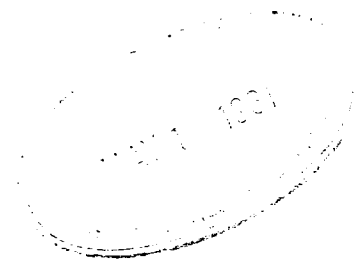


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BIRD CONTROL WITH HANDCRACKERS

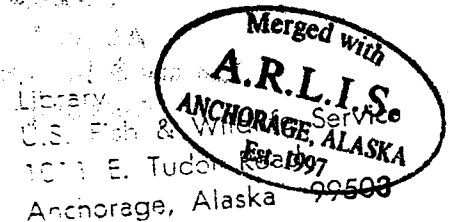
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BIRD CONTROL WITH HANDCRACKERS

William D. Fitzwater
Animal Control Biologist
Lafayette, Indiana

28 March 1961

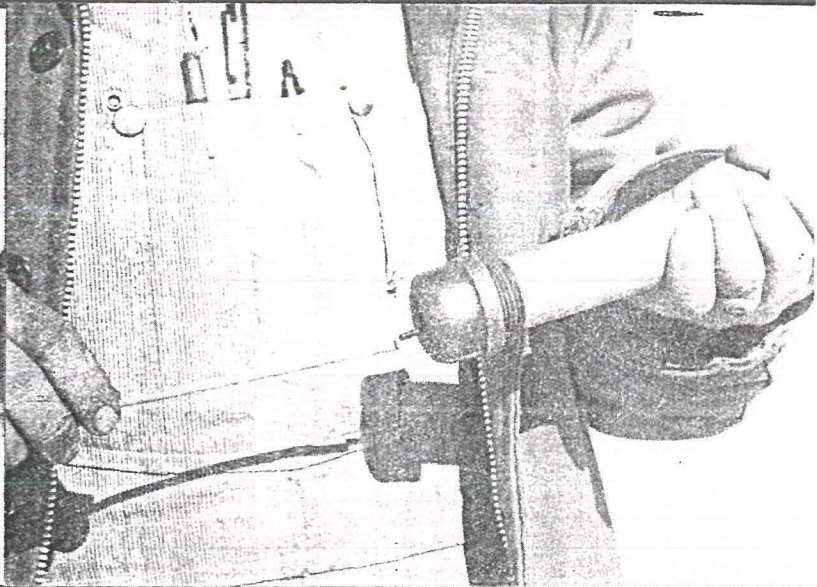
The writer has developed a new fireworks device, the HandCracker, from prototypes first devised by George Hockenyos (Sentinel Pest Control Laboratory), for use in moving nuisance birds from roosting areas. Having the appearance of a large firecracker, it is 3 inches long and 7/8-inch in diameter. The three types currently available are designated the M-1, M-2, and M-4. When the M-1 fuse is lit its powder explodes propelling the inner cartridge 40 to 60 feet in the air, where it goes off with a loud, sharp report. In like manner the inner cartridge of the M-2 HandCracker is projected 80 to 100 feet. The heavy concussion caused by the 2.5 gm. powder charge in this inner cartridge appears to have a more lasting effect than previous attempts with lighter loads. The M-4 fires a compressed gunpowder pellet about 150 feet in the air that burns itself out in a long fiery trail like a one-ball Roman candle. It is hoped that an M-3 can be designed with a range up to 100 yards so as to compete with the expensive exploding shotgun shells for agricultural use.

A piece of 1-inch ~~H~~ galvanized iron pipe is used as a gun or firing tube. The tube may vary in length but for good range and trajectory control, the optimum length is 14 to 18 inches. One end of the tube is closed with a threaded cap having a 3/8-inch hole in the center. The HandCracker is dropped fuse down in the open end so that the fuse extends through the hole in the cap. The fuse is lit and the gun pointed in the direction desired. It must be held so that both ends of the pipe point away from the body as shown in the attached illustration. Sparks sometimes fly out of the fuse hole and might burn clothing. It is also advisable to hold the open end slightly above the ear so that if a premature explosion occurs it will not cause excessive discomfort.

