

A PLEA FOR UNIFORMITY IN THE PACKAGING OF LUBRICATING GREASES

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INTRODUCTION

That mysterious cult known as the Advertising Profession states that conducting a business without Advertising is like winking at a girl in the dark -- you know what you're doing, but nobody else does.

And it certainly seems to me that our bretheren of high-powered sales have a point that Engineers could well afford to adopt with reference to their problems.

For years, designers and builders of grease dispensing equipment, and all those concerned with the stocking, selling and dispensing of lubricating grease have been plagued with the lack of "standardization" regarding the physical dimensions of grease containers. Nothing has happened from an Industry-wide standpoint to change this regrettable situation, despite the fact that Industry has standardized on everything else from brooms to labor policies for obvious reasons of economy and efficient operation.

The time has certainly come, we believe, to "advertise" this situation for the wasteful problem it is, and to actively seek a constructive solution. We realize, of course, that the N. L. G. I., as an organization, is not qualified legally or otherwise to promulgate or establish standards or specifications. But we do believe that the members of the Institute, representing influential segments of the Petroleum and Lubricating Equipment Industries, can render an invaluable service to Industry in general and no less to themselves by helping to make a practical program of Standardization a reality.

THE PROBLEM:

In order to quickly review the problem, we will group grease containers into three classifications: (1) Pails of 25 lb., 35 lb., 40 lb., and 50 lb. sizes; (2) 100 lb. drums of Eastern and Western style; and (3) the 400 lb. drums, totaling seven major groups.

To graphically illustrate the variations in physical dimensions of these various containers, we have prepared some glass slides which show these differences in chart form. No attempt has been made to cover in these charts all the units used by the many manufacturers of lubricating grease, but do show the major variations. The dimensions, illustrated, have been taken directly from manufacturer's specifications.

SLIDE #1 -- PAILS

On the right side of the slide there is pictured a full view of the so-called normal container. On the left side is shown the position of the bead of the various containers in relationship to height and diameter. The variations in the 25 lb. pail are 1-7/8" in diameter and 2-1/2" in the height. The 35 lb. pail varies 5/8" in diameter and 15/16" in height. The 40 and 50 lb. pails reflect less variations, but are shown to bring out the diversification of the major container size. Why four sizes with only a 25 lb. capacity difference? Strangely enough, there is a standard for 25 lb. and 35 lb. pails. Both are a 11-1/4" diameter with a height of 9-3/16" for 25 lb. pail, and 13-1/2" for the 35 lb. pail. (Note the position of the two black beads on the chart, marked "Gov't. Std.")

This is a joint Army-Navy specification JAN-P-124A which is a must when furnishing grease for Military requirement in 25 or 35 lb. packages. Such an established specification could well form the basis or starting point for an entire Standardization Program, possibly deleting those standards applying to types of sizes of containers not commonly used in the Lubricating Grease Industry. It is interesting to note that one grease container manufacturer mentions the Government Specification as being of definite practical value in Industry.

SLIDE #2 -- 100# EASTERN AND WESTERN DRUMS

In the overall category, there are two major groups of containers commonly referred to as Eastern and Western Style Drums. This situation alone requires the Grease Dispensing Equipment Industry to double the number of required visible drum units and to greatly enlarge the size of the cover on the decorative sleeve models. Some of these drums are 110 lbs., thus further complicating the situation. The Eastern Drums vary from 14" to 15-1/4" in diameter, or a total of 1-1/4", and in the overall height from 21-7/8" to 24", or 2-1/8" total. The Western Drums show a variation of 3/8" in diameter and a normal variation in height, but obviously differ from Eastern style to such an extent that the same dispensing equipment cannot operate in both styles.

SLIDE #3 -- FINALLY THE 400 LB. DRUMS

The 400 lb. containers offer a variety of sizes ranging from 22-13/16" to 23-13/16" on the diameter - a total variance of 1"; or from 34-3/8" to 35-1/2" on the overall height - a total variance of 1-1/8". Throughout all three of the previously mentioned major groups, abnormally off-sized containers have been discovered in the field. Most of these originated under war-time conditions, or during times of material shortages and have not been listed here since we wish to confine this presentation to the containers meeting the specifications of the various grease manufacturers, and used as a normal part of the operating job.

