

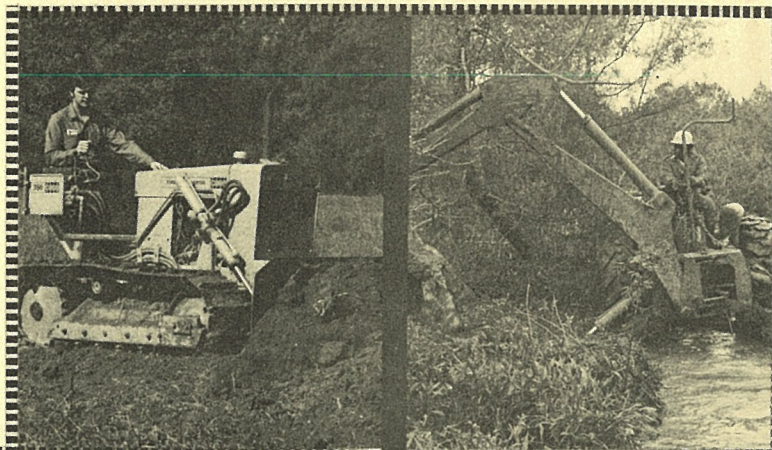
New Orleans Mosquito Control

Permanent Mosquito Control

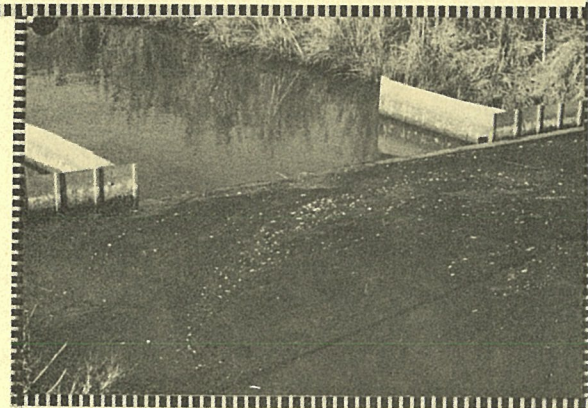
Source Reduction Through;



Access Ditching



Urban Landfill And Drainage



Water Management

"...With The Environment In Mind!"

Annual Report

— 1977 —



**PRIDE BUILDS
NEW ORLEANS**

MOON LANDRIEU
MAYOR

CITY OF NEW ORLEANS

ORLEANS PARISH MOSQUITO CONTROL

13TH ANNUAL REPORT

1977

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New Orleans Mosquito Control / George T. Carmichael, Administrative Director
6601 Lakeshore Drive/New Orleans, La. 70126 (on Lakefront Airport)