HOW TO APPLY

The birds will be more easily diverted if operations are begun as the roosts first start to form in the fall months. Begin using HandCrackers as soon as the birds come in to their roost, usually an hour or so before sunset. The birds are more readily moved when it is light enough for them to locate alternate roosting places. The treatment usually requires 1-1/2 to 2 hours a night, but can be continued for as long as the birds appear. Late at night when the noise of the aerial bombs would be too disturbing, shift to the M-4 HandCrackers. These units are also valuable in discouraging tenacious individuals or in situations where the use of aerial bombs is too hazardous.

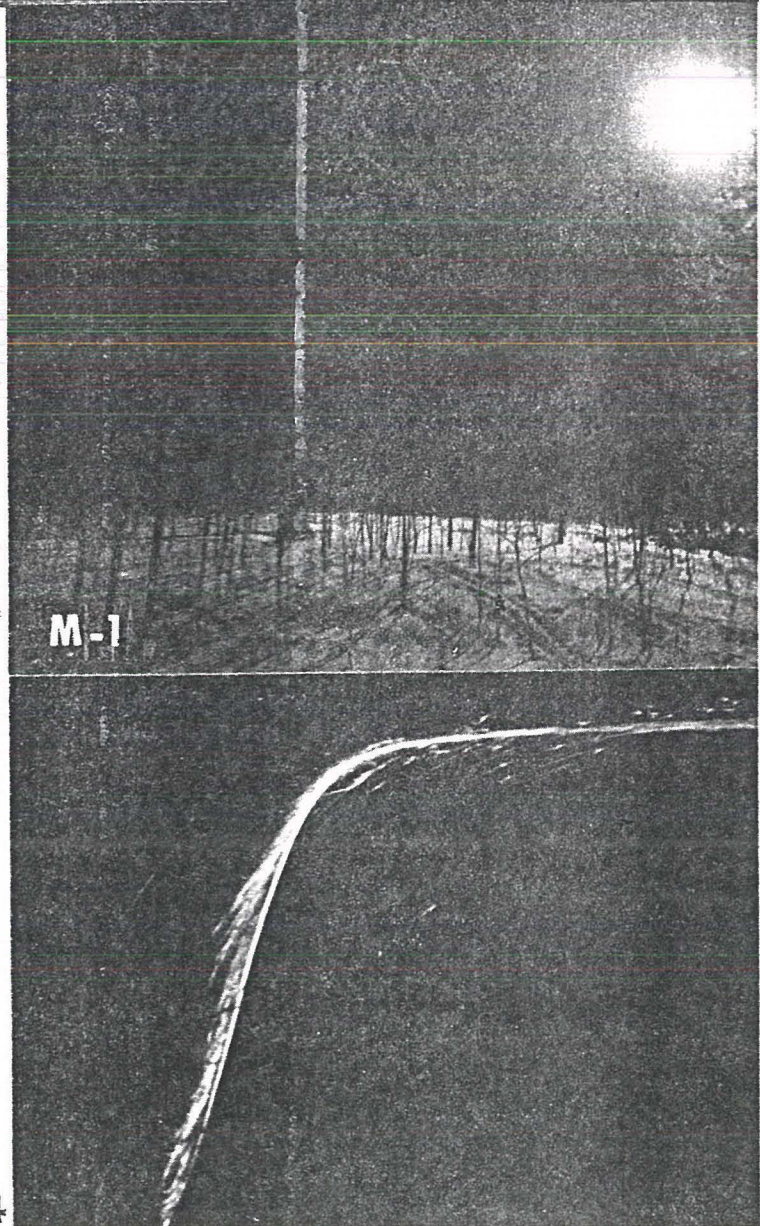
THE HANDCRACKER



Proper Handling of HandCrackers



M-4



M-1

The short-ranged M-1 is used for tree roosts and buildings under four stories high. The longer M-2 will take care of buildings of five or more stories as well as court houses and bridges.

