911

a. Present

- 1 Fire Chief
- 1 Deputy Fire Chief
- 3 Assistant Fire Chief
- 1 Lead Fire Protection Inspector
- 6 Fire Prevention Inspectors
- 1 Fire Prevention Public Education Specialist
- 1 Assistant Fire Chief for Training
- 7 Fire Alarm Communications Operators
- 109 Firefighters
- 1 Secretary
- 2 Electronics Fire Alarm Technicians
- 1 Instrument Mechanic
- 134 Total Required

**ORGANIZATIONAL CHART**  
**FIRE PROTECTION DIVISION**



Minimum daily manning of Engine and Truck Companies  
9 manned Engine Companies with 4 personnel each  
1 manned Aerial Ladder (Truck Co.) with 4 personnel

$10 \times 4 = 40 \times 2.72 = 108.8 = 109$  Firefighters

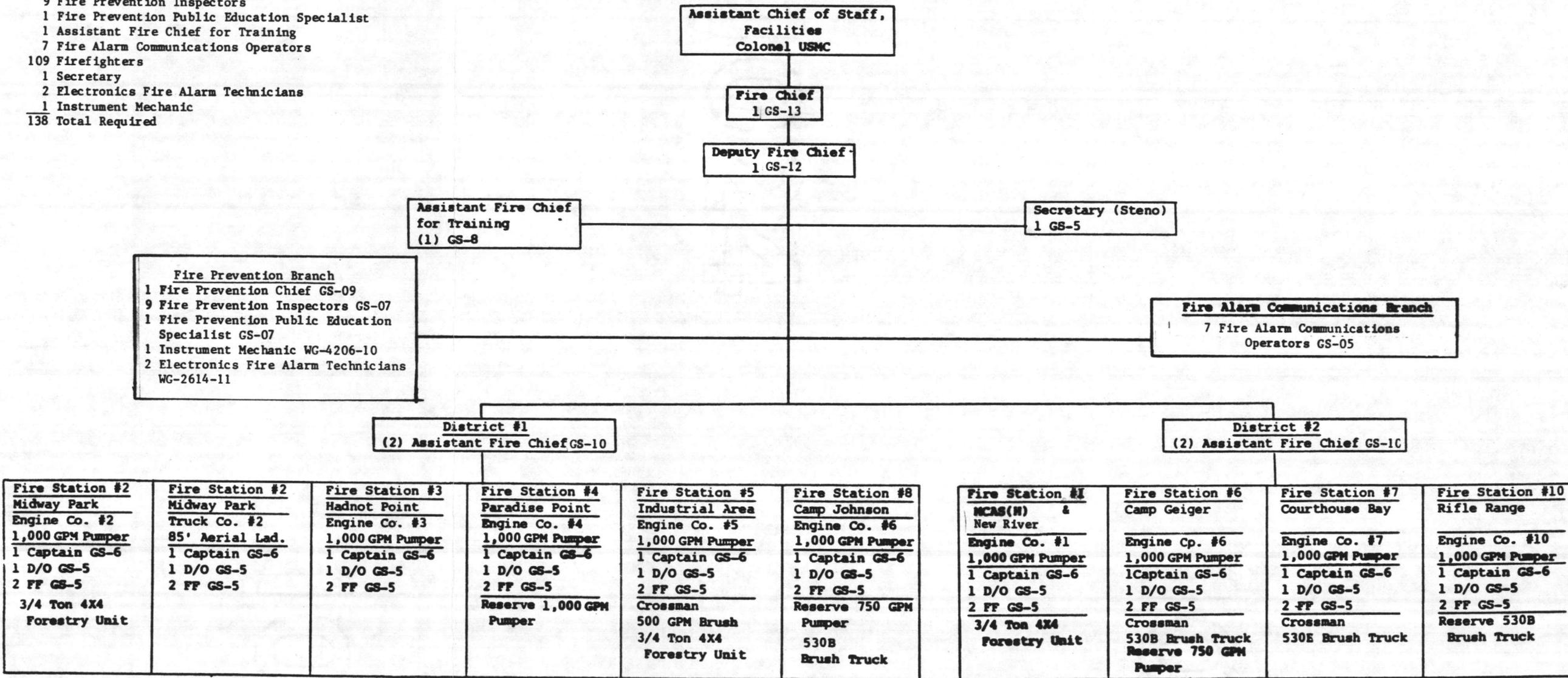


b. Proposed:

- 1 Fire Chief
- 1 Deputy Fire Chief
- 4 Assistant Fire Chief
- 1 Fire Prevention Chief
- 9 Fire Prevention Inspectors
- 1 Fire Prevention Public Education Specialist
- 1 Assistant Fire Chief for Training
- 7 Fire Alarm Communications Operators
- 109 Firefighters
- 1 Secretary
- 2 Electronics Fire Alarm Technicians
- 1 Instrument Mechanic
- 138 Total Required

**ORGANIZATIONAL CHART**

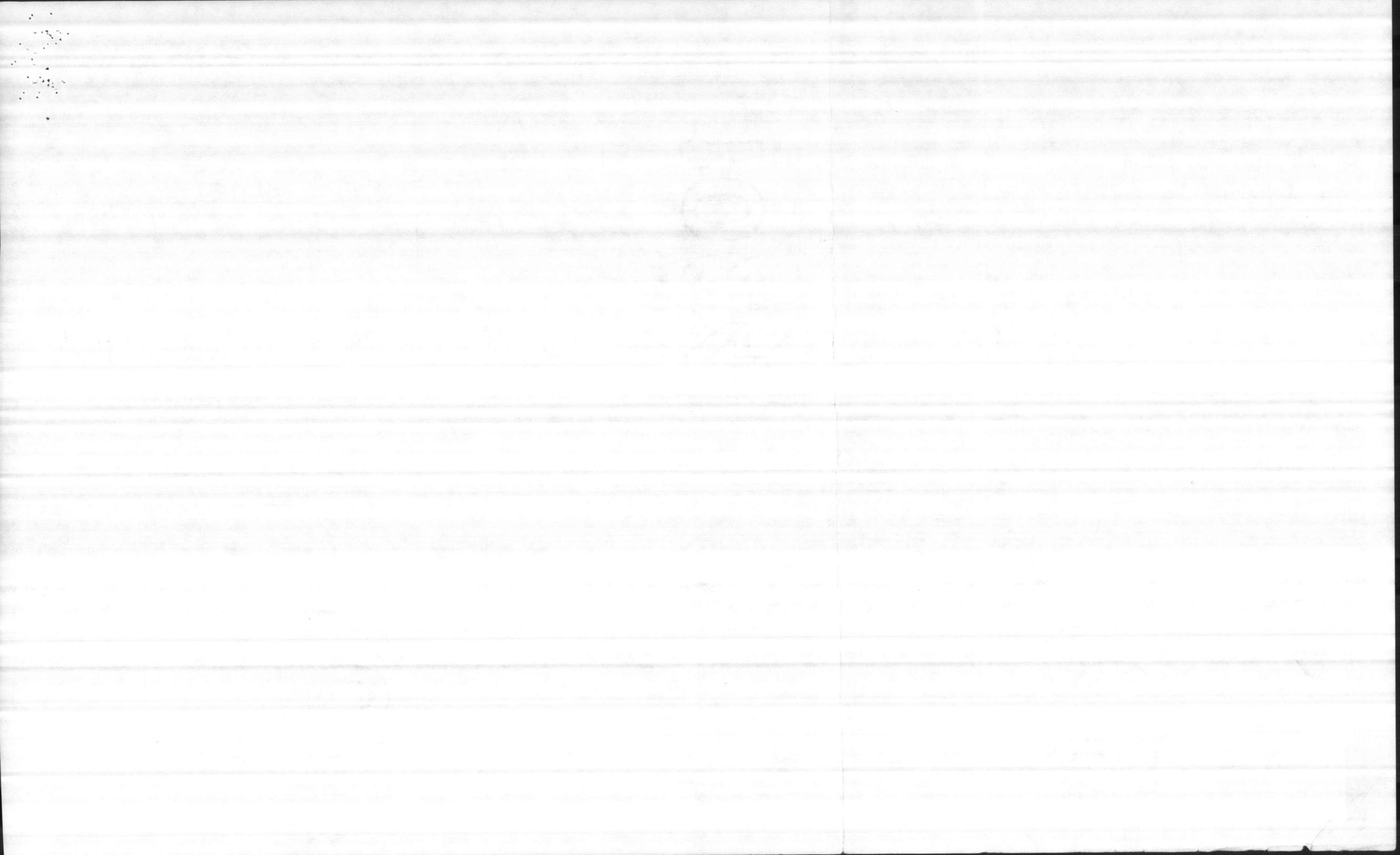
**FIRE PROTECTION DIVISION**



Minimum daily manning of Engine and Truck Companies  
 9 manned Engine Companies with 4 personnel each  
 1 manned Aerial Ladder (Truck Co.) with 4 personnel

10 X 4 = 40 X 2.72 = 108.8 = 109 Firefighters

ATTACHMENT A



2. STAFFING:

a. Authorized 133 permanent positions and one temporary - Total 134

POSITION TITLE	NUMBER OF POSITIONS	CIVILIAN MILITARY FOREIGN NAT	GS GRADE MIL RATE	DIVISION TITLE
Fire Chief	1	Civilian	GS-12	Fire Chief
Supvy Fire Fighter (Struct)	1	Civilian	GS-11	Deputy Fire Chief
Supvy Fire Fighters (Struct)	3	Civilian	GS-9	Asst. Fire Chief
Fire Fighter (Struct)	1	Civilian	GS-7	Asst. Chief for Training
Secretary (Steno)	1	Civilian	GS-5	Secretary
Supv Fire Fighters (Struct)	20	Civilian	GS-6	Captain (1 Vacant)
Fire Fighters (Struct)	26	Civilian	GS-5	Driver/Operator
Fire Fighters (Struct)	63	Civilian	GS-4	Fire Fighter
Lead Fire Protection Inspector	1	Civilian	GS-8	Chief Inspector
Fire Protection Inspectors	7	Civilian	GS-7	Inspector (1 Vacant)
Fire Communications	7	Civilian	GS-5	Dispatcher (1 Vacant)
Electronic Fire Alarm Technicians	2	Civilian	WG-11	Fire Alarm Tech (1 temp)
Sprinkler Instrument Mechanic	1	Civilian	WG-10	Sprinkler Mechanic

b. Staffing calculations MCO P11000.11A

(1) Provide fire protection operations

	<u>Number</u>	<u>Number of Personnel</u>
Triple combination pumps	9	
Ladder truck	1	
Total 4-man vehicles (40 x 2.72 = 108.8 - 109)	10	109

Communication Center