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ORGANIZATIONAL CHART

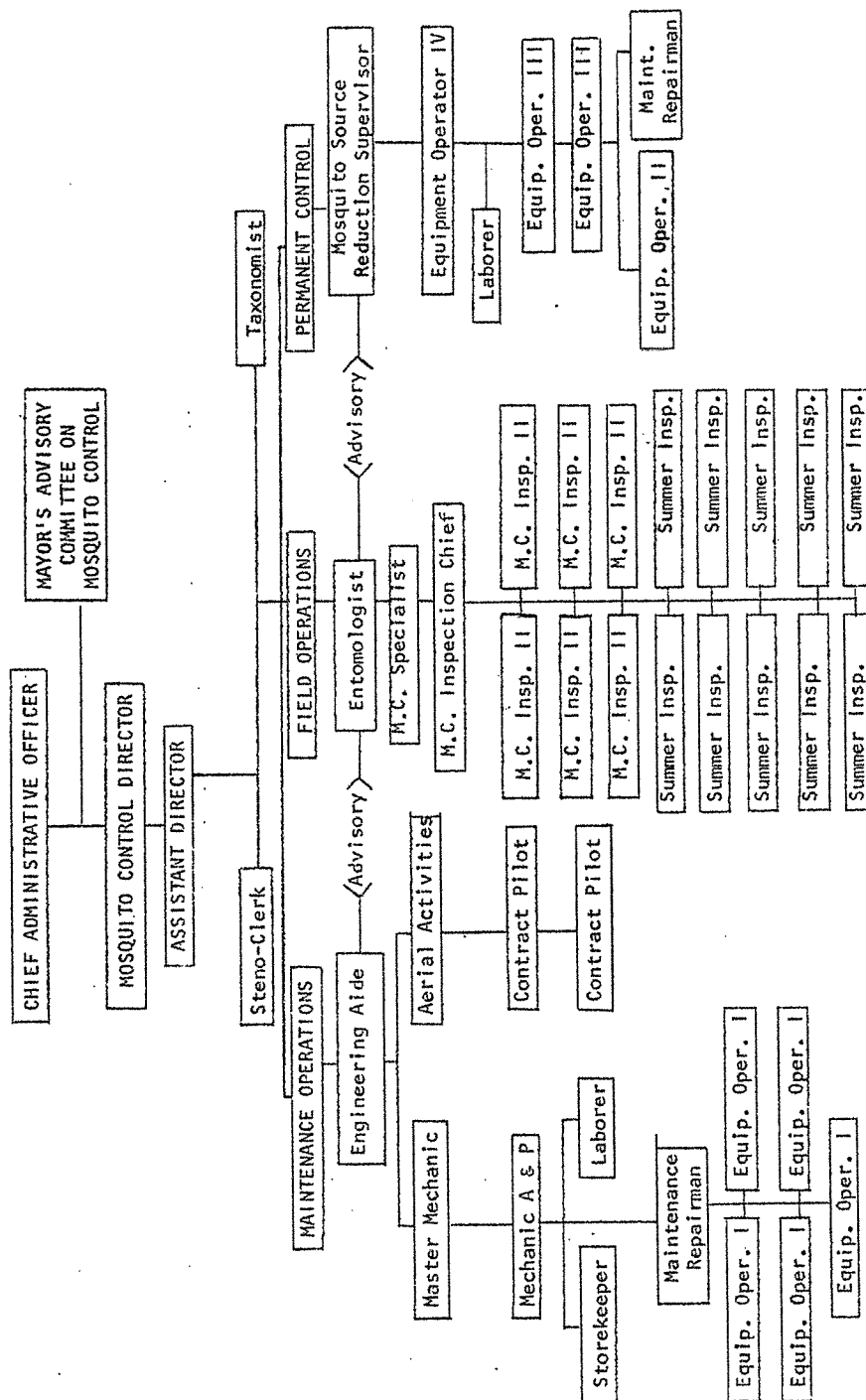


TABLE OF PERSONNEL

1	Director
1	Assistant Director
1	Entomologist
1	Engineering Aide
1	Source Reduction Supervisor
1	Mosquito Control Specialist
1	Equipment Operator IV
1	Master Mechanic
2	Equipment Operators III
1	Steno-Clerk
1	Mosquito Control Inspector Chief
1	Taxonomist
6	Mosquito Control Inspectors II
2	Maintenance Repairmen
5	Equipment Operators I
2	Laborers
6	C E T A Workers
10	Seasonal Part-time Workers

MOSQUITO CONTROL EQUIPMENT LIST

1	1976 4-dr. Ford Sedan
1	1973 4-dr. Ford Sedan
1	1970 4-dr. Ford Sedan
1	1976 Plymouth Volare Wagon

1	Aircraft, Douglas DC-3
1	Aircraft, Grumman Ag-Cat

2	Backhoes, John Deere 310
1	Crawler Case 350
1	Dragline Little Giant Amphibious

6	1964 Ford F-250 Fog Trucks
1	1965 Ford F-250 Fog Truck
4	1971 International Pickups
10	1976 Chevy Luv Pickup Trucks
2	65;67 Ford Pickup 4-Wheel Drive
4	1975 GMC Pickups

1	Forklift, Caterpillar
1	Forklift, Allis-Chalmers

1	Wheel Buggy
1	Track Marsh Buggy with Ditcher

1	Tractor Mule
3	Utility Trailers
2	Gasoline Tank Trucks

2	Boat Trailers
2	Outboard Motors - 33 Hp. & 5 Hp.
2	Aluminum Flat Boats

4	Honda CT-70 Motorcycles
2	1973 Ford Econoline Vans

4	Electrical Power Plants
2	Lawn Care Mowers

ANNUAL REPORT - 1977

The rainfall for the year 1977 was 67.74", which is 9.64" more than the average rainfall for the last 84 year period. The unusual rain pattern throughout the year consisted of a drought condition for the first six months and above normal rainfall for the latter part of the year. The last six months of 1977 resulted in an approximately 17" above normal rainfall. These conditions produced the unusually heavy mosquito problem for 1977. The effects of these unusual weather conditions are reflected through the annual report in the increased activity in each area of Mosquito Control.

The American Mosquito Control Association met jointly with the Louisiana Mosquito Control Association in March of this year and we were honored to have over 900 mosquito control workers from throughout the world visit us during this time. The meeting required a great deal of work from the entire staff and the effort was reflected in the success of the meeting.

The Mosquito Control Program demonstrated a renewed interest in larviciding throughout the year with the introduction of insect growth regulators (IGR) as a larviciding tool. This larviciding method will be intensified in the coming years and a continuous evaluation of its effectiveness will be conducted. A large-tired vehicle was developed from an old Volkswagen to be utilized as a larvicide vehicle in the park areas. Wind tunnel evaluation for pesticide tolerance of all pesticides used in the Mosquito Control Program, as well as those proposed, will be conducted on species from different sections of the parish.

There have been many highlights throughout the year which are reflected in the Mosquito Control Program. Such highlights are; 1) Three staff members attended the Remote Sensing Program conducted at the NASA Test Facility for the utilization of remote sensing for mosquito control; 2) A Field Workshop for mosquito control

personnel in the state of Louisiana was held in Alexandria on June 8th and several staff members participated; 3) The Louisiana Mosquito Control Association Meeting was held in Baton Rouge during October, in which six papers were presented by Mosquito Control personnel. In conjunction with the meeting eight employees were certified under the State Department of Agricultural Certification Program for mosquito control employees.

The Director spent three weeks in Nicaragua, Central America during the summer months to evaluate the mosquito control efforts carried on in that country by the malaria eradication personnel. Four engineers from this operation came to New Orleans during October and spent a week with mosquito control personnel becoming familiar with the operations of our Program.

The increased activity of Encephalitis throughout the country in recent years prompted a closer evaluation of our Encephalitis surveillance program. The program was successful in that all projected phases of the surveillance program were completed with a minimum of positive results from the bird and mammal bloods collected.

The problem of Culex salinarius in the eastern section of New Orleans continues to be of great concern to the mosquito control operation.