Of course, the variation in the sizes of grease containers has no affect on their capacity to perform their required task. However, the function started by the sale of the lubricant to the customer is not completed until the lubricant is injected into the bearing with some type of dispensing device. The following series of slides points up the major problems created by the varying containers.

SLIDE #4 -- VARYING HEIGHT OF DRUMS

Assuming the length of the dispensing pump tube to be standard, an Extra High Drum causes the whole pump assembly to be raised in relation to the bottom of the drum. Using the Eastern style 100# drum as an example, the variation of 2-1/8" in overall height would cause two more inches of lubricant to be left in the bottom of the drum than normally remains. The customer, after removing those several extra inches a few times by hand, will soon tire of that tedious, messy task, and register a justifiable complaint. In the case of a large volume Gasoline Service Station, a good percentage of that station's grease rack profits would be eliminated, or added expenses incurred if the lubricant were removed by hand methods, labor costs being what they are.

With Extra Short Drum the reverse is true. The bottom of the pump tube contacts the bottom of the container before the drum cover contacts the top of the drum at the bead. The drum cover serves to locate the pump and hold it in its normal central position. Under these conditions the pump will fall to the side exposing the lubricant to subsequent contamination.

SLIDE #5 -- CONTAINERS EXTRA LARGE ON THE DIAMETER

Under this circumstance, the normal sized drum cover is not large enough in diameter to fit over the edge of the container bead. This not only raises the position of the pump in relation to the bottom of the container, but also leaves the pump in a very unstable position. Of course, the diameter of the drum cover can be increased to meet these requirements, but we never seem to get one big enough, and at the same time, the variation to the small side would make this larger drum cover unsuitable for clamping on the small O.D. drums. At present we are supplying two sets of different length bolts with each drum cover assembly to meet more nearly all field conditions.

SLIDE #6 -- EFFECT OF DRUM DIAMETER ON USE OF FOLLOWER PLATES

At the same time the diameter variation causes difficulties in effective employment of follower plates which are used with the heavier, non-following lubricants. The follower plate adds its cast iron weight to the surface of the lubricant and also seals the vacuum created as the lubricant is pumped out of the container below the follower. These followers should fit reasonably close to maintain this seal, but with the variety of inside diameters this is next to impossible. In addition, the packaging of the heavier

lubricants, such as the popular all-purpose greases in half-open drums, prevents the use of a follower plate and, as a result the grease pump leaves a large quantity of lubricant in the container.

SLIDE #7 -- 25 AND 50 LB. UNITS

This standard model pump used for the dispensing of lubricating grease from original 25 lb. and 50 lb. refinery containers offers a choice of three different follower plates. The proper size can be determined only after measuring the inside diameter of the container being used. This indicates the acceptance by our industry of this inherent problem. However, if the customer who has bought this grease dispensing device changes his lubricant source he may find a need, eventually, for all three sized follower plates.

SLIDE #8 -- PRESSURE PRIMER

In the Industrial field a trend has been noticeable within the last few years that further complicates this problem. In the interest of economy and good housekeeping, Industrial users of relatively large quantities of lubricants - as on production line operations of truck and farm implement manufacturers - are using elevating and drum cleaning devices, as pictured on this slide. This device is simply a follower plate attached to the pump tube of the dispensing equipment. This follower plate and pump are loaded pneumatically to apply pressure to the top surface of the lubricant, and also provides a lifting device for the pump when it is necessary to remove it from the drum. As noted above, the variation in drum size would cause trouble with this follower. A resilient sealing member around the periphery of the follower wipes the drum clean if grease is consistently furnished in drum of same diameter. A follower of this type will take care of normal production tolerance of a specific diameter. You can readily picture customer reaction to a shipment of grease from the same source of supply in a different size drum after investing in equipment of this type for dispensing the lubricant.

FIELD COMPLAINTS

Several recent field complaints confirm some of the previously mentioned problems. In the one case, our California office advised us that they were obliged to shorten the lengths of our standard pump tubes by 1/2" in order that the bottom of the tube would not contact the bottom of certain containers. Our files showed that two years ago we had lengthened these pumps to answer complaints of that date from the same field force. In view of this we wrote the grease manufacturers involved and were given the name of the steel fabricator of the containers in question. Correspondence with this fabricator revealed the fact that they were aware of the variance in the critical dimensions, but that correction had been delayed pending the establishment of standards within their own organization. At this time, new fabricating tools are being made, and a standard drum, as far as one company is concerned, is assured.