As referenced in the Fire Service Communications Handbook, proper manning and staffing of a fire alarm office is of great importance. Personnel must be technically qualified for the work to which they are assigned and there must be ample help to handle the workload under emergency conditions. This alarm center receives over 2,500 alarms per year. This requires two operators

STAFFING

Authorized positions and one being vacant - Total 133

POSITION TITLE	NUMBER OF POSITIONS	CIVILIAN MILITARY FOREIGN NAT	GS GRADE MIN RATE	DIVISION TITLE
Fire Chief	1	Civilian	GS-12	Fire Chief
Supv Fire Fighter (Struc)	1	Civilian	GS-11	Deputy Fire Chief
Supv Fire Fighter (Struc)	2	Civilian	GS-9	Asst. Fire Chief
Fire Fighter (Struc)	1	Civilian	GS-7	Asst. Chief for Training
Secretary (Gen)	1	Civilian	GS-5	Secretary
Supv Fire Fighters (Struc)	10	Civilian	GS-6	Captain (Vacant)
Fire Fighters (Struc)	20	Civilian	GS-5	Platoon Leader
Fire Fighters (Struc)	23	Civilian	GS-4	Fire Fighter
Food Fire Protection Inspector	1	Civilian	GS-3	Chief Inspector
Fire Protection Inspector	1	Civilian	GS-4	Inspector (Vacant)
Fire Communications	3	Civilian	GS-5	Dispatcher (Vacant)
Technicians	2	Civilian	GS-11	Fire Alarm Tech (Temp)
Sprinkler Instrument Mechanic	1	Civilian	GS-10	Sprinkler Mechanic

(1) Provide fire protection operations in the following divisions: 100, 110, 11A

Number Personnel

Triple combination pumps  
Ladder truck  
Total 4 van vehicles  
(40 x 2 x 2, 100)

Communication Center

As reviewed in the Fire Service Communications Handbook, proper training and staffing of a communication center is of great importance. Personnel must be factually qualified for the work to which they are assigned and there must be a high degree of reliability under all operating conditions. The communication center receives over 2,000 calls per year. This requires two operators

during the day shift and two operators during other peak loads for a total of seven personnel. Activities having 600 to 2,500 alarms per year (an average of 6.8 alarms per day), commonly experience major fires and multiple emergencies.