Dr. Sam Breeland from CDC in Atlanta visited our program during the year to evaluate the potential problem resulting from this increased breeding. The ultimate solution to this problem can only be corrected by water management through source reduction in the area

ENTOMOLOGICAL REPORT

Activity was the key word for mosquito control throughout the past year. To start 1977, over 20" of rainfall was recorded the final three months of 1976. The

normal high water table associated with the winter months was pushed even higher than normal. Near average rainfall was recorded through the first three months of 1977, but it was this carry-over of surplus rainfall from the last three months of 1976 that set the stage for the largest permanent water mosquito brood of the year (see figure 1, May). Increased average daily temperature was the triggering mechanism that spurred mosquito production in nearly every flooded swale and pot hole in Orleans Parish. Mosquito activity increased from six and eight adult females per trap night in January and February to 39 and 91 adult females per trap night in March and April. These were the existing conditions that resulted in the most active month of May in New Orleans Mosquito Control history.

Warm temperatures stabilized mosquito breeding during the month of April. This initiated the use of Truck Trap and CO₂ landing rates on a limited basis. Aerial and ground adulticiding were necessary to prevent mosquito nuisance in selected areas of Orleans Parish. Up to this point in the year, most of the problem mosquitoes in Orleans Parish were the permanent water species whose eggs are laid on standing water. Very high tides were responsible for the production of large broods of salt marsh mosquitoes (see figure 1). Wind driven tides in late April and early May drove marsh levels to three feet above normal and the primary pest mosquito of Orleans Parish was out in numbers. In fact, Aedes sollicitans and Aedes vexans (floodwater breeders) were identified in every light trap operated during the month of May. To combat these broods of salt marsh mosquitoes, aerial treatments were assigned on 26 occasions, and ground treatments were assigned on 31 occasions.

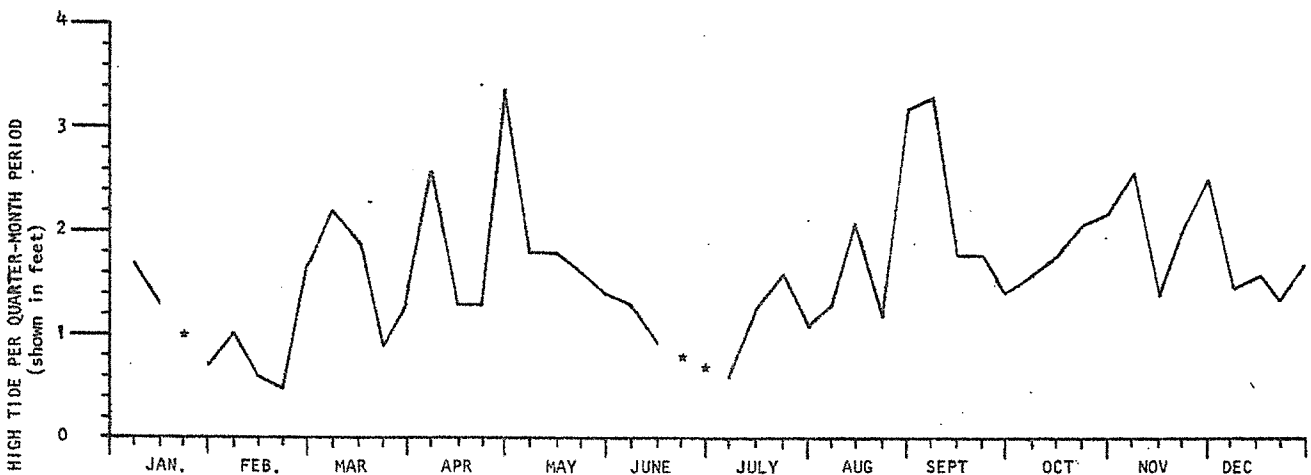
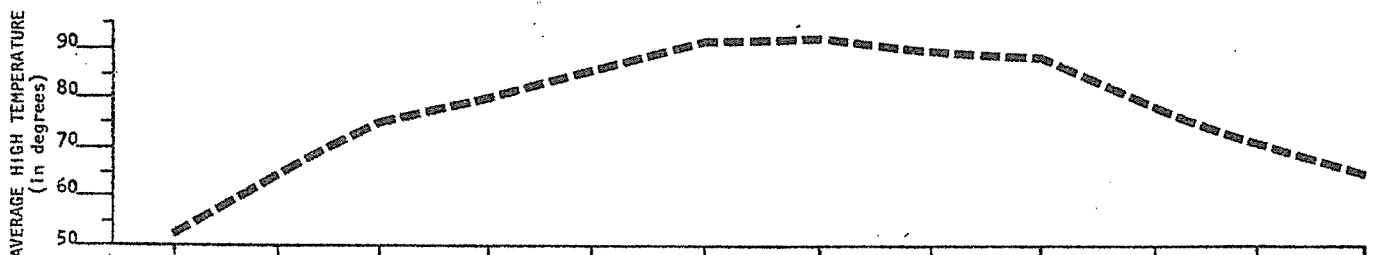
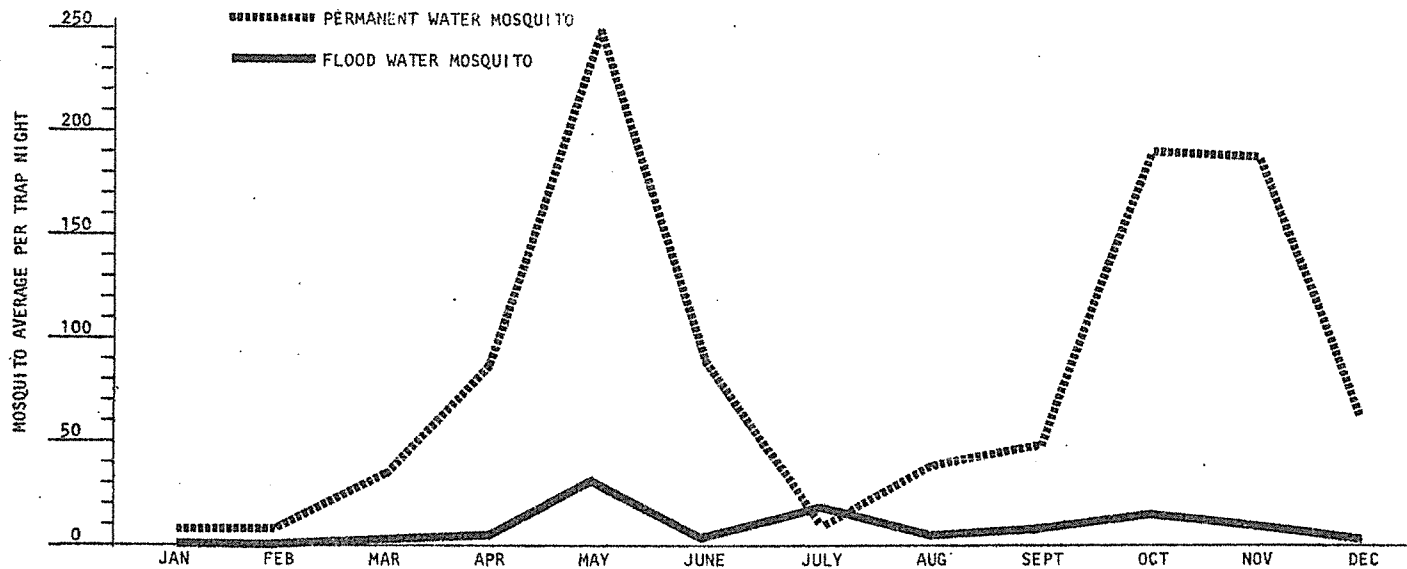
Drought conditions continued through June with mosquito populations finally being brought under control by the end of the month. The drought that started in May continued through most of July. Permanent water mosquitoes were down to less than ten females per trap night. But high tides that occurred in late June and early

