

STALEY NEWS

Vol. 5—Page 1

March 1, 1943

Soyflour Industry Comes of Age

Before the war the American soyflour industry was a nice little business that kicked along on a total production of several million pounds a year and tried to talk Americans into using more. Mostly, however, it just convinced the diabetics and the food faddists because you and I were used to wheat flour, liked it and saw no reason to change. It didn't matter to us that soyflour was just as good a source of proteins as eggs and meat or that it contained valuable fats because we had all the meat and eggs we wanted and the fact that they cost more didn't make much difference.

So when the war caused a cry to go up for more starch and we had to expand the oil house to increase our grind and couldn't buy the necessary expellers and driers to do it, we heaved a sigh for what might have been and then grabbed the expellers and driers that we had used to make soyflour and put them to work on corn germs.

After We Quit Talking We Sold a Bill of Goods

Sometime later the government said to us, "Hey, aren't you the guys that have been beating the drum so hard for soyflour? Well, I thought so. By the way, start shipping us more than you can make right away." We had to admit that we had gone out of the soyflour business so we could make more starch and they said, "O.K., but get back in—and fast." So, as you know, we did. The plant we built wasn't what we'd call ideal by any means but it did get into production quickly and it did make more soyflour than we had ever made before.

And That Wasn't Enough

Then the government started pouring it on. Soyflour, a perfect food if we ever heard of one, went into Army rations. Soyflour went to England and Russia where meat and other protein foods were tragically short and it went in such quantities

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Corn Grind Priority Granted

Well, that project priority application for increasing our corn grind by continuous steeping turned out to be just as slick as we bragged it was and it zoomed through the Department of Agriculture and the W.P.B. without anyone ever suggesting that we use 15/64" x 2-15/16" stove bolts instead of the 1/4" x 3" that we requested. We don't know but what we'll frame the whole thing.

But now comes the payoff. We have to beat the promise and get the job done. As John Askren says, "Gracious (or words to that effect), now we really have to go to work." Which we do.

Pensions Have Cost Us \$227,295.69 in Two Years

Just seeing the statements in our annual report that we spent \$20,943.99 for the purchase of retirement annuities in 1941, set aside \$170,000 that year for those who were eligible to retire but who chose to continue work and allotted \$36,351.70 in 1942 to continue and liberalize the plan doesn't mean much so you have to bring those figures down to individual cases to see how they look.

How Much Is Due You?

First, let's take a look at a table that indicates what your retirement benefits would be if you were eligible to retire this year and had an average monthly wage, since January 1, 1937, of anywhere up to \$250 a month. We haven't included those whose monthly wage is higher than \$250 because another factor is introduced there and that is the length of time that amounts over \$250 a month have been received and how large the amounts are.

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Monosodium Glutamate Soups Up Soup

Monosodium glutamate, a protein derivative, has been used in the Orient for many years as a flavoring for soups and other foods. Added in the right proportions it gives a meaty nutlike flavor that makes soups much more tasty and American soup manufacturers have been using it for quite a while. Before the war a country called Japan (remember?) had a practical monopoly on the business because they produced it cheaply from wheat (and then sold the remaining wheat starch in competition with our corn starch). But they quit selling things to us early in the morning on December 7, 1941, and we found that our domestic production wouldn't fill the demand since both our soldiers and our allies need lots of soup and monosodium glutamate perks up its taste.

This Is Where We Came In

Well, getting back to Decatur, Illinois, we started thinking about glutamate about twelve years ago as a product which would use our extra gluten and we worked out a process in the laboratory for making it. But the process was a tricky devil and it was a long time before it was far enough along to think of putting it into a pilot plant. But finally it was and we did. And we were just getting the insects nicely worked out of it when said Japanese started said war. So, because we were reluctant to ask for critical materials to continue the manufacture of what was, after all, just a flavoring, we quit business.