Another field complaint, originating in one of our eastern territories, conveyed reports from our customers that the drum cover supplied with one of our popular visible drum models would not fit over the bead of a particular 100# drum and, as a result, the pumping unit could not be secured to the container. Within a few days, similar reports were received from Portland, Pittsburgh and St. Louis. In each case the lubricating grease distributor explained that he had received new shipments of packaged grease from the manufacturer in recent days. In the St. Louis area about 200 individual packages were involved. A check with the grease manufacturer showed that their normal specifications dictated the use of containers which would easily fit the standard drum cover. However, in this instance, a shortage of containers had forced them to use a non-standard drum. In this case and many others a number of grease manufacturer customers and grease dispensing equipment customers were dissatisfied, at least temporarily, by the failure of the package and equipment to compliment each other.

CONCLUSION

An excellent editorial entitled "Most Oil Companies Believe Uniformity in Containers Would Cut Handling Costs", published in the August 8, 1948 issue of NATIONAL PETROLEUM NEWS states ---

"Oil companies are achieving standardization of packaging within the individual company organization by carrying out continuing studies of their own problems and by working with container manufacturers, but most companies contacted by

NPN in a survey believe further standardization is desirable and could be accomplished.

Companies generally would cooperate in a limited standardization program if it were conducted by a responsible disinterested organization, the survey shows.

In seeking information on the need for standardization, NPN did not ask for data on color of packages or labels and other printing on the containers. This is believed to be an individual company problem and is closely tied in with brand identification and advertising.

Almost all major oil executives contacted believe industry-wide efforts would bring about further standardization with resulting reduction in warehousing, transportation, marketing and other costs."

I consider the information in this editorial of sufficient interest to all members of the N.L.G.I. that a reprint of same is attached as an appendix to copies of this paper.

The feelings expressed in 1948 have not been allowed to go unheeded. I understand that within the Packaging Institute, Inc., there is a Petroleum Sub-Committee which is at work on all phases of packaging in the industry, and is paying particular heed to various sources regarding the matter of uniformity of containers.

Also, even more recently, our Institute joined hands with the American Petroleum Institute to form a Joint Container Committee. This Committee has just recently started its work, but I am informed that already a preliminary survey has been made of the particular problems besetting the lubricating equipment manufacturers pertaining to the difficulty in designing pumping units to fit the multitude of various size containers.

Both of these lines of endeavor are certainly steps in the right direction, but I feel that my purpose here is to ask that all concerned recognize the urgency of this situation and get into action as soon as possible, because, as you have seen, not a day goes by without our having to cope with this serious problem.

Executives of most lubricating grease manufacturers indicated in their interview with Mr. Charles Boyd, Jr., who conducted the NPN survey, that it was their belief an industry-wide standardization program would bring benefits in many related fields other than that of grease dispensing equipment. A few of the more obvious are:

- 1) Consolidation of container purchasing and manufacture.
- 2) Reduction in cost of container manufacture. Container fabricators would be able to set up production facilities on standard drums for longer runs to supply a number of different grease manufacturers.
- 3) Reduction of warehousing costs through better storage and by the ability to make smaller purchases of standard articles.
- 4) Simplification of customer selection by reduced number of packages of one item.
- 5) Limited Container sizes with automatic reduction of inventory.
- 6) More efficiency in the handling, filling and shipping of containers.

