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United States Navy
U.S.N.

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report...



U. S. NAVAL ORDNANCE LABORATORY

WHITE OAK, MD.

NOVEMBER 1952

Laboratory Dispensary Given Official "Outstanding" Rating

The NOL Dispensary has been assigned a mark of outstanding following its inspection on September 25 by Rear Admiral F. C. Greaves, MC, USN, Inspector General.

In the report of the inspection which was forwarded to the Commander of NOL, Admiral Greaves said, in part,

"The Naval Ordnance Laboratory is recognized as being the outstanding leader of the type of work it performs and its activities are closely observed by other leaders in the fields of industry and science. Its rolls contain a large number of highly skilled craftsmen and scientists whose duties sometimes prove hazardous to life and limb. This combination of circumstances brings into sharp focus the importance of maintaining an industrial medical program within the command which will parallel the industrial and scientific stature of its other activities.

"Professional care is predominantly that connected with industrial medicine. The manner in which this is being furnished under the supervision of the present medical officer is outstanding."

(Editor's note: At the time of the inspection of the medical services at NOL, Dr. G. B. Meyers was the medical officer at White Oak.)

Aeroballistic Research Colloquia Scheduled for November-December

The Aeronautical Facility of the University of Maryland will be described to Lab workers at the November-19 session of the Colloquia of the Aeroballistic Research Department. At that time A. W. Sherwood of the Aeronautical Department of the University of Maryland will be the guest speaker.

On November 26, I. Korobkin of the NOL Aeroballistics Division will address the members of the group on "Some Problems of Heat Conduction in Aeroballistics."

Unclassified colloquia scheduled for December are: December 3, "Approximation Method for Calculation of Turbulent Boundary Layer in Compressible Flow With Pressure Gradient," by H. U. Eckert, Wright Air Development Center, Dayton, Ohio; and December 10, "Relative Turbulence in Wind Tunnel," by A. Lange and P. Gieseler, NOL.

The Aeroballistic Research Department Colloquia are held on Wednesday mornings at 10:30 a. m. in Room 5-219.

100 Feet in Ten - - -



V. F. DeVOST, engineer of the Mechanical Evaluation Division, raises the carriage on the new 100-foot drop tester recently developed in the division. The tester is sling activated and can simulate a free fall up to 100 feet at accelerations of 50 to 250 g.

The Technical Evaluation Department has done it again. This time, in the Mechanical Evaluation Division, workers have devised a 100-foot drop tester which requires an overall height of but ten feet for its operation.

The drop tester, which is sling activated, was developed to incorporate several significant features. In the first place, because of its comparatively simple design, it is of relatively low cost. It is portable, in that the entire apparatus is mounted on a heavy floor plate rather than being fastened to the floor. And what is probably of major importance, it is the prototype of a design for production testing of ordnance components by Navy contractors. This will

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Scrap Yard Is Set Up to Receive Scrap and Salvage in New Drive

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Have you a "Fibber McGee" closet in your laboratory or office? Or even if you don't have such a storage place, do you have equipment, instruments or apparatus—or even components of these—that you are not using and won't need in the immediate future?

If the answer to either question is "yes," you are going to be very popular with the NOL Scrap and Salvage Committee which this week begins a drive to collect all such material for scrap or salvage. A telephone call to the new scrap and salvage office, extension 733, will be all that is necessary for disposition of items that are scrap, damaged, obsolete, defective, salvageable or excess. They may be new or old, in good shape or unusable. If they can be salvaged, they will be repaired or put in condition for other workers to use. If they are already in good condition, but simply not needed longer, they will be passed on to people who need them. If they are unusable or unrepairable they will be scrapped.

The Supply Department has been alerted and is prepared to take care of all scrap in its new scrap yard in the "T" area. Unused instruments will be returned to the instrument room, extension 479, for reissue to people who have immediate need for them.

As a special feature of this drive, project workers are invited to let the scavenger in them come out. They may visit the scrap area and poke around to see if material which they use may have been turned in by another worker. In several instances, particularly where

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NOL Employees Will Return To 40-Hour Week in January

NOL will officially end its 45-hour work week and return to the 40-hour week on January 5, it has been announced. At the same time, however, management pointed out that overtime will still be required in many of the technical sections as it will be necessary to maintain a high technical output.

For all employees the regular work day will begin at 8 a. m. and the end of the regular day will be at 4:30 or 4:45 p. m., depending on the lunch hour arrangements for employees concerned.