This places a heavy load and responsibility upon the fire alarm office. Even routine fire calls commonly require handling of 10 to 20 (or more emergency signals. Multiple phone calls about fires are commonplace and must be handled at the same time various alarms and signals are being transmitted. Experience in many places has shown that two operators on duty can be quite inadequate for a busy fire alarm office. Experience at Camp Lejeune has shown this overloading occurs daily during the first shift and Monday - Friday during the second and third shifts.

Total personnel required	7
Total personnel required for fire protection operations	116
(2) Provide fire prevention inspectors	
SF - Square feet of buildings	15,291,883
SF - Square feet of family housing 5,120,139 divided by 1/12	426,678
SF - Square yards of open storage 1,075,931 square yards x 9	9,683,379
Number of fire inspectors required	9
Public Education Specialist	1

There is a requirement for nine fire inspectors. This is at least one inspector less than provided for in Table 4-6 in MCO P11000.11A. To have an effective public education program and an effective fire hazard abatement program, special technically qualified personnel are required. One dedicated public education specialist is required to establish and maintain an effective public education program. With a net increase of over one million square feet of completed construction of inspectable space, and one half million square feet of construction in progress during this inspection, nine fire prevention inspectors, one special education specialist and one Assistant Chief of Fire Prevention are required to meet DOD and Marine Corps criteria.

(3) Plumber Sprinkler Instrument Mechanic required	1
(4) Electronic Fire Alarm Technicians required	2
(5) Provide mission area support	
Total of positions in (1), (2), (3) and (4)	131

...and two of which are other peak loads for a total of ...  
 ...having 200 to 300 alarms per year (an average ...  
 ...of a year day), with only expenses of \$100,000 ...

This project is a heavy load and responsibility upon the fire office. Even ...  
 ...calls commonly require handling 1 to 1.50 for more emergency ...  
 ...calls which require about three and a half hours of handling. Experience ...  
 ...of the same time, about 1.50 and 1.50 being handled. Experience ...  
 ...in many places has shown that two operators on duty can be quite inadequate ...  
 ...for a fire. The same three operators at 1.50 hours has shown this ...  
 ...overloading occurs daily during the first shift and Monday - Friday during the ...  
 ...second and third shifts.

Item	Quantity	Unit Price	Total
Total personnel required			110
Total personnel required for fire protection operations			110
(2) Provide fire prevention inspection			150
31 - Square feet of billings	100	1.50	150
32 - Square feet of family housing	100	1.50	150
33 - Square feet of open storage	100	1.50	150
34 - Square feet of other storage	100	1.50	150
Number of fire inspectors required			1
Public education specialist			1
(3) Provide fire prevention inspection			150
(4) Electronic fire alarm system required			150
(5) Fire alarm system required			150
Total of positions in (1), (2), (3), and (4)			131

...and two of which are other peak loads for a total of ...  
 ...having 200 to 300 alarms per year (an average ...  
 ...of a year day), with only expenses of \$100,000 ...