During the first three days it is advisable to keep the birds in constant movement to prevent them from settling in quiet areas. Two parallel city blocks of optimum roosting locations are about the maximum that one man can handle the first two nights. A particularly desirable roost may require one man for that one building. Less desirable sites need less intensive treatment so that one man can service a greater area. It is doubtful that more than five days will be required for an individual treatment, but successful control is achieved by perseverance until the birds are completely routed. Retreatments may be necessary, depending upon season and circumstances.

Estimation of the exact number of HandCrackers needed is difficult. (See SUMMARY AND CONCLUSIONS) At the start, about 50 per man-hour will be shot but this tapers off in subsequent days. Complete control was achieved with less than 500 in Marion, Indiana, but it is felt that a minimum of 2,000 units should be available for use. Other devices, such as ammonia sprays, acetylene exploders, and bright lights can be used to supplement the HandCrackers and reduce the total cost of the operation.

WARNING

HandCrackers are dangerous fireworks containing heavy gunpowder loads. They should be stored and handled carefully. It has been found very convenient to carry them in a bag or knapsack swung to the side. Some provisions should also be made to dispose of the empty shells or the litter may create unfavorable comment. The noise may draw criticism but most observers favor the program (unless the birds are moved onto their premises) as it relieves the problem without offending the small segment of bird-lovers opposed to all forms of bird control.

Make certain the charge will explode in a clear space. If a charge hits an obstacle, it will usually disintegrate, but will sometimes catch and burn with a hot fire. Except for long throws, always shoot out, away from buildings, parallel to the front rather than into the building. Do not shoot so that a charge might drop down on people or cars before exploding. Do not retrieve an unexploded charge for at least 30 seconds after it has been fired. Due to the long range of the M-4 fireball, it should be directed upward so that it will burn out safely in the air. The firing tubes should be cleaned out thoroughly after each night's use as the black powder clogs them and makes it difficult to insert the HandCrackers.

WHERE HANDCRACKERS ARE INEFFECTIVE

Starlings and native species like cowbirds, blackbirds, purple martins, etc., can be readily moved from exposed roosts by diligent use of these fireworks. However, where the birds can get into protected roosts through broken windows, open ventilators, rusted roof copings, holes, etc., even fireworks cannot dislodge them. Such havens should be sealed off before starting to use the HandCrackers. English sparrows can be moved from open ledges and tree roosts with HandCrackers, but they are almost impossible to eliminate completely from protected areas, such as lighted signs and building recesses. Protective netting, poison bait, or bird glues are recommended in such locations. Fireworks are generally valueless in solving a pigeon problem for any length of time.

FIREWORKS REGULATIONS

Most States have fireworks regulations, but permission for their use in bird control can be obtained from County Sheriffs in Illinois, Indiana, Ohio, and Wisconsin, from township boards in Michigan, and from County Auditors in Minnesota.

SOURCE OF SUPPLY

We received fine cooperation in the development of the HandCracker from John Miller of Miller's Fireworks and Novelty Co., Inc., R.F.D. No. 1, Holland, Ohio. A quantity were manufactured by Mr. Miller at our request, for test purposes.

It was thought that the HandCracker might be distributed commercially for probably five or six cents each but at this writing it would appear that the price may have to go higher.

FIELD EXPERIENCES

Marion, Indiana - 21-25 November 1960

Custom-loaded HandCrackers were first used on a starling-sparrow roost in the center of Marion. This followed an unsuccessful attempt with a light trap on the Court House square. The first night our HandCracker operation extended from 12:00 midnight to 3:00 A.M. This was repeated for two hours the next two nights with a 2-man crew. The operation was suspended over Thanksgiving. The following night the local men in charge of the program, Messrs. Curtis and Crowell, counted 15 starlings and shot only 3 HandCrackers. When I visited Marion on November 28th, about 35 sparrows were clustered around an electric sign. These sparrows would not move for any amount of fireworks. Except for three pigeons, there were no birds on the Court House. Subsequent inquiries failed to locate birds in any part of the town or in neighboring communities. This situation has continued to date and the project adjudged a great success by all concerned.