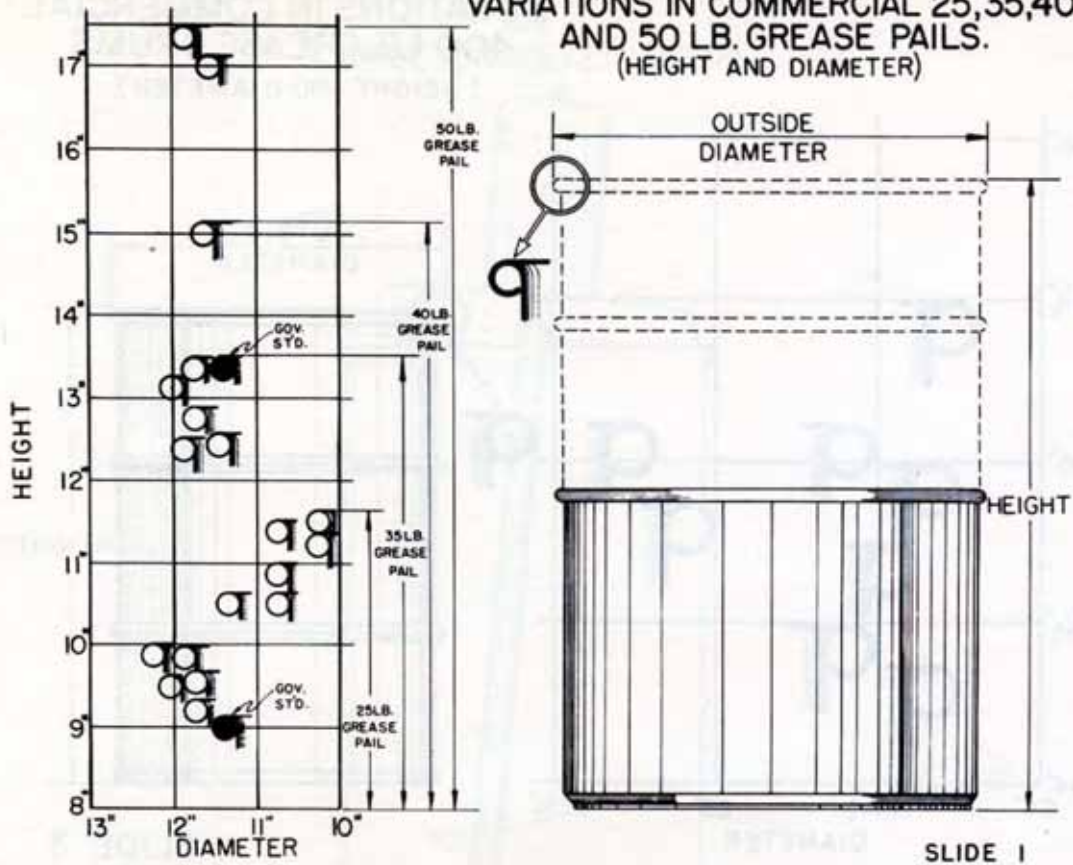
We have reviewed the problem resulting from lack of packaging standardization from the viewpoint of the manufacturers of lubricating grease dispensing equipment. And I can safely say that a packaging standardization program carries the endorsement of all major manufacturers in this field whose affirmative opinions are a matter of record.

The majority of major oil company executives recognize the benefits to be derived from such a Program, as indicated in the NPN Survey.

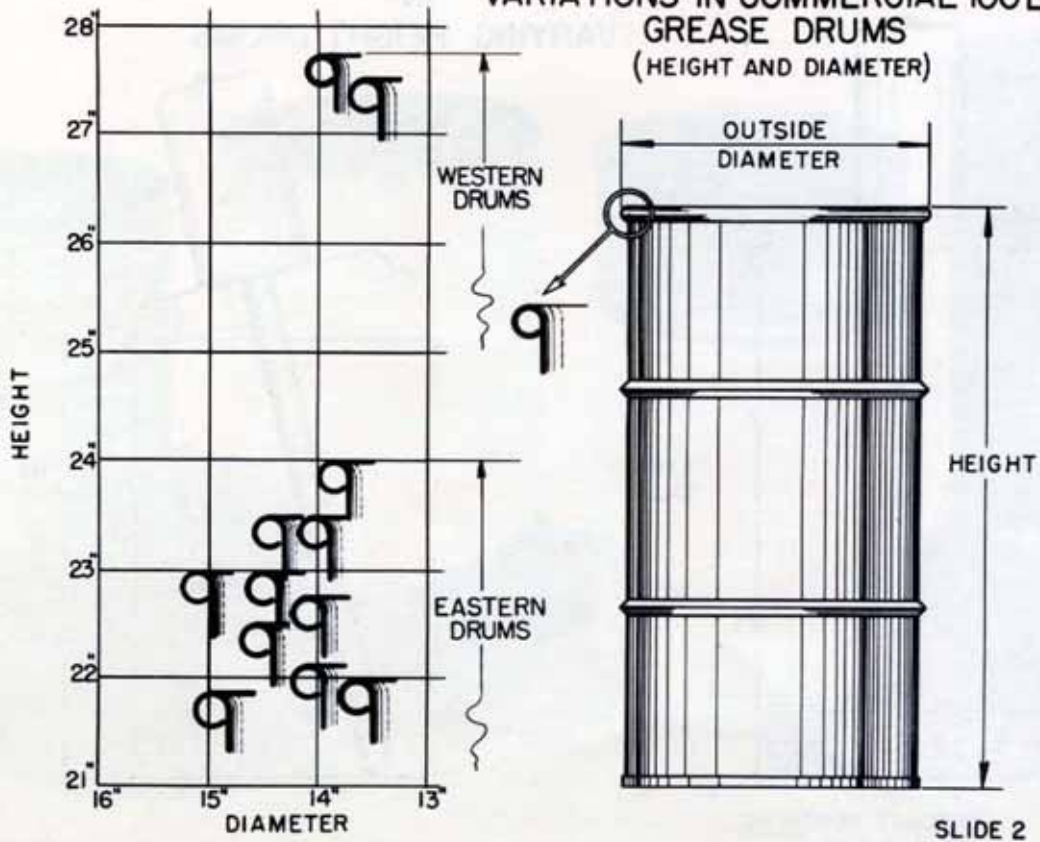
The achievement of such a Program is nothing new -- it has been done before. An example is the packaging standardization program affected by the Oil Industry on household insecticides.