But by now the government is beginning to feel that that flavoring is pretty important so, like on the soyflour deal, they have asked us, and everyone else who knows how to make monosodium glutamate, to submit plans and say what tonnage we could produce. We have submitted three alternative plans, together with lists of critical materials down to the last scrap of iron, and asked them to

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MORE ABOUT SOYFLOUR

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that Lend-Lease occasionally placed single orders for more pounds of soyflour than this country had produced in a whole pre-war year. Right now there are orders out for several times as much as the country manufactured in all of 1941.

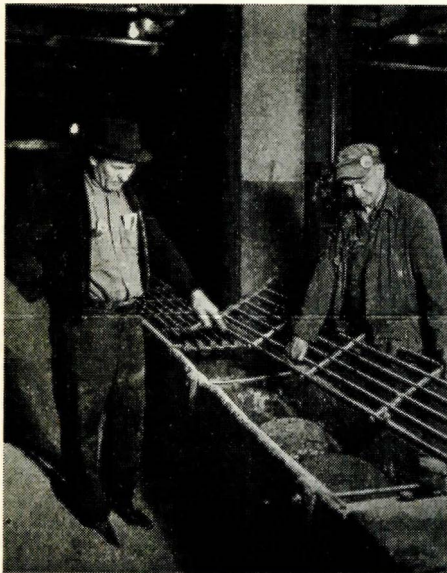
And Still Isn't Enough

That isn't the end. The Department of Agriculture is guessing now that the need may multiply several times in the next year and that, friends, will require some soyflour. While they're deciding for sure how much they'll need they are also realizing that the country's productive capacity will have to be jacked up pretty high to produce enough. So they have asked us, and every other soy-

Know Your

Staley Safety

C O D E



19. BE SURE THAT EVERYONE IS IN THE CLEAR BEFORE STARTING A SCREW CONVEYOR AND BE SURE ALL LIDS ARE ON. KEEP HANDS OUT WHEN CONVEYORS ARE IN OPERATION.

- Don't put your hand in to get a sample. You may leave a sample of your hand.

flour producer, to submit plans for expansion which will use almost no critical materials but which will produce lots and lots of soyflour. And our engineers (as Mr. Scheiter says, "ingenious folks that they are") have prepared and submitted such a plan. Because of the restrictions the plan is pretty Rube Goldberg but we'll bet you a pound of our best soyflour that it will work.

So we are set, temporarily, for whatever comes and after the war we expect, and the government does too, that the soyflour industry will be much larger than it was before and that Americans will be better nourished as a consequence.

MORE ABOUT PENSIONS

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Av. Monthly Wage Since 1-1-37	Amount Rec'd Monthly from Soc. Security	Amount Rec'd Monthly from Staley Co.	Total Monthly Pension
\$100	\$26.50	\$18.50	\$45*
150	31.80	28.20	60
200	37.10	42.90	80
250	42.40	57.60	100

*\$45 would be the minimum payable even if earnings since 1-1-37 averaged less than \$100 per month.

Then let's translate those "Amounts Rec'd Monthly from Staley Co." into the size annuity policy we'll have to purchase from our insurance company to assure them.

When men retire at the age of 65 the mortality tables now in use by American insurance companies indicate that they will live, on an average, 14 years and 5 months. If they do, and the amount the insurance company must pay them is the minimum of \$18.50 per month, it will pay them a total of \$3220.50. To enable themselves to do that and make a profit too, the insurance company will have to charge us a premium of \$2817.55 for the policy. If the amount payable monthly runs to \$57.60 they'll want a premium of \$8772.48.

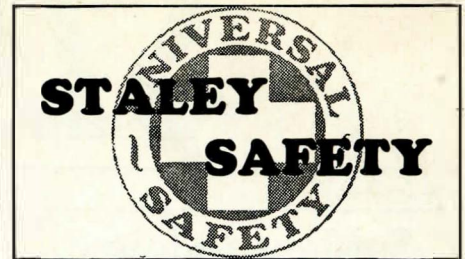
The Ladies Are More Expensive

For women, of course, those amounts run higher because their life expectancy, at 65, is 3 years and 2 months longer than their brothers' and husbands'.