July triggered additional large broods of flood water mosquitoes. Conditions were severe enough to press the department's DC-3 into service, treating 70,000 acres during the month of July. In fact, the entire parish was covered by adulticiding activities during the month of July.

The three month drought was broken in grand style when 15.96" of rainfall was recorded during August. The high tides of June and July had done their damage and the heavy rainfall of August merely compounded the problem. Aedes sollicitans was the predominating species in almost every survey conducted during August. Aedes sollicitans accounted for 90% and 95% of adults collected in truck trap collections and CO₂ landing rates. Salt marsh mosquitoes accounted for 35% of the August light trap collections and 22% of the August larval collections. A great deal of credit and recognition must be given to the ground adulticiding crews, the mechanics who kept them going all night, and the full time and contract pilots who flew twice a day at dawn and dusk to control these large broods of salt marsh mosquitoes.

September was also a very active mosquito control month. Aedes sollicitans were collected from all but three light trap locations. Truck trap and CO₂ landing rates were still being used on a daily basis, and adulticiding assignments were well distributed throughout the entire parish. October was a transition month between summer weather patterns and the frontal weather patterns of winter. Our first cold front of the season came through in early October and mosquito activity was temporarily reduced far below average for October. By the end of October mosquito activity was far above average and ground and aerial adulticiding treatments were necessary to prevent problems for many areas of Orleans Parish. The year ended with a surplus of standing water, a very high water table and a very abundant mosquito population. The cool winter temperatures are suppressing mosquito breeding and mosquito activity, but we are again ending the year with a surplus of rainfall, a surplus of standing water and most important, a surplus of larval and adult mosquitoes.

1977 MOSQUITO CORRELATION



* Indicates a week with incomplete data due to recording device malfunction.

SOURCE REDUCTION

January 1977 was like January 1976; a slow start for source reduction activities. In January, officials of the City Central Maintenance Garage requested our assistance in the construction of a drainage system for a new parking lot. Working when weather conditions would permit, and utilizing our entire backhoe operation, we were able to complete the project in a reasonable time. We then moved the machines and completed a project in area Y-15. This area is a remote residential community located adjacent to Chef Menteur Pass in eastern New Orleans. Although the area was only two acres in size, its location (adjacent to houses) and the mosquito species produced (Aedes sollicitans vicious day and night biters) made its elimination imperative. A graded ditch was dug through the numerous swales and connected to the adjacent waterway. This ditch facilitated the rapid removal of rain water and tide water.

In order to better understand the water management problems in Area X-26, a study of the area was made. Water levels measured on the tide gauge (20.4 = 0.0 MSL Cairo datum) located at the western end of the area were compared to water levels over the marsh floor. It is this water, which when flooded into the vegetation, provides the breeding site for the Culex and Anopheles species of mosquito. The study also contained data on tide levels in the Chef Menteur Pass, as well as flow data on the water control structures located at the eastern end of the area.

The installation of a portable 12 volt, 25 watt radio in the drag-line was a significant improvement to our communication system. With this new radio we can communicate from the remote marsh areas to our facility at Lakefront Airport.

In order to expand our operation we began a training program to train two of our Equipment Operators 1 as backhoe operators. The initial training was done at our Lakefront Airport facility. Once the men became proficient in the operational

and safety procedures they began with a field project under the supervision of our Equipment Operator III. Weather conditions during the fall months were very erratic, with many cold, wet days. These conditions, for all practical purposes, eliminated our field operations.