If we may assume then, that the majority of manufacturers in the Industries concerned are favorable to such a Program, it remains only for these Industries to create a panel of representatives to work with the A.S.A. and the National Bureau of Standards to make this vitally needed program a reality.

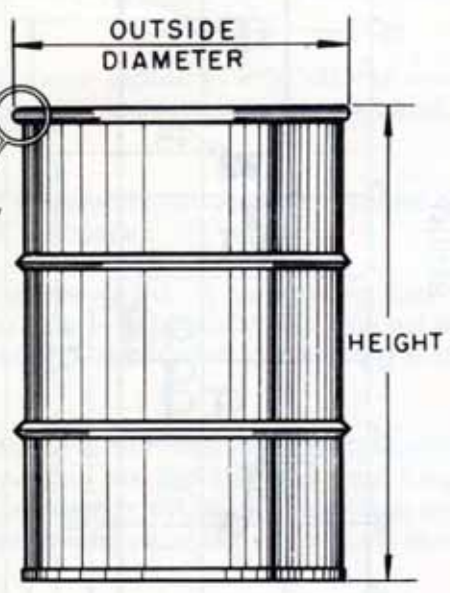
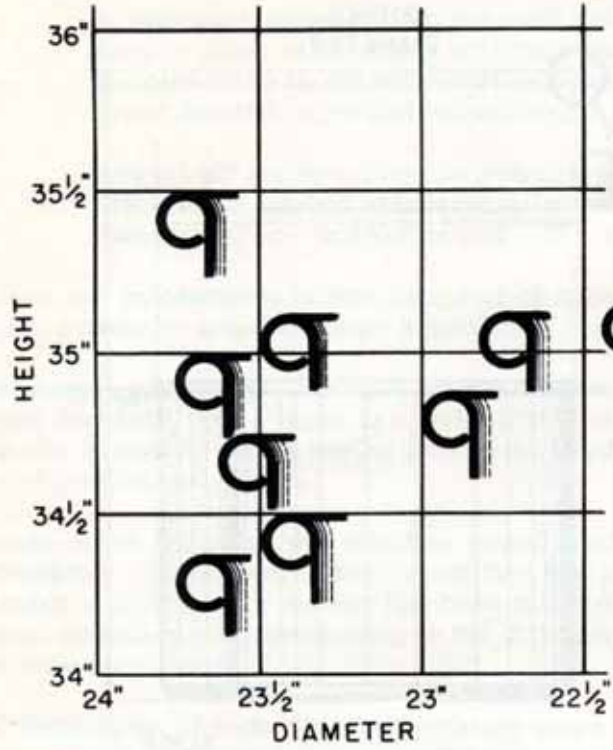
VARIATIONS IN COMMERCIAL 25,35,40, AND 50 LB. GREASE PAILS.
(HEIGHT AND DIAMETER)