Peoria, Illinois - 23-27 January 1961

The writer was asked to assist the State Highway Department in removing starlings from a bridge where they were creating a hazardous, slippery condition. Mr. George Hockenyos (Sentinel Pest Control Laboratory) had undertaken the project January 3rd through the 6th, with ammonia sprays and fireworks. He had achieved temporary success, but other commitments kept him from continuing the project and the birds had returned. After an unsuccessful attempt with ultrasonic devices, J. H. Kane and other members of the highway department were shown how to use the HandCrackers on January 20th. High point of the evening occurred when the writer dropped a hot, spent HandCracker into a box of 300, causing them to ignite. This was an awe-inspiring sight, but it is not recommended as an effective technique. No harm resulted, but it did emphasize the need for careful handling of fireworks. Though an estimated 15,000 birds settled on the bridge, only about 2,000 were counted leaving the next morning.

The HandCrackers were left with Mr. Kane who has furnished us with a detailed report on the concluding operations. On January 23rd, a crew of 4 men kept the birds well stirred up and most of them left the bridge. However, it was felt that the 3000-foot span required more men, so the next night 6 men were employed. On the 25th it was reported that only 30 birds attempted to land on the bridge, but it was decided to continue work through the rest of the week. On the 26th and 27th, only single birds attempted to land, the bulk of the flock heading for downtown Peoria without approaching the bridge. Mr. Kane observed the bridge on Sunday night (29th) and reported, "It would appear that, for the time being, our bridge is clear of starlings. There are still pigeons roosting in the steel, and I am wondering if they may attract the starlings back again." Mr. Hockenyos reported there were about 50 birds on the bridge around the first of March. I checked the area on March 22nd. There were no starlings seen on the bridge or going to town. Apparently they had already broken up this roosting pattern for the season.

From Mr. Kane's excellent report the following conclusions are of interest - "This week of activity consumed about 34 man-hours of overtime, 20 man-hours of supervisory personnel and 469 HandCrackers... This, we feel, has been the most practical approach to harassment of the birds from their roost. If we are rid of this problem for the year, there is no question but that the firecracker method is the cheapest and best of the methods tried... (but) we would say that harassment of these starlings is not the final answer. The birds are still in the community, and there is bound to be some resentment from persons who will have their bird problem aggravated... If, in future years, it is decided to use harassment to dislodge the starlings, we believe the City, County and other interested agencies should be invited to participate in a community wide program... The following quotation appeared in the Peoria-Journal Star... "Well, it looks like maybe the starlings are abandoning Baker Bridge to move downtown. This is good?..."

Joplin, Missouri - 1-7 February 1961

This project was undertaken in cooperation with Paul Hooker and Darrol Pharris of the Joplin Health Department. The writer worked with the crew the first two nights but is indebted to Darrol Pharris for complete reporting of subsequent data. This project was not as complete a success as previous ones, but the fault seemed to lie in the preponderance of buildings with protected roosts. Birds diving directly into accustomed roosts in rusted-out roof cornices were not dissuaded by fireworks. Their flight patterns into town served to bring others in despite the constant bombardment. While it was impossible to count the birds using these protected roosts, a head tally of birds present on the store fronts along Main Street between 3rd and 10th Streets was made after 9:00 P.M. These data are as follows:

<u>Date</u>	<u>Estimated Number of Birds</u>
1 Feb	1,324 -/-
2 Feb	143
3 Feb	46
4 Feb	28
5 Feb	33
6 Feb	13
7 Feb	26

The first night our operation was confined to the problem area between Third and Eighth Streets. Along this section 86 birds were counted at 10:00 P.M., the remaining 1,238 being in new roosts between Eighth and Tenth Streets. The next night our operations were extended over the entire length of Main Street. While the count between Third and Eighth remained fairly constant (80), there were only 63 birds between Eighth and Tenth. We also found birds utilizing one-story ledges down the length of Main Street. However, these were very transitory resting places as the birds were readily flushed by merely clapping one's hands.