Fire Chief	1
Deputy Fire Chief	1
Assistant Fire Chief (two-district)	4
Assistant Fire Chief Fire Prevention	1
Training Chief	1
Clerk	1
Total personnel required in mission area support	9
 Total Fire Department personnel required	 138

3. FIRE FIGHTING VEHICLES:

TYPE OF VEHICLE	USMC ID	YEAR AND MANUFACTURER	ASSIGNMENT	USMC REG NO	CONDITION
1000 GPM Pumper	1501	1979 Seagrave	Engine #10	269422	Very Good
1000 GPM Pumper	1501	1978 Seagrave	Engine #6	264511	Very Good
1000 GPM Pumper	1501	1978 Seagrave	Reserve	264513	Good
1000 GPM Pumper	1501	1978 Seagrave	Engine #8	264512	Very Good
1000 GPM Pumper	1501	1978 Seagrave	Engine #7	269427	Very Good
1000 GPM Pumper	1501	1985 Walters	Engine #1	277629	Excellent
1000 GPM Pumper	1501	1985 Walters	Engine #2	277630	Very Good
750 GPM Pumper	1501	1973 Ward La France (Chev)	Reserve	256650	Fair
750 GPM Pumper	1501	1973 Ward La France (Chev)	Reserve	256662	Fair
1000 GPM Pumper	1501	1985 Walters	Engine #4	277632	Excellent
1000 GPM Pumper	1501	1985 Walters	Engine #3	277631	Excellent
1000 GPM Pumper	1501	1985 Walters	Engine #5	277633	Excellent
110 Foot Aerial Ladder	1502	1986 Emergency One	Truck #2	281803	Excellent
500 GPM Pumper	1505	1982 Pierce	Forestry #5	265970	Excellent
500 GPM Pumper	1505	1968 Ward LaFrance	Forestry #6	328402	Poor
500 GPM Pumper	1505	1968 Ward LaFrance	Forestry #10	328657	Poor
500 GPM Pumper	1505	1968 Ward LaFrance	Forestry #7	328671	Poor
Special Forestry Units*	0604	1985 Dodge 4x4 3/4 ton	SFU #1	277443	Excellent
Special Forestry Units*	0604	1985 Dodge 4x4 3/4 ton	SFU #1	277441	Excellent
Compact Pickup Station Wagon	0508	1985 Dodge	Dep Fire Ch	279051	Excellent
Van	0402	1985 Plymouth	Fire Chief	276946	Excellent
Van	0501	1985 Dodge	Asst Chief	278795	Excellent
Van	0501	1985 Dodge	Asst Chief	278804	Excellent
Compact Pickup	0508	1978 Chevrolet Luv	Fire Insp #3	268674	Good
Compact Pickup	0508	1985 Dodge	Fire Insp #7	279027	Excellent
Compact Pickup	0508	1982 Dodge Ram	Fire Insp #2	270846	Good
Compact Pickup	0508	1985 Dodge	Fire Insp #6	279035	Excellent
Compact Pickup	0508	1985 Dodge	Fire Insp #4	279314	Good
Compact Pickup	0508	1982 Dodge D-50	Chief Insp	272255	Good
Compact Pickup	0508	1984 Dodge Rampage	Fire Insp #1	273915	Good



<u>TYPE OF VEHICLE</u>	<u>USMC ID</u>	<u>YEAR AND MANUFACTURER</u>	<u>ASSIGNMENT</u>	<u>USMC REG NO</u>	<u>CONDITION</u>
Compact Pickup	0508	1982 Dodge 1/2 ton	Fire Insp #5	275407	Good
Van	0501	1980 Dodge	Alarm Mech.	270524	Good
Van	0501	1980 Dodge	Sprinkler Mechanic	271103	Good
Step Van	0806	Chevrolet	Hazardous Materials	275596	Good

\*4 X 4, 3/4-ton vehicles

VEHICLE	TYPE OF	USE TO	YEAR AND	MANUFACTURER	ASSIGNMENT	REG. NO.	USMC	CONDITION
Step Van		0800	1980	Dodge	Mechanics	27529		Good
Van		0501	1980	Dodge	Mechanics	27103		Good
Van		0501	1980	Dodge	Mechanics	27024		Good
Compact Pickup		0508	1982	Dodge	Fire Dept	27347		Good

AX 4x4 for vehicle

ATTACHMENT B: Structural Classification and Water Flow Determination

Land Area: Total acres - 86,351.24

LEGISLATIVE JURISDICTION	NUMBER OF ACRES	GENERAL LAND USAGE
Exclusive	83,047	Builtup area - 20%
Concurrent		Forest - 65%
		Tactical training area - 15%
	26,000	Water ways

Buildings: Family Housing: Number of Structures - 2,862  
 Number of units 4,565 - 5,120,139 sq.ft.  
 Other than family housing: Approximate number - 2,218  
 Type of construction by % of number  
 Fire resistive: 15%  
 Ordinary: 10%  
 Noncombustible: 5%  
 Heavy Timber: 2%  
 Frame: 68%

Total square footage of all buildings: 18,963,242

Outside Storage: Total square yards - 1,075,931  
 General categories of storage by % of square yards:

Vehicle storage -	70%
Lumber storage -	20%
Salvage lot -	3%
Hazardous Materials storage -	7%

Structural Classification: Class A-1.