VARIATIONS IN COMMERCIAL 100 LB. GREASE DRUMS
(HEIGHT AND DIAMETER)

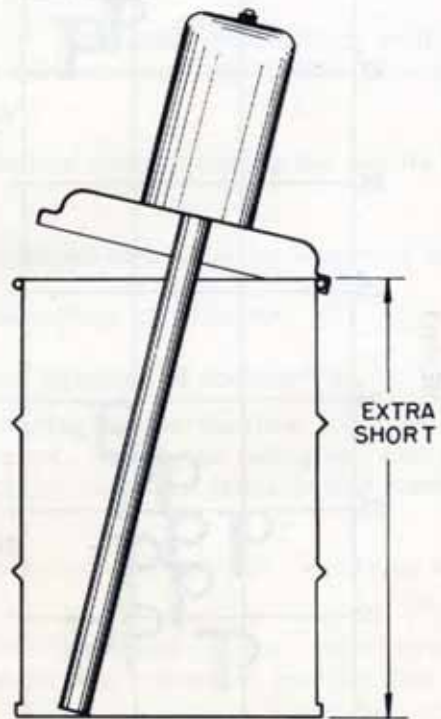
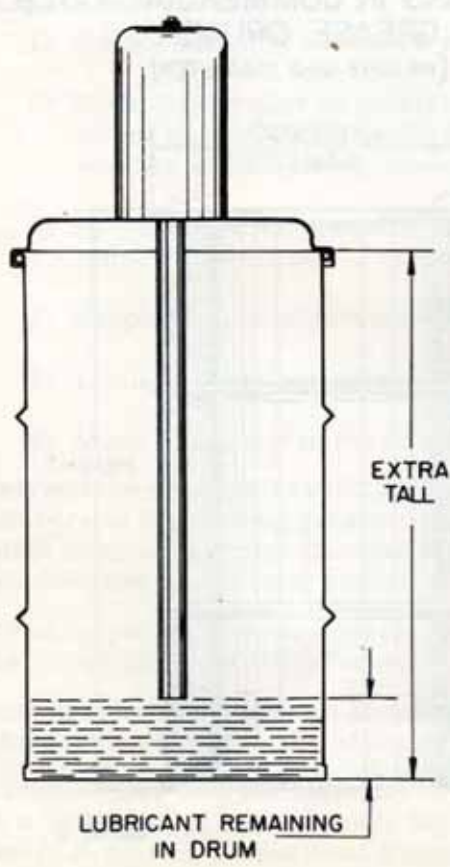


VARIATIONS IN COMMERCIAL
400 LB. GREASE DRUMS
(HEIGHT AND DIAMETER)