And Soon We Will All Cost More

And those life expectancies are stretching out all the time. That's all to the good but it generates a problem. The longer we live after 65, the higher will be the premiums the insurance companies will want to

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By MYLO ROBERTS
Director of Safety

Shoes rationed! That order came out last month and immediately the question came up—How about Safety Shoes? Yes, they are included in the three pairs per year that the government is allowing each one of us. Stamp No. 17 must be collected for each pair of Safety Shoes sold. If for some reason or other you do not have Stamp 17, you may apply to the Rationing Board for a special shoe certificate.

Some of you may think—"Why 'waste' my stamp on Safety Shoes?" Well, you have to have shoes to work in and Safety Shoes will give you the protection for which you've bought them before. Now, more than ever before, that protection is necessary.

Perhaps you need a pair of dress shoes, and two pairs of work shoes don't last you a year. Are you going to have to work barefooted? Definitely not. If you have used your stamps and can show real need for shoes, the local board may issue a special shoe certificate so you can get additional shoes.

Safety Shoe sales last year were higher than they've been for many years. But in the last couple months they've dropped off. Not because you didn't want them, but because we couldn't get them. The manufacturers had to furnish the armed services, and war and munitions plants with higher priorities than ours. Now they've told us that we can expect more regular service but not less than six weeks delivery so will we please order that far ahead?

So if you've tried to get shoes and we didn't have your size, keep coming back or leave us your name so we can let you know when they come in. Take a look at your shoes and if you are going to need some new ones in a couple months, come up now and get your order in. In that way we can cooperate with the manufacturers in seeing that we can all keep wearing Safety Shoes.

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By The Personnel Department
For The Employees of

**THE A. E. STALEY
MANUFACTURING COMPANY**
DECATUR, ILLINOIS

W. G. REYNOLDS, Manager of Personnel
ROY ROLLINS, Editor

**Bud, Why Aren't You
in the Army?**

During the last war men of military age who were not in uniform were apt to be branded slackers with no investigation. It's different this time because America's job is not merely to raise an army but to raise an army *and* supply it *and* supply its allies too. That means that some of us must do the dangerous, glamorous jobs at the front and some of us must do the safer drudgery at home. **AND WITH EQUAL PRIDE.** Our country has wisely enacted a **SELECTIVE Service Act** and the Selective Service Boards will make the hard necessary choices that must be made and send this man, who would rather not go, to the army and that man, who would rather go, back to his job or his farm.

This article is addressed to those of you who, like your editor, are of military age but are not in uniform. You've been thinking of all your friends and relatives who are in the army and, try as you might, you haven't been able to entirely repress a feeling that you should be there too. Well shake it off! If and when you and I are needed in the army our government will say so and we'll go. Until then—listen, that phrase "Production Soldier" is not just a piece of ballyhoo that the W.P.B. thought up on a rainy Sunday afternoon. They mean it. They mean guys that know how to do an essential job, like producing food for example, and that are on that job every day and every hour that they are supposed to be there and able to be there and that are hitting the ball while they are there. If you are doing that kind of a job you're *on the team*. If you aren't—well, you have to live with that conscience of yours and don't think it won't talk back to you.

MORE ABOUT PENSIONS

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assure us a life income of decent size after retirement and, while we feel and hope that the future will provide answers to its own problems, the cost of pensions (at the rate of \$1523 per \$10.00 per month of assured income after 65 for men) is an item for all of us to keep soberly in mind.

MORE ABOUT GLUTAMATE

(Continued from page 1)

take their choice. We haven't heard from that one yet but some day we may and if they say go we'll be at it as quick as a chem. engineer can say, "Monosodium Glutamate".