The Activity's structural classification was reviewed and should remain as Class A-1.

Structural Fire Flow Requirements:

1. Paradise Point: Fire flow of 3,000 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Building No. 2615 (which is partially-covered with heat detectors); and Buildings Nos. 2603 - 2607, two-story BOQ's of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-thirds rule 3000 gpm minus 1000 gpm equates to 2000 gpm fire flow, which dictates the assignment of three manned engine companies. Credit is given for one company from the City of Jacksonville, thus requiring two fully manned engine companies. (The first engine company from Station No. 4 and the second from Station No. 3).

ATTACHMENT B - Structural Classification and Water Flow Determination

GENERAL LAND USAGE	NUMBER OF SQUARE FEET	STRUCTURAL CLASSIFICATION	WATER FLOW
Building area -	23,000	Residential	1.5
Garage		Residential	1.5
Tactical training area		Residential	1.5
Water way	10,000		
Family housing: Number of structures - 2,882			
Number of units - 4,502			
Approximate number - 2,218			
Type of construction by % of number			
Fire resistive	15%		
Ordinary	10%		
Noncombustible	5%		
Heavy timber	2%		
Frame	88%		

Total square footage of all buildings: 33,000 sq ft

Outside storage: Total square yards - 1,000 sq yd  
 General categories of storage by % of square yards:

Vehicle storage	40%
Lumber storage	30%
Salvage lot	20%
Barren/brush/forest storage	10%

Structural Classification: Class A-1

The Activity's structural classification was reviewed and should remain as Class A-1.

Structural Fire Flow Requirements

1. Paradox Point - Fire flow of 2,000 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, contain, extinguish and extinguish a fire in Building No. 2015 (which is partially covered with heat detectors); and Building Nos. 2003 - 2007, two-story of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-inch rule 2000 gpm plus 1000 gpm per story to 2000 gpm fire flow, which dictated the amount of water needed and the company. Credits in given one company from the City of Jacksonville, thus resulting in two fully equipped engine companies. (The first engine to arrive at 2015 and the second from station No. 17.)

2. Hadnot Point: Fire flow of 3500 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures, and extinguish a fire in Building No. H-1 (hospital) and Buildings Nos. 404, 406, 410, 412 and 420, large two-story BEQ's with connecting mess halls, of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-thirds rule, 3500 gpm minus 1168 gpm equates to 2332 gpm fire flow, which dictates the assignment of three manned engine companies. Credit is given for one engine company from the City of Jacksonville, thus requiring two manned engine companies. (The first engine company from Station No. 3 and the second from Station No. 5).

3. Industrial Area: Fire flow of 3000 gpm is based on the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Buildings Nos. 110 and 902 - 905, large supply warehouses of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-thirds rule, 3000 gpm minus 1000 equates to 2000 gpm fire flow, which dictates the assignment of three manned engine companies. Credit is given for one engine company from the City of Jacksonville, thus requiring two manned engine companies. (The first engine company from Station No. 5 and the second from Station No. 3).

4. Midway Park: Fire flow of 3000 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Building No. LCH-4014, shopping center, Building No. TT-2457-2455 at Tarawa Terrace Shopping Center; and Building No. TT-48, elementary school. These buildings are of ordinary construction and are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-thirds rule, 3000 gpm minus 1000 gpm equates to 2000 gpm fire flow, which dictates the assignment of three manned engine companies. Credit is given for one engine company from the City of Jacksonville, thus requiring two manned engine companies. (The first engine company from Station No. 2 and the second from Station No. 4, which only responds to the area in which Building No. LCH-4014 is located, the second engine company from Station No. 8 responds to the area in which Buildings Nos. TT-2457 and TT-2455 are located.)