The presence of small groups and individual birds at the conclusion of the project points to the need for supplementary measures. Perhaps the elimination of these remaining birds with shot or pellet guns, as used by Mr. Hockenyos in his Springfield project, should be considered a necessary adjunct to this program. Mr. Hooker reported that while the birds had moved out by the end of the program, they returned in large numbers a few days later. A group of merchants, however, continued to use the Hand-Crackers, and were achieving local control for the time being. Mr Pharris'

conclusions were - "This is by far the most satisfactory treatment that has been attempted since I have been with this department. However, we still have the birds, but not in the damaging numbers that were present."

During this field test it was noted that almost constant watch had to be kept on the Connor Hotel, the highest structure in town. The M-2 Hand-Cracker just reached the top of this building, but here again protected roosts kept bringing the birds back in. The same was true of the transformer poles in the alley beside the hotel. A window was hit directly with an M-2 projectile without apparent damage. Another dropped and exploded on a car windshield, also without damage. Thus, I feel that, while undoubtedly dangerous, serious accidents are not likely to occur with these devices if good judgment is used. With intensive firing the guns get too hot to hold. Darrol Pharris suggested wrapping several thicknesses of newspaper around the butt end and covering this with electrician's tape.

Columbia, Missouri - 3-5 February 1961

At the request of Charles C. Isley, Jr., Chamber of Commerce, an attempt was made with the HandCrackers to control the birds roosting in Columbia. Edward M. Moyer (Getz Exterminators, Inc.) undertook the project after the first night. On the first night 576 M-2s were used. As these were left in an open box on the front steps of the Boone Hotel, I believe some were stolen by passersby. It is impossible to shoot that many rounds in only 6.5 man hours. At 10:00 P.M. I made a head count of the birds left in town and could see only 12 birds on the store fronts. However, birds were still roosting on the transmission lines in the alleys.

Ed Moyer reported that the next night only a tenth of the birds returned. The following night "Birds were very scarce and were found with some difficulty."

Mr. Isley was contacted on March 23rd regarding the program and stated that the birds had come back in at intervals. Other treatments had to be made 12, 23, and 33 days later. However, he stated that the birds were nowhere near as numerous and were very easily "spacked" with only a half-dozen rounds. The days that birds returned to town seemed to be correlated with spells of below freezing weather.

SUMMARY AND CONCLUSIONS

	Marion, Ind.	Peoria, Ill.	Joplin, Mo.	Columbia, Mo.
Estimated area involved with bird problem (city blocks)	12	.6 mile bridge	15	11
First night				
M-1 and M-2	375	90*	537	576
M-4	None available		136	42
Man/hours	10	8	12.5	6.5
Aver. HandCrackers/man-hr.	37	11	54	95
Other nights	3	4	6	2
M-1 and M-2	100	379	1,463	320
M-4	None available		264	180
Man/hours	12	46	95	12.5
Aver. HandCrackers/man-hr.	8	8	18	40
Total No. HandCrackers Used	475	469	2,400	1,118

* Some demonstration work had been done with HandCrackers 4 days before this project started and the birds were probably more easily moved.

From the above field experiences, certain limitations of the method are evident. While it appears feasible to break up urban bird roosts in the early fall before the roosting pattern is firmly established, the effectiveness of this technique appears to diminish when postponed until late winter. The influence of geographic location is undetermined (there is 4 degrees difference in latitude between Marion, Indiana, and Joplin, Missouri) because of other more important factors, such as timing and prevalence of protected roosts. However, there are indications that in more southern areas the birds may stay in the vicinity and be ready to move back to urban roosts at the first opportunity. Also, birds are more likely to return to a protected roost than an open one. This was clearly demonstrated in the Joplin project. Thus, local supervision of a program is imperative as it is necessary to keep in close touch with a project and repeat the treatments as necessary. The experiments in Peoria illustrated the main fallacy of the method in that it merely moved the birds to other areas without relieving the total problem. With this exception, all work was done on a community-basis in cities with about 40,000 residents. It appears reasonable to suppose that with a large enough crew, birds can be driven from a city of any size as our experience indicates that roosts are concentrated in limited areas of most cities. However, there are undoubtedly physical limits to this type of program.

To summarize, it would seem that with proper timing, persistence, and good local supervision, HandCrackers offer an economical and effective method of reducing urban bird roosts in individual locations or community-wide areas.