During November we received delivery of the hydraulic rotary ditcher. This unit was installed on the amphibious personnel carrier and installation was done at the lakefront facility. This unit will greatly improve source reduction capabilities.

In order to accomplish source reduction activities in the wetlands, a Corps of Engineers Permit must be obtained. The information that is necessary and the procedure which must be followed to obtain a permit is quite lengthy and time consuming. We are now in the process of obtaining one permit and preparing another.

	<u>BH 1-2</u>	<u>DL-1</u>
Total Hours	406	184
Digging Hours	178	94.8
%Time Digging	44	52.0
Total linear ft.	4,058	6,750
Total cubic/yds.	1,025	3,749
Cost of fuel & oil	\$ 49.00	\$ 53.49
Salaries	\$ 3,717.42	\$ 1,495.99
Miscellaneous cost	\$ 25.25	\$ 1,641.16
Total Cost	\$ 3,791.67	\$ 3,190.64
Cost/linear ft.	\$.93	\$.47
Linear ft./hr.	23	72

ENCEPHALITIS SURVEILLANCE

Encephalitis is a mosquito-borne virus which attacks the central nervous system. The virus is transmitted from birds to mosquitoes to birds. Man is a dead-end host, since an infected human cannot transmit the disease. Encephalitis produces antibodies in the blood of infected animals which can be detected by Hemagglutination Inhibition (HI) testing.

The purpose of the encephalitis surveillance program is to secure blood samples from birds in the New Orleans area. These samples are sent to the State Serology Laboratory for HI testing. Since there is a two week incubation period before an infected mosquito can transmit the virus, detection of virus antibodies in avian blood samples provides an early warning so that the mosquito vector can be destroyed before man becomes infected.

Operations were begun in April 1977 and continued through December. Eight netting locations were sampled once every two weeks. Several walk-in sparrow traps were also used and sampled daily. One sentinel flock of chickens in New Orleans East was sampled twice each month.

The HI tests showed very little activity during the year. The percentage of positive samples remained below 1% except for September (1.6%) and November (7.4%). All birds sampled in November were waterfowl taken in New Orleans East.

Seventeen hundred and eight-three birds were bled during 1977, with seven (0.39%) of these positive. This is the lowest percent positive since the program began in 1967.

Very little virus activity occurred in Louisiana in 1977, with no cases of encephalitis being reported in Orleans Parish.

INSPECTION AND SURVEYS

During 1977 over 2,200 flood water and over 500 permanent water breeding sites were checked for larvae. Nineteen and one-half percent of the flood water and 7.7 % of the permanent water breeding areas contained larvae. These positive areas were treated with a total of 800 gallons of "T-2" larviciding oil (2 quarts surfactant/100 gals. #2 Diesel) and 60 gallons of Altosid^R SR-10 formulation. We are in the process of setting up a different type larviciding unit from the gasoline

engine powered one now in use. With the new unit, each inspection vehicle will have the capability to use either the "T-2" oil or the Insect Growth Regulator (IGR) to treat a breeding site.

New Orleans Mosquito Control operates 30 New Jersey Light Traps twice weekly for the entire year. These traps are located in different areas of the city and are turned on and off by automatic 7-day timers. We have found that these timers greatly reduce the number of times that a trap will not be turned on because of forgetfulness.

During the spring and fall, CO₂ enhanced landing rates and truck trap collections are made when the mosquito population needs monitoring for control purposes. During the peak mosquito season (starting in May this year) both sampling methods are done 7 days a week.

The following is a cost breakdown of the above activities.

			Total	Pos.	Neg.	%Pos.
Floodwater areas Inspected			2,240	436	1,711	19.5
Permanent water areas Inspected			543	42	501	7.7
	Man Hours	Cost	Miles	Cost	Collections	Specimens
Light Traps	1,072	\$ 4,435.31	13,174	\$ 790.26	2,971	276,055
CO ₂ Landing Rates	910	\$ 4,207.46	9,830	\$ 589.80	280	19,898
Truck Trap	385	\$ 2,360.56	3,142	\$ 188.52	580	324,526
Inspection & Mapping	4,334	\$17,973.06	25,513	\$1,530.78	583	5,708
Miscellaneous	7,684	\$33,078.08	15,736	\$ 942.36		
Total	14,385	\$62,054.47	67,365	\$4,041.72	4,414	626,187

Mosquito identification 622,186 adults and 5,708 larvae requiring 907 man-hours at a cost of \$3,579.54.

GROUND ADULTICIDING

There was an increase of over 50% in the total acreage treated by ground adulticiding this year as compared with 1976. This increase was the result of a mosquito season that began in April and continued through November. As has been the case for several years now, Culex salinarius was the major pest mosquito requiring the most effort and time to control. We maintained the policy of sending out our trucks at about 7:00 P.M. into areas that were about one-half the size of the former areas. This allowed more area to be treated at the peak activity time of the target mosquito. This policy also made working the extra hours easier on the drivers.

About 60% of the treatments that were assigned were completed. The cancellations were due to cooler than acceptable temperatures, winds in excess of 10 MPH and absenteeism. Mechanical problems, which were minimized this year, were usually resolved in the field. This resulted in a minimum loss of spray time.

A breakdown of expenses incurred in this operation follows.