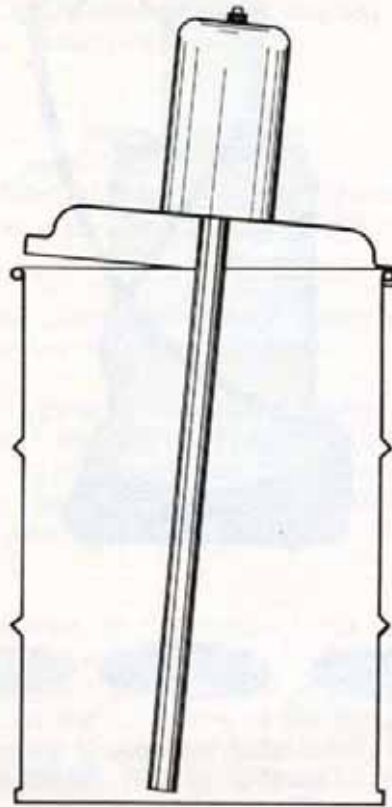
SLIDE 3

STANDARD PUMP
IN
VARYING HEIGHT DRUMS

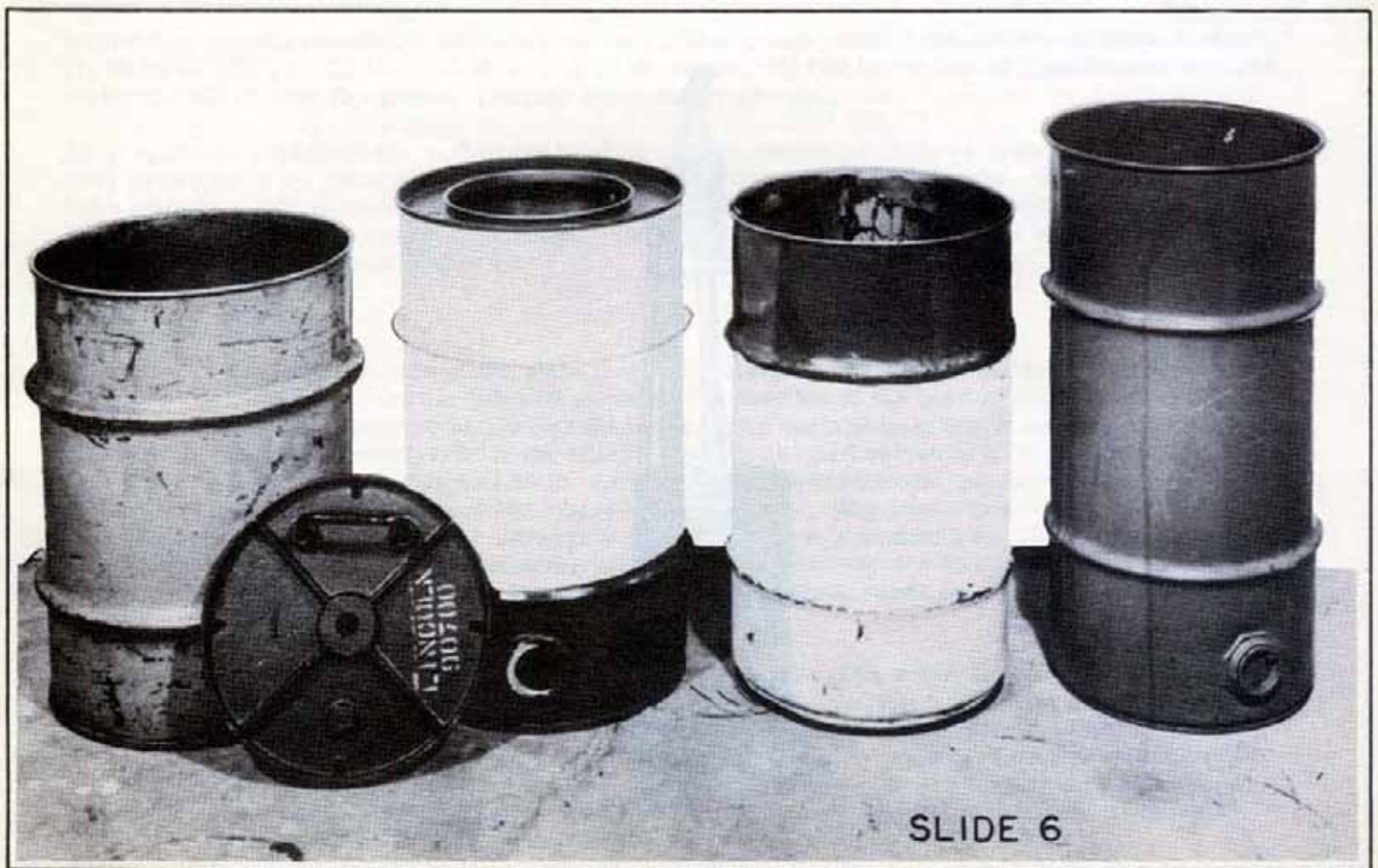


SLIDE 4

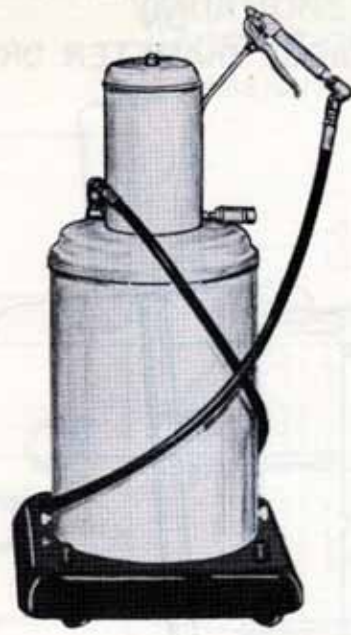
STANDARD DRUM COVER
ON
LARGE DIAMETER DRUM



SLIDE 5



SLIDE 6



SLIDE 7



SLIDE 8