5. Camp Geiger: Fire flow of 2500 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Building No. TC-900, wooden theater and classroom; Building No. TC-910, officer club and exchange; Building No. TC-601, wooden chapel; and Building Nos. TC-861 - TC-864, metal buildings housing supply and maintenance activities. These buildings have a heavy fire load and are not protected by sprinklers or smoke or heat detecting equipment. Using the two-thirds rule, 2500 gpm minus 834 gpm equates to 1666 gpm fire flow, which dictates the assignment of two manned engine companies. (The first engine company from Station No. 6 and the second from Station No. 1).

6. Courthouse Bay: Fire flow of 2500 gpm is based on the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Buildings Nos. BB-11 and BB-14, two-story,

2.1. Industrial Area: Fire flow of 3000 gpm is based upon the required number of 2 1/2 inch hose lines considered necessary to control, confine, protect, expose and extinguish a fire in Building Nos. 110 and 902 - 904, large two-story BPO's with connecting pass ways, of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-third rule, 3000 gpm minus 1000 gpm equals 2000 gpm fire flow, which is given for the assignment of three manned engine companies. Credit is given for one engine company from the City of Jackson, Miss. thus requiring two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 2).

2.2. Industrial Area: Fire flow of 3000 gpm is based on the required number of 2 1/2 inch hose lines considered necessary to control, confine, protect, expose and extinguish a fire in Building Nos. 110 and 902 - 904, large two-story BPO's with connecting pass ways, of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-third rule, 3000 gpm minus 1000 gpm equals 2000 gpm fire flow, which is given for the assignment of three manned engine companies. Credit is given for one engine company from the City of Jackson, Miss. thus requiring two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 2).

2.3. Midway Park: Fire flow of 3000 gpm is based upon the required number of 2 1/2 inch hose lines considered necessary to control, confine, protect, expose and extinguish a fire in Building No. 101-1014, shopping center, Building No. 101-1014, shopping center, and Building No. 101-1014, elementary school. These buildings are of ordinary construction and are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-third rule, 3000 gpm minus 1000 gpm equals 2000 gpm fire flow, which is given for the assignment of three manned engine companies. Credit is given for one engine company from the City of Jackson, Miss. thus requiring two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 2).

2.4. Camp Center: Fire flow of 2500 gpm is based upon the required number of 2 1/2 inch hose lines considered necessary to control, confine, protect, expose and extinguish a fire in Building No. 10-900, wooden theater and exchange, Building No. 10-910, office club and exchange, Building No. 10-901, wooden chapel and Building No. 10-881 - 10-884, retail buildings. These buildings have a heavy fire load and are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-third rule, 2500 gpm minus 834 gpm equals 1666 gpm fire flow, which is given for the assignment of two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 2).

2.5. Industrial Area: Fire flow of 3000 gpm is based on the required number of 2 1/2 inch hose lines considered necessary to control, confine, protect, expose and extinguish a fire in Building Nos. 110 and 902 - 904, large two-story BPO's with connecting pass ways, of ordinary construction. These buildings are not protected with automatic sprinklers or smoke or heat detecting equipment. Using the two-third rule, 3000 gpm minus 1000 gpm equals 2000 gpm fire flow, which is given for the assignment of three manned engine companies. Credit is given for one engine company from the City of Jackson, Miss. thus requiring two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 2).

H-style BEQ's of ordinary construction and Building No. BB-7, large mess hall of ordinary construction. These buildings are not protected by sprinklers or heat or smoke detecting equipment. Using the two-thirds rule, 2500 gpm minus 834 equates to 1666 gpm fire flow which dictates the assignment of two manned engine companies. (The first engine company from Station No. 7 and the second from Station No. 10).

7. Rifle Range: Fire flow 2000 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Buildings Nos. RR-1, RR-2, RR-4 and RR-5, BEQ's; Building No. RR-3, mess hall; and Building No. RR-11, administration building and BOQ. These buildings are of ordinary construction and are not protected by sprinkler or heat or smoke detecting equipment. Using the two-thirds rule, 2000 gpm minus 668 gpm equates to 1332 gpm fire flow, which dictates the assignment of two manned engine companies. (The first engine company from Station No. 1 and the second from Station No. 7).