Total man-hours	1,893	\$ 7,453.78
Hours adulticiding	1,252	---
Gallons tech. Malathion @ 4 oz./min.	1,736.0	\$18,401.60
Gallons 10% Dibrom-HAN @12 oz./min.	2,562.9	\$ 9,610.88
Total miles traveled	22,284	\$ 1,351.23
Miles adulticided	12,530	---
Total cost adulticiding	---	\$29,363.71
Total acres adulticided	455,635	---
Adulticiding cost/acre	---	\$.065

AERIAL REPORT

This year showed a slow start for aircraft utilization. Several major repairs were accomplished in the early part of the year, such as new fabric and a new engine on the Ag-Cat. The DC-3 had center wing attach bolts replaced along with a 100 hour

inspection. This project was not completed until the end of April.

The Ag-Cat was utilized for some tests before the spray season became demanding. SBP 1382 was tested as an adulticide under field conditions. Another product we evaluated was Altosid^R as a granular larvicide material.

The spray season began late in April and continued to October. The DC-3 had a normal year, except that it was utilized for small plots (under 5,000 acres) against Aedes aegypti. Adulticiding was the Ag-Cat's only operational utilization. In excess of 148,000 acres were treated by the Ag-Cat. This acreage was a record for this aircraft for most acres treated in one year.

Our aerial program cost slightly over \$35,000.00 this year. The sequence of expenses were: DC-3, Ag-Cat, rental helicopters and rental fixed-wing aircraft. The sequence of utilization was: Ag-Cat, DC-3, fixed-wing rental aircraft and rental helicopter. The DC-3 used 46.6% of the aerial program expenditures, with 24% of the DC-3 expenditure utilized for co-pilot training.

	<u>Ag-Cat</u>	
Flights	Hours	Cost
107	144.90	\$ 12,316.50
	<u>Helicopter</u>	
21	37.65	\$ 5,404.00
	<u>Fixed-Wing</u>	
37	42.35	\$ 1,084.30
	<u>DC-3</u>	
45	73.00	\$ 16,425.00
	<u>ADULTICIDING</u>	
MIX	VOL.	HECTARES
Dibrom-14	3,326.92 L	59,968.91

MIX	VOL.	HECTARES
	<u>DC-3</u>	
Dibrom-14	7,787.42 L	69,130.40
Malathion	3,821.80 L	88,433.00

REPAIRS AND MAINTENANCE

<u>DC-3</u>	<u>Aq-Cat</u>
683.50 Hrs.	157.25 Hrs.

RESEARCH AND EVALUATION

Development of the tools and techniques for a more effective evaluation program was the keynote for 1977 in the area of research. Equipment was purchased or constructed and methods learned or developed to better evaluate such things as mosquito susceptibility, effectiveness of ULV treatments, mosquito bionomics and potential mosquito breeding areas.

Heading the list of projects was the development of a more sensitive program for monitoring adult mosquito susceptibility. World Health Organization (WHO) Larval Susceptibility Tests were begun at NOMC to allow more tests to be conducted on a larger range of species.

A wind tunnel was constructed, which is a modification of the one described by Mount, Pierce and Baldwin (Mosq. News 36 (2):127-131). This facilitates collecting susceptibility data on adult mosquitoes. Since the wind tunnel is very similar to those at LSU, Calcasieu Parish Mosquito Control and Jefferson Parish Mosquito Control, and has the same nozzle as the three, comparisons can be made among the four organizations. Most of the year was spent in preparing the unit and developing necessary techniques of operation. Baseline information on many species in New Orleans will be established in 1978.

Using techniques described by Gilotra et. al. (Mosq. News 32 (3):358-363), microinjection studies were conducted to determine adult mosquito susceptibility. Data obtained from microinjection can be correlated with and used in addition to WHO Test and wind tunnel test data.

An insectory was established in 1976 so that sufficient numbers of mosquitoes could be reared for resistance studies and other research. Much of 1977 was spent in upgrading the insectory, including the establishment of a membrane feeding system to eliminate the need for human or animal bloodfeedings.

Two colonies of Culex pipiens quinquefasciatus (Say) and one colony of Aedes aegypti (L.) were established in June and have been maintained throughout the year. These colonies will aid in supplying baseline data for many areas of our control operations.

Several steps were taken to allow better evaluation of Ultra Low Volume (ULV) treatments of adult mosquitoes, and to evaluate new pesticides. In an effort to eliminate over treatment with the Ag-Cat ULV system due to worn nozzles, a system of checking the flow through the T-jet nozzles before and after treatment was started and carried on throughout the year. Those tests showed that the nozzles were wearing at a much faster rate than in the past.

A ground ULV spray system developed at NOMC by August Blake was tested for droplet size, spray pattern and effectiveness on adult mosquitoes. Work on this project is incomplete.

Aerial tests were conducted with the Ag-Cat to calibrate it for use with Altosid^R on sand. It was shown that static group tests do not correlate with in-flight treatments, and the factors which affect the flow of the sand are difficult to control. Calibrations were considered complete until the treatment of a large area indicated an overtreatment. More work must be done in this area before further

treatments are made.

A study was conducted to test the effects of the method of ULV droplet collections on the size and distribution of the particles collected. The data from this study showed dramatic differences in the distribution of the particles, depending on the method of collection.

Two papers authored by Mike Carroll, Jim Bourg and August Blake were submitted to Mosquito News for publication.

Three members of the staff attended classes at the Eros facility on Remote Sensing and its application to mosquito control. Mike Carroll was a guest lecturer for this course. Some ground truthing of "landsat" data was conducted in eastern New Orleans in cooperation with Dr. Cibula of the Eros Program (Eros satellite).

A public relations display was constructed to supplement the Aedes aegypti surveillance public information program. The display was used at the AMCA-LMCA meeting and in several schools in New Orleans.