Personnel Changes

A a result of a minor brainstorm we decided to try a new column in the News on personnel changes. We got two reasons. In the first place, this company is growing up so much that most of us have trouble keeping up with who's who on what and in the second place, the war is causing so many changes that they almost rank as war news.

So—Item Number One

Forrest Apperson, who has served as Manager of the Western Division of the Package Department, has been made Sales Manager of the Package Department. C. M. Coble will continue as Manager of the Eastern Division, while the former Western Division will be divided into a Central Division, headed by Mr. Kekeisen, and a Western Division, headed by Mr. Hinkley.

Marion Trow, who has served as Assistant to the Manager of Personnel for several years, has been promoted to Supervisor of Placement and will act as adviser on all office personnel changes and will also take charge of training for office personnel who want special training of any sort.

Marion's move set off a couple of promotions in the Personnel Department with Ruth Sutherland taking Marion's old job and Catharine Schmidt taking Ruth's former job as Secretary.

Because the Army got Clark Kikola, Peggy Ann Rainey was transferred from the Planning Department to the

Plant Superintendent's office and became the first girl messenger to ever hold that job from which so many presently successful Staley employees have graduated. Both Peggy and Harry Walmsley think that the idea is a good one.

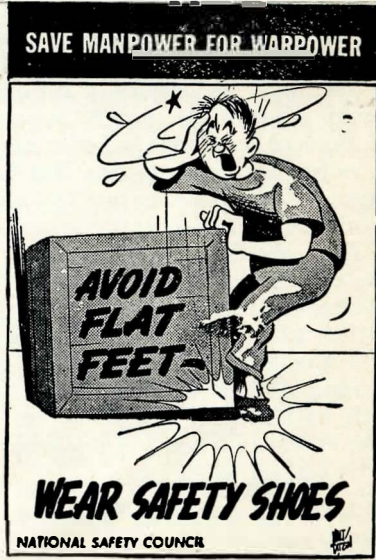
John Robert King, who was one of the finest quarterbacks that Decatur High School ever had (although very tough on your editor at that time), was transferred from his job as Stock Clerk in No. 20 Bldg. to L.C.L. Shipping Clerk in the same department when Murl Schull went to the Army.

George Roberts, who is reputed to have been a school teacher but who has no other bad habits, was transferred from the Refinery to the Financial Department as Assistant Paymaster.

You probably already know it but Leck Ruthrauff left the Plant Protection Department (just as his pistol score was beginning to get good) and took over John Anderson's job as Manager of the Fellowship Club.

Warren Smith (w.k. basketball player) was transferred from the Extra Board to the Messenger Department.

Additions during the month were: to the Personnel Department, Dale Gustin, who became Safety Office Clerk and to the Messenger Department, Dorothea Rogers, Alma Smith, Virginia Osborn, Betty Ross, Naomi Sparr, and Jack Miller.



How Wet Is Wet?

When you do wet processing you must provide answers to the question of, "How wet?" many times every day for many different materials and products. Much of our Control Laboratory's working time is spent in finding and recording those answers.

Moisture content determinations in our business are made by the use of one of three methods.

"Loss of Weight" Method

The simplest, and the one we use most frequently, is the "loss of weight" method. We weigh up a sample, say 10 grams, of starch, soybean meal, gluten feed, coal or whatever and put it into an electric oven which maintains a temperature of about 220° F. Since that is eight degrees above the boiling point of water, the moisture in the sample is vaporized and driven off as steam. The sample is then reweighed and the loss in weight indicates the amount of moisture it originally contained. Thus, if the 10 gram sample weighs only 9.4 grams when it comes out of the oven, it obviously originally contained .6 gram (or 6%) moisture. Trouble is that this method takes from two to twelve hours, depending on the nature of the material being tested, to produce an answer.