8. Air Station: Fire flow of 3000 gpm is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Buildings No. AS-226, 22,204 square foot unprotected dining facility; Building No. AS-232, 13,060 square foot, unprotected exchange facility which has a heavy fire load; and Buildings Nos. AS-504 and AS-4108, aircraft hangars. These buildings are protected with automatic sprinklers. One engine company is required to support the sprinkler system during a fire and a second engine company to combat the fire. Using the two-thirds rule, 3000 gpm minus 1000 gpm equates to 2000 gpm fire flow, which dictates the assignment of three manned engine companies. Credit is given for one engine company from the City of Jacksonville. The first engine company from Station No. 1 and the second from Station No. 6).

9. Camp Johnson: Fire flow of 2500 is based upon the required number of 2 1/2-inch hose lines considered necessary to control, confine, protect exposures and extinguish a fire in Building No. M-104, large, wooden building used for field medical training; and Building No. M-130, administration of ordinary construction. These buildings are not protected by sprinklers or smoke or heat detecting equipment. Using the two-thirds rule 2500 gpm minus 834 gpm equates to 1666 gpm fire flow, which dictates the assignment of two manned engine companies. (The first engine company from Station No. 8 and the second from Station No. 2).

#### Outside and Mutual Aid:

1. Marine Corps Crash Fire Rescue, New River. Seven P-19 vehicles, six M-1000 CFR vehicles, one MB-5 vehicle, one 5000 gallon water tanker and 41 military fire fighters.
2. City of Jacksonville Fire Department: one 1250 gpm pumper and four fire fighters on first alarm. Additional equipment on availability.
3. Onslow County Volunteer Fire Department. One 750 gpm pumper and four fire fighters on first alarm. Additional equipment on availability.



4. State Forestry Service, Onslow County. Forestry plows, aerial tankers and paid forestry personnel.

Written mutual aid agreements are in effect with City of Jacksonville, Onslow County, and North Carolina State Forestry Service.

**In-house Aid:**

There are five fire fighting details consisting of 20 personnel each, including not less than four noncommissioned officers, available at all times on call from the Base Fire Department. There are seven fire fighting details consisting of 20 personnel each for backup. These fire fighting details are used to support forestry fire fighting and major fires.

The Force Service Support Group (FSSG) maintains two 530C brush structural pumpers. During normal duty hours a staff of 23 personnel are available and during non-duty hours one unit and four personnel are available.

**Incident Summary:**

Date for calendar year: 1986

Number of incidents reported on DD Form 2324 (loss): 91

Number of incidents reported on DD Form 2324-1 (no loss): 2,581

Number of times outside aid was furnished to the County: 9

EMT responses: 320 On station  
1 Off station

(No aid was requested from mutual aid companies)

**Financial Summary: 1 October 1985 to 30 September 1986**

Labor	\$3,429,667
New Equipment	139,037
Maintenance of Equipment	25,347
Training	<u>29,200</u>
	\$3,623,251

State Forestry Service, Onslow County, Forestry Division, Forest Management and  
Wildfire Management Section

Written mutual aid agreements are in effect with City of Jacksonville, Duval  
County, and North Carolina State Forestry Service

In-house Aid:

There are five fire fighting details consisting of 20 personnel each,  
including not less than four commissioned officers, available at all times  
on call from the Fire Department. There are seven fire fighting details  
consisting of 20 personnel each for backup. These fire fighting details are  
used to support forestry fire fighting and maintenance.

The Forest Service Support Group (FSSG) maintains two 3300 bushel  
choppers. During normal duty hours a staff of 23 personnel are available and  
during non-duty hours one unit and four personnel are available.

Incident Summary:

Incident Location: Waverly, NC

Number of incidents reported on DD Form 2324 (Class): 31

Number of incidents reported on DD Form 2324-1 (Incident): 2,381

Number of times on-site aid was furnished to the County: 4

MFT responses: 220 On-site  
Off-station: 1

(The aid was requested from mutual aid companies)

Financial Summary: October 1988 to 30 September 1988

Incident	\$3,430.00
Travel	139.00
Maintenance of equipment	25.00
Training	20.00
Total	\$3,614.00