AEDES AEGYPTI

The third complete year of ovitraps revealed an acute build-up of the Aedes aegypti population in Orleans Parish. Oviposition activity was again recorded at higher levels in the St. Vincent, St. Roch, Lower 9th. Ward, Algiers and Mount Olivet surveillance zones. This year's statistical analysis includes a comparison with ovitrap surveillance data recorded during 1975 and 1976. The comparison clearly indicates that little or no effects were incurred by the 'gyp' population after 1976's record breaking winter temperatures. Ovitrap data for 1977 indicates an approximate overall increase of 70% over the 1975 and 1976 statistics.

With the completion of sufficient baseline studies, emphasis during 1977 was placed on field research for determining adequate control techniques and control

evaluation methods. Ground and aerial DC-3 adulticiding treatments were conducted regularly during the month of July. A total of three aerial treatments and 29 ground ULV adulticiding assignments were completed in "gyp" infested neighborhoods. Ovitrap evaluations during August revealed a decline in oviposition. Heavy rainfalls during August may have competed with the evaluation of ovitraps. This could have resulted in the apparent decline in oviposition.

Other control projects were conducted in the heavily infested Algiers area. Over 1,200 cemetery vases were larvicided with pelletized salt (a 2% salt solution will kill Ae. aegypti larvae). Post-treatment ovitrap surveys did not reveal any decline in cemetery oviposition. Later laboratory studies revealed that the saline solution in the vases was detected by adult Ae. aegypti, causing them to oviposit in other areas. Public information efforts were also concentrated in the Algiers area with film/lecture presentations reaching more than 3,500 students.

Field tests were conducted August through October using the "Fay" trap (Mosq. News 30 (1):20-30) to explore its effectiveness in capturing adult Ae. aegypti. Twenty-one trap night periods resulted in capturing 422 adults. The trap's effectiveness was also compared with the CDC trap and various attractants. All tests indicated the "Fay" test to be more effective, and its use will be valuable in evaluating Ae. aegypti control operations during 1978.

Papers presented during organizational meetings this year included "Multiple Evaluation Methods for Ae. aegypti Control Operations" and "Observations Using the Fay Trap for Ae. aegypti Adult Collections".

INSPECTIONS:
(# LBJ's INSPECTED)

	<u>1975</u>	<u>1976</u>	<u>1977</u>
Cemetery	3,956 (13%)	4,535 (13%)	3,497 (22%)
Premise	4,167 (12%)	6,581 (16%)	5,539 (27%)
Riverfront	1,983 (01%)	1,746 (02%)	1,600 (06%)

	<u>1975</u>	<u>1976</u>	<u>1977</u>
House-to-house	662 (09%)	681 (12%)	869 (10%)
Junkyard	0	6	0
Ovitrap in operation	245	276	282
Total paddles collected and read	9,579	12,622	10,636
Total paddles positive (% Positive)	1,061 (11%)	1,660 (13%)	2,378 (22%)
Total <u>Aedes aegypti</u> eggs	22,814	39,505	74,055

<u>MAN HOURS</u>	<u>HOURS</u>	<u>COST</u>
Inspection	3,091.5	\$ 14,128.16
Office	1,682.0	\$ 7,686.74

<u>TRAVEL</u>	<u>MILES</u>	<u>COST</u>
Vehicles	20,091.2	\$ 1,607.30
Trailbikes	818.4	\$ 32.74

TOTAL COST \$ 23,454.94

Light Trap Collections

	TOTAL		AERES		ANOPHELES		CULEX									
	MALE	FEMALE	SOLL.	VEY.	CRUC.	QUAO.	quink	sal.	csi	C sm	p sf	Ur	Aeae	P sc	Cqp	other
1. Lou. Algiers	562	12345	604	411	1282	98	2	9549	229	0	3	87	0	6	37	37
2. Tall Timbers	233	1797	177	254	12	9	0	824	14	0	4	419	0	72	0	12
3. Mid. Algiers	341	1246	28	267	58	32	2	767	37	0	6	35	0	1	0	13
4. Mid. Algiers	159	3444	26	137	43	12	2	3141	33	0	0	23	0	0	0	27
5. Up. Algiers	162	2309	95	374	30	4	1	1466	33	0	2	21	4	8	0	15
6. Benton	63	419	11	124	5	3	1	249	7	0	0	6	6	0	0	7
7. H. Roman	152	532	3	179	12	2	1	289	18	1	2	13	3	0	0	9
8. Irish Chern.	163	875	8	298	29	5	3	407	26	0	0	44	34	0	0	21
9. S. Clatsborne	463	2627	62	822	84	73	4	1377	13	0	2	147	20	2	0	21
10. Audubon Zoo	441	1546	23	453	54	34	3	890	26	0	4	27	10	0	2	20
11. Audubon	138	1068	79	333	23	10	1	512	20	0	25	19	4	20	7	15
12. DeSalix	157	764	21	207	12	6	1	475	23	0	0	8	2	1	1	7
13. City Park	239	995	20	336	56	9	1	499	26	0	1	31	0	5	1	10
14. Lakewood	656	3327	42	1204	44	9	6	1891	32	0	1	63	0	0	2	14
15. Long Vue Gd.	84	813	4	389	10	0	1	316	46	0	3	22	0	0	0	22
16. Lake Terrace	1536	6158	60	1701	256	16	1	3767	156	2	28	97	0	0	32	42
17. Louisville	693	1873	17	954	55	12	3	569	42	0	28	125	3	0	9	56
18. Cameron	379	1468	34	360	64	2	0	483	28	0	1	44	3	2	427	20
19. Lafreniere	35	563	11	68	15	13	1	400	35	0	0	7	1	0	9	3
20. Gentilly E.	54	218	7	27	18	3	0	142	6	0	2	4	2	1	6	0
21. Hullet	1348	5086	26	2041	215	29	4	2519	20	0	60	59	9	0	61	43
22. Vincent	1439	31344	164	3196	438	287	0	26054	743	0	3	232	0	3	55	169
23. VII. del'Ea.	234	3952	181	1769	103	43	0	1668	103	0	0	22	0	1	9	53
24. Old Gent Ecn	230	6332	84	479	195	21	4	5424	64	1	0	26	1	0	18	15
25. Tip Top Res.	595	52427	2609	1432	819	237	0	45443	1052	0	0	790	0	0	30	15
26. Powers Jct.	883	20554	2204	107	1137	76	4	14053	458	0	0	2471	4	4	5	31
27. So. Shore	1468	16876	359	183	2831	58	0	12147	346	0	2	881	0	0	12	59
28. Venet. Isl.	4355	42222	1371	220	8979	66	0	31148	207	0	8	181	0	3	0	47
29. Greens Ditch	1124	27754	2413	166	4326	14	0	19687	866	0	5	241	0	0	0	36
30. Riglets	814	20300	1485	249	4786	76	0	12954	636	0	4	86	0	0	1	23
TOTAL	19221	271234	12228	18735	26033	1247	46	199110	5960	4	194	6226	103	129	704	862