So in practice we often modify it by putting the oven under vacuum. The vacuum speeds up the drying rate by lowering the boiling point of water and pulling the vapors out. With this method moisture determinations are made in minutes rather than hours.

Carter-Simons Work in the Plant

It is necessary at some points in the process to make accurate moisture determinations quickly so that controls may be adjusted at once. Vacuum equipment would be cumbersome and one more thing to maintain so we use Carter-Simon Moisture Testers. As a first step we test samples of the material they are to test and find out how long it takes to drive all the moisture out at a temperature of 310° to 320° F. (10 minutes for starch). Then the oven is set to the proper temperature and the sample left in just the right length of time because if it stayed longer it would burn and decompose.

Drying Without Heat

Sometimes, in special cases or to set standards, we use a loss of weight method which does not use heat. The

trick is to put the sample into a sealed container which also contains a chemical, usually phosphorus pentoxide, that will soak up all the moisture in the container. This gives accurate results but takes far too much time to be valuable as an operating technique.

A Difficulty or Two

Oven drying methods are subject to errors of various sorts. Water is present in some materials both in a free state and adsorbed on or combined with the material. In attempting to measure free moisture (which is all that we are interested in) it is difficult to select a time or temperature which will not drive off some of the "bound water". Also, some materials decompose at higher temperatures and give off gases which may be calculated as moisture lost. Another trouble is that some materials (soybean oil, for example) may combine with air so that they actually gain rather than lose weight in testing. Those things, together with the possibility that someone may make just a tiny little error in testing or in calculation of his results, explain why chemists periodically throw their hair in the waste basket and roll their eyeballs wildly while working on such a comparatively simple thing as moisture determination.

Direct Methods

A second type of moisture determination methods are the so-called "direct" methods. They gain the name from the fact that with them we actually collect and measure the amount of water driven out of a sample.

One such method is toluene distillation. We place a 50 or 100 gram sample in a flask, cover it with toluene and connect it to a condenser. The toluene is then boiled and the vapors driven off carry with them all the moisture present in the sample. When condensed in a graduated cylinder the water separates out and can be measured directly in cubic centimeters which, for water, is the same as grams. Then, if 8 grams are collected from a 50 gram sample, the original moisture was 16%.

The direct methods have the advantage of being able to handle large samples quickly and they work well on very wet material. They are not noted for their accuracy, however, because the volume of distillate in the

cylinder cannot be read too accurately and it is hard to keep the equipment clean enough to be positive that no moisture remains in the condenser.

And Indirect Methods

Moisture content will usually affect other properties of a material and if these can be measured accurately they can be translated into moisture percentages.

For example, the relation of weight to moisture content in syrup, steep-water and starch water slurries is well known and we can determine moisture by measuring specific gravity with a Baume spindle (Staley News 3-1-41). This method is quite accurate for liquids.

Then too there is another method which is literally "rule-of-thumb". Some of us, by long experience, can grab a handful of starch or feed, feel it carefully and say, "Hmm,—about 14.1% I'd say". It's worth pointing out that this method is dependent for its accuracy on the individual's state of nutrition and how the battle is going on the home front. The laboratory has never been able to work out exact tables showing the relation between these things and the moisture content of gluten feed so we don't rely entirely on this method.

All Methods Depend On Good Sampling

In a discussion of any kind of control tests it is necessary to strike a blow in the cause of good sampling techniques. Moisture diffuses slowly in any material so it may be high in one part of a container and low in another. Or it may be in lumps which will be hard to include in the right proportions. So it is important that large representative samples be taken and that they be thoroughly mixed before the small test sample is taken from them. Samples must be kept in tightly closed bottles because the relative humidity of the air may cause them to either gain or lose moisture.

So moisture testing, although one of the most common and frequent of our tests and although carried on by a number of well tested methods, is nevertheless one of the most difficult from which to obtain consistently accurate results. We worry about the answers we get because on them depend many of the decisions which operating men must make about processing procedures.