Vertical Injection Molding Machine Is Built for NOL Plastics Branch

NOL's Plastics Branch has expanded its already versatile plastics molding facilities by installing a four-ounce Watson-Stillman vertical injection molding machine. This machine was specially built by the Watson-Stillman Company to NOL specifications to be capable of maximum efficiency in production runs, yet provide accurate control over all molding variables in experimental and research molding. It embodies operating and molding features consistent with the latest trends in plastics molding techniques.

The addition of this machine fills a gap long existing between the one-ounce capacity Van Dorn machine and the twelve-ounce capacity Watson-Stillman machine now operating in the plastics shop. (The ounce rating refers to the maximum weight of material the machine is capable of molding in one cycle.) Many of the prototypes molded by the plastics facility have been slightly over the weight capacity of the one-ounce machine but far below the efficient operating range of the large machine. This new four-ounce capacity machine efficiently handles these intermediate jobs.

In selecting this machine, the Plastics Branch set certain requirements. The machine must develop high controlled molding pressures for molding pieces with thick sections, otherwise large shrink marks and bubbles are inevitable. It must be capable of molding those plastics which are corrosive in the molten state such as Kel-F (trifluorochloroethylene) and certain vinyls. Injection molding of these materials is not possible with the branch's older equipment because the corrosive action would soon damage the steel heating cylinder. The

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H. A. PERRY, Jr., Chief of the Plastics Branch, adjusts one of the controls (right) of the new four-ounce injection molding machine recently installed in Building 70. Looking on is Edwin Eagle-son (left) who is an engineer in the Plastics Branch.



THERE'S A LOT OF EMPTY SPACE in this salvage and scrap storage yard which has been set up by the Supply Department to take care of the scrap and salvageable material to be turned in by Laboratory workers during the drive which begins this week. In the insert R. L. Oakes (left), a committee member, and Lieutenant J. D. Roderick, committee chairman, discuss plans for collecting and salvaging the material. They need help in filling up the empty space.

Scrap and Salvage

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components are needed, workers have been able to salvage badly needed parts more quickly and certainly more cheaply than they could have been purchased.

The Supply Department, in connection with the drive, has also arranged to provide temporary or permanent storage for such items as inert ordnance materials until such time as they are needed. It will no longer be permissible to "dump" such things in the "crane runway" or in the "apple tree area." Instead, the Storage Officer on extension 430 should be notified, and he will immediately arrange to have the material properly tagged and stored.

The need for the new drive was pointed out by the previous one held during the early summer. At that time 261 tons of scrap were collected, 29,256 items (worth \$67,824) returned to stock for reuse, and 85 instruments (worth \$54,600) returned to the Instrument Standardization and Repair Division.

This scrap and salvage drive was carried out by a committee headed by Lieutenant J. D. Roderick, who was assisted by Lieutenant H. W. Williams, of Public Works; J. W. Harden, of the Technical Shops; W. R. Pace, of Supply; G. H. Hoppin, of the Technical Director's staff, and B. M. Shepard of the Aeroballistic Research Department. Each division delegated an employee to act as that division's representative.

The drive was slow in gaining momentum, due to failure to get "the word" disseminated as to its nature and purpose. Supervisors and project workers alike, judging from the questions they

asked, seemed not to have received the information they needed in order to cooperate effectively.

What might best be called a squirrel-like tendency proved to another drawback to the drive. This amounted to hoarding or stock-piling critically needed equipment anxiously awaited in other sections of the Laboratory.

However, the strong points more than balanced the weaknesses. Genuine cooperation and enthusiasm was shown by the majority of the staff in relinquishing the 29,000-odd items and instruments for systematic stowing and re-issue. The impressive final results of the drive amply prove this. Moreover, continued support and assistance from the various division representatives was a feature of the entire drive. Interest on all levels was directed toward the methods and procedures for effecting the removal of scrap and salvage material from the working areas to the Supply Department for processing.

For the present drive, when it is expected that the remainder—and probably even larger amounts—of material for scrap and salvage will be returned, a special scrap yard has been set up in the "T" area.

Lt. Roderick will again head the drive. His committee of assistants includes Mr. Harden, Mr. Hoppin, Mr. Pace, R. L. Oakes, and a member of one of the engineering departments.

It is to the advantage of the Lab as a whole that equipment not in use be made available for use by other workers. This committee has been set up to make that equipment available where possible or to scrap that—and only that—which cannot be used or repaired.