Orleans Parish Light Trap Collections

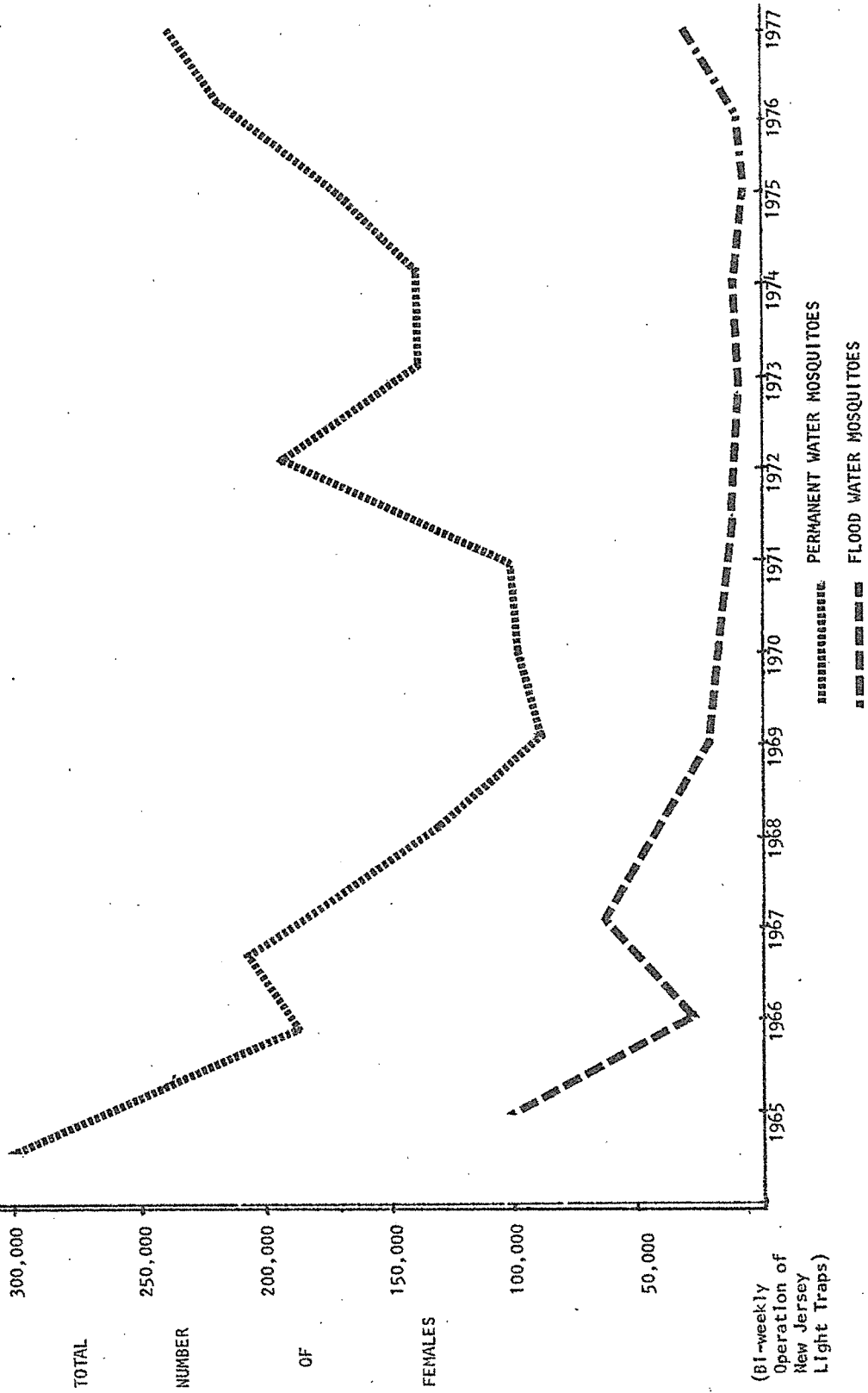


Figure 8