Safety Suggestions

By GEORGE S. ENNIS

The "FIGHT FOR LIFE" is the title of the Annual Report presented by the President of the National Safety Council at its 40th Congress and Exposition. The "big show" for the 12,000 safety delegates was held in Chicago the week of October 20, with programs of some 175 sessions presenting about 500 speakers.

Here at this Congress, regardless of the delegate's specialized interest, could be found an earnest group to discuss with him the accident problem in his particular field.

The fight to control accident occurrence started 40 years ago, in 1912. During this period reductions in annual accident death rates represent a saving of 500,000 human lives.

The Council President, in his report stated that we are winning our fight against accident occurrence for these reasons:

"We know so much more about how to prevent accidents than we used to . . ."

"The public is much more safety-conscious now than ever before, . . ." and more important,

"Never before in all the history of safety have so many people pooled their efforts in a coordinated and united fight on accidents."

I believe our safety record here at NOL is an endorsement of these reasons because it is our knowledge, our safety-consciousness and above all our pooled and coordinated effort—yes, the NOL Spirit—which has established our facility as one of the safest in the Department of Defense.

Drop Tester

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mean that the contractors will be able to shock test their products in their own factories as they are being manufactured so that a quality control may be applied during the fabrication and as a check after the operation is complete.

The new NOL Drop Tester consists of two vertical columns about ten feet high, between which is a carriage guided by cables. Within the left hand column is an elastic shock cord to provide energy for propelling the carriage, which is raised by a hoist cable which runs through the right hand column. The motor and gear drive for the hoist is located in a cabinet just to the right of the hoist column. Below the carriage is a hollow rubber cone cylinder which is filled with sand. It serves to stop the carriage when it is released.

A calibrated guide is mounted on the right hand column. By adjusting the height of the carriage to a predetermined point velocity changes equivalent to the drop in free fall from one to 100 feet can be simulated resulting in ac-



THE "VICTORY CAKE" of the NOL Softball Association is cut by J. W. Stevens, captain of the champion "Junebugs" team. The cake was the piece de resistance at a victory luncheon held last month. Over 200 NOL employees participated in the league of eight teams during the 1952 season. The "Junebugs" won both the regular play and the NOL World Series. Watching at the cake-cutting are Captain E. L. Woodyard, Commander of NOL, and Lieutenant J. D. Roderick, 1952 secretary-treasurer of the NOL Softball Association.

celeration peaks of 50-250g and durations of 20 to 40 milliseconds.

In operation, the carriage, on which may be mounted an ordnance component up to ten pounds in weight and up to eight inches in diameter, is raised by the hoist to the desired height. It is then released by a "mine release mechanism" which has been modified for hydraulic operation and pulled against the rubber stopping device by the shock cord. This cord consists of many small rubber strips held together by an elastic fabric covering. The rubber stopping device is supported by a heavy anvil whose seismic mounting isolates the shock from the floor plate. The stopping device is easily readied for reuse by pounding it back into shape with a rubber mallet.

Development of the new shock tester was a joint project of several members of the division, with V. F. DeVost making the major and most significant contributions. He and J. C. Fisher, who is chief of the Shock Test and Design Section, have applied for a patent on the stopping device. Other contributions to the design of the drop tester were made by John L. Luttrell, senior mechanical officer, H. J. Armstrong, chief of the Mechanical Evaluation Division, and J. C. New, chief of the Simulation and Design Branch under whom the work was accomplished.

Although the design of this machine is covered by government patents the drawings and specifications will be made available to ordnance contractors in order that they may duplicate the drop tester for quality control use.

Incomplete Returns Show \$19,018 Contributed in Lab's Charity Drive

NOL employees had pledged \$19,018.40 in the One Fund Charity Drive as of noon of October 31. Although the Drive closed on that date, the total does not indicate the total amount pledged since many returns were late.

At the close of the Drive, the Technical Services Department was leading the rest of the Laboratory in the percentage of personnel participating. Second was the Administrative Department, third was Technical Evaluation and fourth was Fuze. At that time, 2,070 employees of NOL had made pledges.

October Housekeeping Scores

Six departments had perfect scores in the October housekeeping inspection which took place on October 24. Top departments in the Administrative League were Explosives Research, Supply, Technical Evaluation and the Offices of the Commander and Technical Director. In the Operational League, top position was shared by Supply and Public Works.

Second place position was taken by Aeroballistic Research, Technical Services and Personnel in the Administrative League and by Technical Services, Administrative and Engineering in the Operational League.

In third place was Public Works in the Administrative League and Technical Evaluation in the Operational League.